



वर्धमान महावीर खुला विश्वविद्यालय  
कोटा

एम.जे.एम.सी. -7  
विकासात्मक जनसंचार  
(Development Communication)



पत्रकारिता एवं जनसंचार स्नातकोत्तर पाठ्यक्रम  
(Master of Journalism & Mass Communication)

**विकासात्मक जनसंचार**

विकासात्मक जनसंचार शोध : एक समीक्षा  
शैक्षणिक तकनोलॉजी

**4**





वर्धमान महावीर खुला विश्वविद्यालय, कोटा

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स्नातकोत्तर पाठ्यक्रम

विकासात्मक जनसंचार - 4

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## पाठ्यक्रम विशेषज्ञ समिति

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* <b>प्रो. जी.एस.एल. देवड़ा</b> कुलपति कोटा खुला विश्वविद्यालय, कोटा (अध्यक्ष समिति)	* <b>प्रो. ए.के. बनर्जी</b> पूर्व-अध्यक्ष, पत्रकारिता विभाग बनारस हिन्दू विश्वविद्यालय वाराणसी
* <b>प्रो. ए.डब्ल्यू.खान</b> निदेशक (विकास एवं प्रशिक्षण) कॉमनवेल्थ ऑफ लर्निंग 1285 वेस्ट ब्राइवे वैक्वर (कनाडा)	* <b>प्रो. जे.एस. यादव</b> निदेशक भारतीय जनसंचार संस्थान नई दिल्ली
* <b>राधेश्याम शर्मा</b> पूर्व-महानिदेशक माखनलाल चतुर्वेदी राष्ट्रीय पत्रकारिता विश्वविद्यालय, भोपाल(म. प्र.)	* <b>डॉ. भंवर सुराणा</b> ब्यूरो चीफ/ विशेष संवाददाता दैनिक हिन्दुस्तान जयपुर
* <b>प्रो. ओ.पी. केजरीवाल</b> निदेशक, नेहरू मेमोरियल म्यूजियम एण्ड लाइब्रेरी तीन मूर्ति भवन, नई दिल्ली	* <b>प्रो. रमेश जैन</b> अध्यक्ष-जनसंचार विभाग कोटा खुला विश्वविद्यालय, कोटा

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### संयोजक

**डॉ. रमेश जैन**- अध्यक्ष, जनसंचार विभाग  
कोटा खुला विश्वविद्यालय, कोटा

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### पाठ-संपादक एवं भाषा-संपादक

पाठ-संपादक <b>प्रो. रमेश जैन</b> अध्यक्ष, जनसंचार विभाग कोटा खुला विश्वविद्यालय, कोटा	भाषा-संपादक <b>डॉ. विष्णु पंकज</b> वरिष्ठ साहित्यकार-पत्रकार जयपुर
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### अकादमिक एवं प्रशासनिक व्यवस्था

- \* डॉ. आर.वी. व्यास, कुलपति
  - \* डॉ. एच.बी. नन्दवाना, विभागाध्यक्ष
  - \* डॉ. पी.के. शर्मा, निदेशक, पा.सा.उ. एवं वि. विभाग
- 

### पाठ्यसामग्री उत्पादन एवं वितरण विभाग

- \* योगेन्द्र गोयल  
सहायक उत्पादन अधिकारी
- 

**सर्वाधिकार सुरक्षित । इस पाठ्यक्रम का कोई भी अंश कोटा खुला विश्वविद्यालय / वर्धमान महावीर खुला विश्वविद्यालय, कोटा की लिखित अनुमति प्राप्त किए बिना या मिश्रयोगाफी (चक्रमुद्र) अथवा किसी अन्य साधन से पुनः प्रस्तुत करना वर्जित है।**

**वर्धमान महावीर खुला विश्वविद्यालय के पाठ्यक्रमों के विषय में और अधिक जानकारी विश्वविद्यालय के कुलसचिव, वर्धमान महावीर खुला विश्वविद्यालय, रावतभाता रोड, कोटा से प्राप्त की जा सकती हैं।**

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कुलसचिव, वर्धमान महावीर खुला विश्वविद्यालय, कोटा द्वारा प्रकाशित

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## पाठ लेखक

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**1. प्रो. रमेश जैन**

अध्यक्ष जनसंचार विभाग  
कोटा खुला विश्वविद्यालय

**2. राम कुमार**

वरिष्ठ जनसंचार कर्मी

**3. डा. महेंद्र मधुप**

संयुक्त निदेशक प्रशिक्षण एवं प्रचार  
राजस्थान राज्य कृषि विपणन बोर्ड,  
जयपुर

**4. डॉ. विष्णु पंकज**

वरिष्ठ जनसंचारकर्मी  
जयपुर

**5. डॉ. अनाम जैतली**

अध्यक्ष राजनीति शास्त्र विभाग  
कोटा खुला विश्वविद्यालय, कोटा

**6. गुलाब बत्रा**

वरिष्ठ संवाददाता  
यूनिवार्ता, समाचार समिति, जयपुर

**7. के. एस. मेहता**

भोपाल

**8. डॉ. महेन्द्र भानावत**

वरिष्ठ जनसंचारकर्मी  
उदयपुर

**9. डा. महीपाल**

नई दिल्ली

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## खंड एवं इकाई परिचय

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### इकाई परिचय

इकाई - 12 'विकासात्मक जनसंचार शोध: एक समीक्षा की है। इस इकाई में विकास के लिए संचार के प्रारम्भिक तरीके, विकासात्मक जनसंचार के प्रमुख सिद्धान्त, विकासात्मक जनसंचार सिद्धान्तों में बदलाव, साधारणीकरण, साधारणीकरण के विविध पक्ष - सहृदयता, बटना (शेयरिंग), रस उत्पत्ति, साधारणीकरण, समानता आदि बिन्दुओं की विवेचना की गई है।

इकाई - 13 में शैक्षणिक तकनोलॉजी की विस्तार से विवेचना की गई है। गत तथ्यों में शैक्षणिक तकनोलॉजी में अपूर्व क्रांति आई है। सीखने के साधन - हार्डवेयर एवं सॉफ्टवेयर, बहुदृश्यीय माध्यम केन्द्र (मल्टी मीडिया सेन्टर) हो गए हैं। अब शिक्षा रेडियो तथा टेलीविजन के माध्यम से दी जाने लगी है। मुक्त शिक्षा या दूरस्थ शिक्षा शिक्षा के क्षेत्र में नए आयाम बने। शिक्षा को घर-घर तक पहुँचाने में केवल एवं सैटेलाइट ने महत्वपूर्ण भूमिका निभाई है। इन सभी तथ्यों की व्याख्यान इकाई में की गई है।

इकाई - 14 'इनफारमेशन तकनोलॉजी बिल' की है। इसमें भारत सरकार द्वारा पारित 'सूचना तकनोलॉजी बिल' की विस्तृत व्याख्या की गई है। जनसंचार के शीक्षार्थी को इस बिल की प्रमुख धाराओं एवं विशेषताओं से पारित होना जरूरी है।

पाठ्यक्रम - सप्तम्
खण्ड (4)

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इकाई - 12	
विकासात्मक जनसंचार शोध : एक समीक्षा	7-17
इकाई - 13	
शैक्षणिक तकनोलॉजी	18-34
इकाई - 14	
इनफारमेशन तकनोलॉजी बिल (Information Technology Bill)	35-115

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## इकाई 12 विकासात्मक जनसंचार शोध: एक समीक्षा

(Development Communication Research :  
An overview)

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### इकाई की रूपरेखा

- 12.1 उद्देश्य
- 12.2 प्रस्तावना
- 12.3 विकास में संचार की महत्ता
  - 12.3.1 विकास के लिए संचार के प्रारम्भिक तरीके
  - 12.3.2 विकासात्मक जनसंचार के प्रमुख सिद्धान्त
- 12.4 विकासात्मक जनसंचार सिद्धान्तों में बदलाव
- 12.5 साधारणीकरण
- 12.6 साधारणीकरण के विविध पक्ष ने
  - 12.6.1 सहृदयता
  - 12.6.2 बांटना (शेयरिंग)
  - 12.6.3 रस उत्पत्ति
  - 12.6.4 साधारणीकरण
  - 12.6.5 समानता
- 12.7 सारांश
- 12.8 निबंधात्मक प्रश्न
- 12.9 कुछ उपयोगी पुस्तकें

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### 12.1 उद्देश्य

- इस इकाई के अध्ययन के बाद आप बता सकेंगे कि भारतीय परिप्रेक्ष्य में जनसंचार की विकासात्मक भूमिका को स्वतन्त्रता के बाद से महत्व दिया जाने लगा था।
- आप यह भी जान सकेंगे कि परम्परागत जनसंचार माध्यमों सहित सभी आधुनिक जनसंचार माध्यमों का सुदृढ़ ढांचा विकास को गति देने के लिए निरन्तर तैयार किया गया।
- इस सन्दर्भ में अध्ययन के बाद आप स्पष्ट कर सकेंगे कि जनसंचार को जितना मजबूत किया गया उतना ही आधुनिकीकरण की दृष्टि से भारत तेज गति से आगे बढ़ा।
- विकास के साथ जनसंचार को जोड़ने के सन्दर्भ में जितनी भी शोध हुई उसका विकास पर क्या प्रभाव पड़ा। इस तथ्य से आप अच्छी तरह परिचित हो सकेंगे।
- विकासात्मक जनसंचार के क्षेत्र में किए गए विभिन्न शोध ने समय-समय पर जनसंचार को नई दिशा प्रदान की है इससे परिचित हो सकेंगे।

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## 12.2 प्रस्तावना

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दुनिया के विचित्र देशों के विकास की अपनी अलग-अलग प्राथमिकताएं रही हैं और विकास के लिए किसी भी देश के यथार्थ से जुड़ी हुई योजनाएं और उन योजनाओं से किसी देश के आम आदमी को जोड़ने एवं भागीदार बनाने के लिए जनसंचार की जरूरतें और ढांचा भी भिन्न-भिन्न होगा। न तो विकास का कोई एक बना बनाया मॉडल हो सकता है जनसंचार और न ही जनसंचार की कोई एक मत नीति तय हो सकती है।

विकास को गतिमय बनाने और उसके लक्ष्यों को पाने के लिए यह जरूरी माना गया है कि जनता में विकास की अवधारणा स्पष्ट हो तथा वे विकास प्रक्रिया से जुड़े। इसके लिए जनसंचार के विभिन्न माध्यमों के उपयोग को अनिवार्य माना गया है। गत कई दशकों में विकासात्मक जनसंचार के विभिन्न पहलुओं पर दुनिया भर शोध कार्य हुए हैं। इन शोध कार्यों के विश्लेषण एवं इन पर बहस के कारण किस प्रकार जनसंचार और विकास के तालमेल प्रभावित हुए और शोध कार्य कितने उपयोगी साबित हुए इन्हीं कुछ मुद्दों पर इस इकाई में चर्चा करने का प्रयास किया गया है। एक प्रकार से विकास और जनसंचार एक ही सितारे के दो पहलु माने गए हैं।

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## 12.3 विकास में जनसंचार की महत्ता

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विकासात्मक जनसंचार या विकास के किसी एक मॉडल की अवधारणा पर एकमत होना कठिन है। लेकिन उचित होगा किसी एकमत की तलाश के बजाय हम विकासात्मक जनसंचार को एक ऐसी प्रक्रिया के रूप में मान लें जो समाज के सर्वाधिक लोगों के विकास और उसमें भौतिक एवं सामाजिक दृष्टि से भागीदारी बढ़ाने में सहयोग की भूमिका का निर्वाह कर सकें। जनसंचार का विकास में योगदान तो सर्वसम्मति से स्वीकार किया जा चुका है। मात्र इस योग्यता की प्रकृति, सीमा एवं विकास में जनसंचार के तौर तरीके या मैकेनिज्म के सन्दर्भ में एक स्पष्ट समझ की अनेक बार कमी अनुभव होती है। यह एक आम धारणा और विश्वास बना हुआ है कि जनसंचार में वृद्धि से विकास का मार्ग प्रशस्त होता जाएगा। इस विचार के कारण सब प्रकार के ऐसे प्रयास निरन्तर किए जाते हैं। इनसे जनसंचार की ढांचागत सुविधाओं में वृद्धि और विस्तार हो।

यह तो सर्वविदित है कि आम जनता को एकजुट करने एवं देश के विकास में उनकी रुचि एवं भागीदारी पैदा करने में जनसंचार के महत्व को पूरी तरह स्वीकार किया गया है। भारत में, आम जनता तक विकास की बात को पहुँचाने, इस संदर्भ में उनसे संवाद करने तथा विकास को गति देने के लिए उनको नई कुशलता एवं उपकरणों से सज्जित करने की बात को बार-बार एक के बाद एक पंचवर्षीय योजनाओं में दोहराया गया एवं यह अनुभव किया गया कि देश के सुनियोजित विकास के लिए योजनाबद्ध कार्यक्रम अपनाया जाए।

### 12.3.1 विकास के लिए संचार के प्रारंभिक तरीके

भारत की प्रथम पंचवर्षीय योजना में ही विकास के विविध कार्यक्रमों और योजनाओं को भली प्रकार समझने की आवश्यकता को स्पष्ट रूप से अनुभव किया गया था कि हर योजना



की प्राथमिकताओं की समझ को विस्तार देने से ही उसकी योजनाओं के उद्देश्य की पूर्ति में भूमिका को जोड़ना आवश्यक है। ताकि योजनाओं के निहित लक्ष्यों को पूरा किया जा सके। यह भी महसूस किया गया कि जितनी भी संचार की प्रणालियां एवं तरीके उस समय उपलब्ध थे उन्हें विकास के उद्देश्य को पूरा करने के लिए विकसित किया जाए। रेडियो, फिल्म, गीत और नाटक जैसे प्रचलित माध्यमों के साथ-साथ मुद्रित एवं बोले गए शब्दों से सभी जनसंचार माध्यमों का उपयोग किया जाए। यह भी अनुभव किया गया कि सरल भाषा में देश के विभिन्न भागों की जरूरतों के अनुसार साहित्य तैयार किया जाए। यह भी नहीं इस बात का महत्व भी समझा गया कि जो जनसंचार माध्यम अपनाएं जा रहे हैं वे लोगों को अच्छी तरह समझाने और उनकी इच्छाओं के अनुरूप है या नहीं। विकास के लिए जनसंचार का उपयोग करने में आने वाली कठिनाईयों को भी समझा जाए और जनसंचार के तरीके को बेहतर बनाया जाए।

प्रथम पंचवर्षीय योजना के बाद की पंचवर्षीय योजनाओं के संदर्भ में भी दूरदराज के क्षेत्रों तक जनसंचार को प्रभावपूर्ण तरीके से पहुँचाने पर जोर दिया गया। इस प्रकार विकास में जनसंचार को अति महत्वपूर्ण माने जाने के परिणामस्वरूप जनसंचार के तत्कालीन तौर तरीके भी विकसित हुए और समय के साथ जनसंचार माध्यमों के कई प्रकार सामने आए एवं माध्यम विकास को गति देने में बेहतर साबित हुए।

यों तो अनेक कमियां विकास के मार्ग में रहीं हैं लेकिन इस तथ्य से कोई नकार नहीं सकता कि आजादी के बाद भारत ने अनेक क्षेत्रों में प्रगति की है। विकास और जनसंचार के भारतीय ढांचे में भारी विस्तार हुआ है। जनसंचार एवं विकास प्रक्रियाएं सुदृढ़ बनी हैं और एक दूसरे को सहयोग करते हुए देश के विकास में भागीदार रही हैं। लेकिन अनेक लोग इस तथ्य से असहमत हैं कि विकास और जनसंचार प्रक्रियाओं दोनों का समाना रूप से विकास हुआ है और इन दोनों ने सामाजिक असमानताओं के निराकरण में बराबर की भागीदारी निभाई है। विकासात्मक जनसंचार के क्षेत्र में कार्यरत विद्वानों के लिए विस्तार से और गहराई से इस मतभेद का अध्ययन करना एक चुनौती रहा है। उनके लिए यह सुझाव देना भी कठिन रहा कि वे कौन से तरीके या मार्ग अपनाया जाए जिससे जनसंचार और विकास इन दोनों की बराबर भागीदारी रहे ताकि विकास का रास्ता अधिक सुगम और प्रभावपूर्ण बन सके।

### 12.3.2 विकासात्मक जनसंचार के प्रमुख सिद्धान्त

बाजार आधारित अर्थव्यवस्था ने भारत सहित अधिकांश विकासशील देशों की विकासात्मक विचारधारा को प्रभावित किया। डेनियल लर्नर नामक एक विचारक ने विकास के संबंध में 'पासिंग ऑफ़ दी रेडिशनल सोसायटी' नामक पुस्तक में जनसंचार, नगरीकरण और आधुनिकीकरण के संबंधों की चर्चा करते हुए लिखा है कि वैचारिक स्तर पर जहां जनसंचार की जितनी अधिक सुविधाएँ होंगी वहां उतना ही अधिक या तीव्र गति से आधुनिकी काल होगा। शायद 1960 के दशक में ऐसे ही विचार से प्रेरित होकर यूनेस्को ने विभिन्न देशों के लिए जनसंचार या माध्यमों की ढांचागत व्यवस्था का एक न्यूनतम कार्यक्रम तय किया और यह बताया कि जिस देश में जनसंचार का न्यूनतम ढांचा नहीं होगा उस देश को अविकसित देशों की श्रेणी में रखा जाएगा। यह माना जाएगा कि जनसंचार की न्यूनतम सुविधाओं के अभाव को दूर करने के लिए विभिन्न ऐसे देशों के माध्यमों के विस्तार के लिए सुविधाओं का एक ढांचा

तैयार करना होगा यदि उन्हें विकास की ओर बढना है। इस प्रकार यूनेस्को के मानदण्डों के अनुसार विकासात्मक जनसंचार का यह एक सिद्धान्त रहा।

नवीनता का समावेश (डफन्यूजन ऑफ इनोवेशन्स) के संदर्भ में भी कई व्यवस्थित शोध कार्य किए गए हैं। वास्तव में अधिकांश शोध अध्ययन के विकासात्मक जनसंचार अर्थात् विकास और जनसंचार को लेकर किए गए हैं। वे इन दो प्रकार के वैचारिक सिद्धान्तों से सर्वाधिक प्रभावित रहे हैं- जनसंचार माध्यमों के एक न्यूनतम ढांचे का होना तथा दूसरा नवीनता का समावेश। जनसंचार की सुविधाओं एवं प्रक्रियाओं का विचारों एवं नवीनताओं का स्थानान्तरण करने के सवाल में अनेक विद्वानों के ध्यान को भी आकर्षित किया है। जिनकी दिलचस्पी जनकल्याण समाजों के विकास में रही। शोध कार्य का पहला ध्यान सर्वाधिक जनसंचार के ढांचे पर रहा और जनसंचार प्राप्तकर्ता भी उनके ध्यान का दूसरा महत्वपूर्ण मुद्दा रहा। यह माना गया कि हर व्यक्ति की प्रवृत्ति को पहले समझना जरूरी है यदि उसकी परम्परागत प्रवृत्ति को नवीनता की ओर उन्मुख करना है और उसे नए प्रकार के व्यवहार की दिशा में ढालना है।

उपरोक्त तथ्यों को विकासात्मक जनसंचार के सिद्धान्तों, शोध एवं व्यवहार में लाने की दिशा में समुचित रूप से ध्यान में रखा गया है।

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## 12.4 विकासात्मक जनसंचार सिद्धान्तों में बदलाव

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प्रारम्भिक रूप से विकासात्मक जनसंचार के जो सिद्धान्त प्रतिपादित किए गए और विकास के लिए जो जनसंचार का तौर तरीका ठीक माना गया, उसमें 1970 के दशक में कुछ कमियां दृष्टिगोचर होने लगीं। यह महसूस किया जाने लगा कि विकास की गति जितनी तेज होनी चाहिए थी, वह धीमी रही और जो विकास हुआ, वह सामाजिक न्याय के अनुरूप नहीं हुआ। भारत के संदर्भ में भी, जहाँ चहुँ ओर विकास हुआ, और उपलब्धियाँ भी रही लेकिन यह देखने में आया कि विकास की व्यूह रचना से लोगों के बीच समानता के बजाय असमानता की खाई चौड़ी हुई है। यहां तक कि भारत में जो हरित क्रान्ति हुई उसका वो लोग कोई लाभ नहीं उठा सके जिसके पास भूमि, धन सिंचाई सुविधाओं आदि जैसे स्रोतों की कमी थी। हरित क्रान्ति से जो असमानताएं प्राचीन क्षेत्रों में पैदा हुई उसके बारे में रिजर्व बैंक ऑफ इण्डिया की क्रेडिट कमेटी ने भी चेतावनी दी और विकास की व्यूह रचना की समीक्षा करके ग्रामीण क्षेत्रों में बढ़ते असमानता के तनाव की ओर ध्यान खींचा।

आमतौर से विकास के तौर तरीकों पर लोग सवाल खड़े करने लगे और विकास की व्यूह रचना में कोई वैकल्पिक सुधार चाहने लगे। 1960 और 1970 के दशक के अन्तिम दिनों में विकासात्मक जनसंचार की प्रयुक्त विधियों में खामियां नजर आने लगीं। विकास की गति सतही तौर पर धीमी नजर आने लगी। यह भी अनुभव किया जाने लगा कि विकास कार्य सामाजिक न्याय के अनुरूप नहीं है। भारत में पहुँच और विकास उपलब्धियों के बावजूद विकास कार्य में असमानता नजर आती है।

संबंधित ग्रामीण विकास (इन्टीग्रेटेड रुरल डेवलमपेन्ट) एवं अन्य गरीबी उनमूलन कार्यक्रम विकास अवधारणा के बारे में समीक्षा के परिणाम थे। यह देखा गया कि विकास के जो लाभ विकास प्रक्रियाओं के परिणामस्वरूप मिलने चाहिए, वे आम आदमी को नहीं मिल पा रहे।

इसलिए जनसंचार का कोई ऐसा तरीका अपनाया जाना चाहिए जो समन्वित ग्रामीण जनसंचार विकास जैसी गरीबी मिटाने वाली योजनाओं को बल दे सके।

यह भी सोचा गया कि विकास करना है तो जनसंचार सुविधाओं में वृद्धि एवं विस्तार जरूरी है। लेकिन यह भी माना गया कि जनसंचार सुविधाओं में वृद्धि विकास की कोई संतोषजनक शर्त नहीं हो सकती। व्यक्ति महत्वपूर्ण है लेकिन वह सामाजिक प्रणाली जिसका व्यक्ति एक भाग है, वह भी व्यक्ति के व्यवहार को नवीनता देने एवं विकास प्रक्रिया में उसकी भागीदारी बढ़ाने की दिशा में कम महत्वपूर्ण रही है। जनसंचार में स्रोत, संदेश, चैनल एवं गंतव्य (SMCD) जो कि जनसंचार शोध में उपयोगी माना गया है उसकी भी विकासात्मक जनसंचार के संदर्भ में फिर से समीक्षा की जरूरत अनुभव की गई। इस प्रकार सामाजिक प्रणाली पर ध्यान देने की आवश्यकता को विकासात्मक जनसंचार अध्ययनों में अधिक बल दिया जाने लगा।

## 12.5 साधारणीकरण

जनसंचार और विकास के संदर्भ में जो स्वदेशी उपयोगी शब्द है वह सामाजीकरण। इसका तात्पर्य है कि चीजों को सरलता से देखा जाए। आधुनिक अंग्रेजी शब्द 'कम्यूनिकेशन' या लैटिन शब्द 'कम्यूनिस' का अर्थात् कि लोगों के बीच की एकता 'oneness' ढूंढी जानी चाहिए जिसको आपस में समान रूप से सहभागी समझकर वे अपने को एक दूसरे के करीब पा सके। यद्यपि साधारणीकरण के पीछे कुछ अलग दर्शन हैं। यह हमें भारतीय समाज में जनसंचार के अर्थ को समझने में अधिक मदद कर सकता है।

साधारणीकरण को बेहतर समझने के लिए हमें भारतीय नाट्यशास्त्र की जड़ों को तलाशना चाहिए क्योंकि नाट्यशास्त्र की अवधारणा का दर्शन जनसंचार-दर्शन पर आधारित है। भारत में नाट्य (ड्रामा) और नृत्य (डांस) के रूप साधारणीकरण से संबंध रखते हैं। नाट्यशास्त्र को बहुधा पांचवे वेद के रूप में सन्दर्भित किया जाता है। इसका कारण यह बताया गया है कि चारों वेदों में निहित कठिन विचारों और दर्शन को साधारण एवं सरल रूप में प्रस्तुत करने के लिए और आम आदमी तक इन गूढ़ विचारों और दर्शन का विस्तार करने के लिए नाट्य शास्त्र की संरचना की गई थी।

भरत मुनि, जिन्होंने नाट्य शास्त्र की रचना की उन्होंने मानव-अभिव्यक्ति के सिद्धान्तों को परिभाषित किया। इस शास्त्र की ठीक तिथि कुछ लोग ईसा से पूर्व दूसरी सदी मानते हैं तो कुछ का कहना है कि ईसा के बाद पहली सदी में इसकी रचना हुई। कुछ का कहना है कि ईसा के बाद चौथी शताब्दी में नृत्य एवं नाट्य के विभिन्न पक्षों की बारीक से बारीक रूप में विस्तृत व्याख्या के साथ यह शास्त्र रचा गया जिसमें मानवीय जनसंचार के मौलिक तत्वों को स्पष्ट किया गया। इस शब्द का उपयोग बाद में साहित्य में भी कविता के सौन्दर्य बोध के विभिन्न पक्षों को स्पष्ट करने के लिए किया गया। अब साधारणीकरण शब्द का उपयोग किसी विचार को सरल और सहज रूप से ग्राह्य कराने की प्रक्रिया के लिए काम में लिया जाता है। लेकिन जनसंचार की अवधारणा के रूप में साधारणीकरण का अर्थ थोड़ा भिन्न हो जाता है। यह शोध के क्षेत्र में एक सार्थक सैद्धान्तिक मदद करने वाला शब्द बन जाता है।

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## 12.6 साधारणीकरण के विविध पक्ष

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जनसंचार में साधारणीकरण की भारतीय अवधारणा के प्रमुख पाँच ऐसे पक्ष हैं जो विकासात्मक जनसंचार की अवधारणा को स्पष्ट करने एवं समझाने में सहायक हो सकते हैं। इन्हें पाँच प्रमुख तत्व भी कह सकते हैं। ये तत्व हैं -

1. सहृदयता,
2. साधारणीकरण,
3. बाटना,
4. समानता।
5. रस उत्पत्ति,

अब हम इनका विस्तार से अध्ययन करेंगे।

### 12.6.1 सहृदयता

विकासात्मक जनसंचार अवधारणा में यह माना गया है कि संचार का सम्प्रेषण की प्रक्रिया में संलग्न सभी लोगों में सहृदयता होनी चाहिए। इसका अर्थ है कि एक दूसरे के लिए हृदय में सहानुभूति होनी चाहिए। यह ऐसे काव्यात्मक अभिव्यक्ति का शब्द है जो यह बताता है कि जनसंचार की प्रक्रिया की पूर्णता और सफलता का आधार उससे जुड़े सभी लोगों के हृदय में एक प्रकार की सहानुभूति संचार करने वाली होनी चाहिए। इसका यह तात्पर्य भी है कि संचारकर्ता (कम्यूनिकेटर) को यह बात पूरी तरह अपने जहान में रखनी चाहिए कि जो संदेश वह सन्देश प्राप्तकर्ता (रिसीवर) तक पहुँचाना चाहता है। वह प्राप्तकर्ता के हृदय को छूने की कोशिश करे। भारतीय परिवेश का अध्ययन करने पर यह बात पूरी तरह स्पष्ट होती है कि भारत की आम जनता के प्रति उनकी सहृदयता के कारण ही उनका हर सन्देश जनता के हृदय को पूरी तरह छूने की क्षमता रखता था। यही कारण है कि वे जनता के साथ अति प्रभावपूर्ण जनसंचार करने में सफल हुए। वे एक साधारण व्यक्ति की तरह की वेशभूषा धारण किए रहते हैं।

इस प्रकार जनता के साथ सहृदयता और पहचान जितनी अधिक होगी, जनसंचार उतना ही प्रभावपूर्ण एवं सार्थक होगा। यदि ऐसा है तो जनसंचार शोध का यह एक प्रमुख प्रश्न है कि जनसंचार प्रक्रिया में जो दल का समूह शामिल है वे एक दूसरे के प्रति कितने सहृदय हैं एवं एक दूसरे के बीच कितनी गहरी पहचान कायम कर पाते हैं।

### 12.6.2 बाटना (शेरिंग)

साधारणीकरण के संदर्भ में सहृदय होने का तात्पर्य जनसंचार के द्वारा लोगों को उत्प्रेरित करना नहीं बल्कि उनके बीच सहृदयता के भाव को उत्पन्न करना है। इस प्रकार भारतीय दृष्टिकोण से साधारणीकरण जनसंचार की पश्चिमी धारणा से बिल्कुल भिन्न है। जिस प्रकार अरस्तु का 'रेहटोरिक' का भाषण देने का लक्ष्य लोगों को उत्प्रेरित कर देना था अर्थात् भाषण के द्वारा लोगों को प्रभावित करना था। इसी बात को पश्चिमी अवधारणा में जनसंचार के संदर्भ में स्वीकार किया गया। वास्तव में पश्चिमी जनसंचार अवधारणा के अनुसार बराबर के लोग संवाद के द्वारा एक दूसरे को किसी चीज के लिए प्रेरित करना है। लेकिन भारतीय जनसंचार की साधारणीकरण की अवधारणा इससे बिल्कुल विपरीत है। जहाँ असमान लोग सहृदयता के साथ एक दूसरे के साथ या आपस में विचार को बांटने (शेर) या ग्रहण करते हैं।

इस आपस में बांटने का लक्ष्य भी एक दूसरे को प्रभावित करना नहीं होता बल्कि लक्ष्य होता है विचार या भाव को आरम्भ में बांटने या शेयर करने का आनन्द लेना। किसी प्रक्रिया का आनन्द लेना संचार को सार्थकता प्रदान करता है। इस प्रकार आपस में विचार को बांटने या शेयर करने की साधारणीकरण की भारतीय संदर्भ में जनसंचार की समाज को उत्प्रेरित करने वाली बेहतर प्रक्रिया है।

### 12.6.3 रस उत्पत्ति

नाट्य और नृत्य आपस में बहुत करीब से जुड़े पर ये कला के विकसित रूप हैं जो नाट्य शास्त्र के अभिन्न अंग हैं। इस संदर्भ में नाट्य या नृत्य करने वाले (Performance) एवं श्रोता या दर्शक (Audience) की दोनों की भागीदारी को साधारणीकरण के दर्शन का केन्द्रीय बिन्दु माना गया है। नाट्यशास्त्र को भारतीय कलाओं का प्रमुख स्रोत माना गया है। यह भी माना गया है कि जनता की प्रस्तुति करने वाला या करने वाली (Performer) का मूल कार्य श्रोताओं या दर्शकों में रस की उत्पत्ति करना होता है और उनकी मुद्रा को एक स्थायी मोड़ देना होता है। इसका तात्पर्य यह है कि दर्शकों में सौन्दर्य भाव उत्पन्न हो और परिणाम स्वरूप उन्हें सुखानुभूति हो। यदि किसी भी नाट्य या नृत्य के द्वारा यह कार्य सम्पन्न होता है तो जनसंचार की प्रक्रिया को पूर्ण माना जाता है। अर्थात् प्रक्रिया का भाव पूर्ण माना जाता है। इस प्रकार साधारणीकरण में श्रोताओं या दर्शकों के बीच भावों एवं मुद्राओं की समान प्रतिक्रिया या शेयरिंग होनी चाहिए। यह साधारणीकरण या भारतीय जनसंचार का एक प्रमुख तत्व है। इस प्रकार मनोरंजन मात्र मनोरंजन न रहकर प्रभावपूर्ण सम्प्रेषण या जनसंचार की एक प्रक्रिया मानी गई है।

### 12.6.4 साधारणीकरण

जनसंचार की भारतीय अवधारणा-साधारणीकरण में कभी बातों या तत्वों को सरल, सहज और साधारण ढंग से प्रस्तुत करने को सर्वोच्च प्राथमिकता दी गई है। जनसंचार की साधारणीकरण अवधारणा में सरलीकरण या चीजों को साधारण रूप में प्रस्तुत करना भारतीय विचार से जनसंचार का अनिवार्य आयाम है। जनसंचार प्रक्रिया में उलझनों भरी कठिन अवधारणाओं और विचारों को प्रस्तुतकर्ता (स्रोत) समुचित और प्रचलित मुहावरों या उदाहरणों के द्वारा प्राप्तकर्ता या श्रोता तक संदेश को अति सरल रूप से प्रेषित करने का प्रयास करता है। जनसंचार का यह तरीका जनसंचार को लचीला, गतिशील, व्यावहारिक एवं सामाजिक संबंधों भय एक प्रभावपूर्ण उपकरण या इन्स्ट्रूमेन्ट बनाती है। इसमें श्रोता के प्रेरित होने का भाव भी छिपा रहता है।

भारतीय परिवेश में सूफी या सन्तों के द्वारा अति कठिन और उलझी ऐसी धार्मिक, सामाजिक और सांस्कृतिक अवधारणाओं को जन-जन तक लोकप्रिय बनाने और पहुँचाने के लिए साधारणीकरण एवं उदाहरण या दृष्टांत देकर समझाने का प्रयास करने की एक लम्बी परम्परा रही है। इसका भी परिणाम है कि विशाल भारत की सांस्कृतिक विविधता, एकता के धागों जनसंचार में आज तक बंधी हुई है। लोक कलाओं की समृद्ध परम्परा और माध्यमों ने भी भारत

में संस्कृति को लोकप्रियता के धागों में बांधने की सार्थक भूमिका निभाई है। वास्तव में साधारणीकरण एक ऐसा अध्याय है जो भारतीयों की एक विरासत है। आम ग्रामीणों की रोजमर्रा की बातचीत में कहावतें, मुहावरे और आम उदाहरण साधारणीकरण का प्रमाण हैं।

### 12.6.5 समानता

यद्यपि साधारणीकरण का लक्ष्य लोगों में कोई बात एकसी (कॉमननेस) या उनमें एकता की प्रक्रिया को प्राप्त करना है। यह समानता के द्वारा ही संभव है। जनसंचारकर्ता (कम्यूनिकेशन) एवं प्राप्तकर्ता (रिसीवर) के बीच असमान रूप से शेयरिंग अर्थात् चीजें आपस में बाँटेगी यदि कम्यूनिकेशन में सन्देशों का प्रवाह प्राप्तकर्ता की जरूरत से बहुत अधिक होगा। जनसंचार के संदर्भ में भारतीय परिवेश में संदेश भेजने वाला अर्थात् कम्यूनिकेशन और प्राप्तकर्ता आधुनिक जनसंचार प्रक्रिया में समान नहीं माना जाता। स्रोत को बड़ा माना जाता है और प्राप्तकर्ता को छोटा माना जाता है। यहां सम्बन्धों में अंतर आता है। एक का वर्चस्व है और दूसरा उसके नीचे आता है। इस धारणा के कारण जनसंचार प्राप्तकर्ता द्वारा स्रोत को सम्मान एवं उच्च दर्जे पर मानने लगता है। यहां उपदेशक और श्रोता या गुरु और शिष्य जैसे एक संबंध की संरचना होने लगती है।

यदि स्रोत और प्राप्तकर्ता-दोनों असमान भी हो लेकिन यदि उनमें सहृदयता होगी तो असमान संबंधों में बावजूद जनसंचार सन्तोषजनक होगा और इस प्रक्रिया में शामिल दोनों समूहों की इस उत्पत्ति के द्वारा प्रेरित करेगा। इस विषय पर और अधिक शोध की गुंजाइश है कि यह एक समान साधारणीकरण की सामाजिक प्रक्रिया ही थी जिसकी वजह से भारतीय सभ्यता के प्रारम्भिक दौर में श्रम के स्पष्ट विभाजन एवं प्रभावपूर्ण जनसंचार के कारण भारतीय समाज की तीव्र गति से उन्नति हुई। यह बात अलग है कि उसके पश्चात् आने वाले समय में एक तय ढांचे में समाज को ढाल देने के कारण उसकी गति में रूकावट आई। इसके अलावा जमींदारी प्रथा ने भारत में जनसंचार के क्षेत्र में समानता के आयाम को क्षति पहुँचाई। ये विचार एक-एक सामने आते हैं यद्यपि इन पर और अधिक शोध ही जरूरत है। जहां तक साधारणीकरण का प्रश्न है, वह भारतीय समाज और जनसंचार के सम्बन्ध में जो धारणा है उसे स्पष्ट करने में मदद करता है।

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## 12.7 सारांश

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यदि साधारणीकरण से जनसंचार प्रक्रिया के ढांचे को बेहतर ढंग से समझने में मदद मिलती है, तो विकासात्मक जनसंचार में संलग्न विद्वान इन कुछ प्रश्नों की समीक्षा पर चिन्तन कर सकते हैं : -

1. जो लोग जनसंचार के क्षेत्र में संलग्न हैं, वे कितने सहृदय हैं अर्थात् इस बारे में उसका कितना चिन्तन है और के (एक दूसरे से कहा तक 'पहचान' (आईडेन्टीटी) रखते हैं?
2. वे अपने आप से यह प्रश्न भी कर सकते हैं कि जनसंचारकर्ता (कम्यूनिकेशन), श्रोताओं या दर्शकों में जो कि जनसंचार के लक्ष्य हैं उनमें भावनाएँ या भावों की उत्पत्ति करने में कितने सफल होते हैं?

3. यह सवाल भी उठा सकते हैं कि जनसंचारकर्ता और जनसंचार प्राप्तकर्ता के बीच संबंधों में कितनी समानता है? कारण समानता के धरातल पर जनसंचार प्रक्रिया को सम्पन्न होने में सुविधा मिलती है। ज्ञान, शक्ति और क्षमता के कारण प्राप्तकर्ता की तुलना में जनसंचारकर्ता का सम्मान ज्यादा होने की दशा में अर्थात् दोनों के बीच यह समानता होते हुए भी संबंधों में कितनी सहृदयता रहती है ?

4. किस सीमा तक जनसंचार की मौलिक अवधारणा को सरल और साधारण बनाया गया है जिसे वह प्राप्तकर्ता की समझ को पूरी तरह छू सके और उसे समझने का आनन्द भी उठा सके ?

शोधकर्ताओं के समक्ष ये कुछ उदाहरणार्थ प्रश्न हैं जो जनसंचार के एक नए मॉडल के संदर्भ में वे स्वयं से पूछ सकते हैं। दरअसल जनसंचारकर्ता और प्राप्तकर्ता के संबंधों को लेकर साधारणीकरण के जिन प्रमुख तत्वों की चर्चा गई है, उनको इस संदर्भ में पूरी तरह स्पष्ट करना आवश्यक है। ऐसा करना एक सार्थक प्रयास और जनसंचार के विश्लेषण एवं व्यावहारिक उपयोग की दृष्टि से बेहतर होगा।

इस प्रकार शोध या जांच का केन्द्र जनसंचार के प्रयुक्त तत्वों से हटकर जनसंचारकर्ता एवं प्राप्तकर्ता के बीच के संबंधों पर केन्द्रित होता है। स्रोत की जनसंचार करने की योग्यता या संदेश में निहित बात का विश्लेषण करने के बजाय एक नया दृष्टिकोण (एप्रोच) एवं नए उपकरण (टूल्स) को विकसित करने की जरूरत है ताकि जनसंचार प्रक्रिया में सम्मिलित समूहों या दलों के बीच जो रिश्ता है उसकी छानबीन कर सकें। उदाहरण के लिए यह जानना उचित होगा कि किस सीमा तक कृषि प्रसार कार्यकर्ता (एग्रीकल्चरल एक्सटेंशन एजेन्ट) परिवार कल्याण कार्यकर्ता (फेमिली प्लानिंग वर्कर) आदि जो विकासात्मक जनसंचार के जिम्मेदार हैं, वे लोगों के साथ कितने सहृदय हैं जिन्हें उत्प्रेरित करना या बदलना या विकास की ओर उन्मुख करना उनका दायित्व है। एक व्यक्ति ने नए व्यवहार को कितना ग्रहण किया या आधुनिकता को समझा, इन बातों को मापने के तौर तरीके तो हमारे पास हैं। लेकिन जनसंचारकर्ता विद्वानों ने क्या कभी ऐसे नए मापदण्ड या तौर तरीकों का इजाद भी किया या अध्ययन के ऐसे उपकरण (टूल्स) तैयार किए जो 'सहृदयता' के प्रश्न पर कोई मानदण्ड स्पष्ट कर सकें।

शोध अध्ययनों एवं व्यावहारिक अनुभव से यह बात महत्वपूर्ण साबित हुई है कि विकास कार्यों में लगे लोगों और उनके लक्षित श्रोता (ओडियन्स) के बीच एक पहचान (आईडेन्टीफिकेशन) का जनसंचार प्रक्रिया में होना अनिवार्य है। साधनों के अभाव के अतिरिक्त भी यह एक तथ्य रहा है कि समाज के सर्वाधिक गरीबों और विकास में लगे लोगों के बीच पहचान की कमी, ऐसे लोगों में कम पहचान जिसको विकास की सर्वाधिक जरूरत हो एक ऐसा मुद्दा रहा है या कारण रहा है जो विकास की सम्पूर्ण प्रक्रिया में एक बड़ी खामी दर्शाता है।

इसलिये ऐसे सवालों के साथ जनसंचार दर्शन के तौर तरीकों की छानबीन या विश्लेषण की कमी दूर की जानी चाहिए। ऐसे सवालों के उत्तर भी ढूंढे जाने चाहिए कि विकास प्रक्रिया से जुड़े लोग क्या आपस में विचारों और अनुभवों को बांटते या 'शेयर' करते हैं? क्या वे जनसंचार की प्रक्रिया की सार्थकता या उसके व्यावहारिक पक्ष के संदर्भ में आनन्द का अनुभव करते हैं या

केवल अपना कर्तव्य समझकर जनसंचार कार्य सम्पन्न मात्र करते हैं? इस प्रकार के सवालों के स्तर पर विकासात्मक जनसंचार का प्रभाव होना या न होना निर्भर करेगा।

विकासात्मक जनसंचार के संदर्भ में साधारणीकरण का बड़ा महत्व है। जैसा कि स्पष्ट है विकास प्रक्रिया में नए विचार विदित होते हैं। नई अवधारणा एवं, नई तकनीकें और पद्धतियां आदि विकास प्रक्रिया के अंग हैं। यह सवाल भी समझना चाहिए कि लक्षित श्रोताओं (टारगेट ऑडियन्स) को वे सब समझाने के लिए विकास कार्यों में लगे लोग सरल या साधारण रूप से समझाते हैं? क्या यह समझाने की भाषा जनसंचार प्राप्तकर्ताओं की अपनी भाषा या उनके अपने बोलचाल और मुहावरों की भाषा होती है? ऐसे प्रश्नों के संदर्भ में अध्ययन के लिए हमें एक पद्धति विकसित करनी होगी।

यह तय है की विकासात्मक जनसंचार एक समान धरातल पर सम्पन्न होने वाली प्रक्रिया हैं। विकास कार्यों में लगे लोगों का ऊँचा होता हैं। इसके बावजूद क्या जनसंचार प्राप्तकर्ता उन्हें सम्मान नहीं देते? कभी ऐसे हो सकता है लेकिन आमतौर से ऐसा नहीं होता। ब्यूरोक्रेसी हमेशा पद और प्रतिष्ठा भोगती चली आई है और इनके व्यवहार का जनसंचार प्रक्रिया पर विपरीत असर पड़ता है।

इस प्रकार जनसंचार की साधारणीकरण की स्वदेशी अवधारणा विकासात्मक जनसंचार के विभिन्न मुद्दों को बेहतर ढंग से समझने में मदद करती है। यह न केवल जनसंचार प्रक्रिया में शामिल विभिन्न तत्वों के आपसी संबंधों पर ही प्रकाश डालती है बल्कि सामाजिक प्रणाली की तस्वीर को भी स्पष्ट: प्रस्तुत करती है। शोध अध्ययनों के लिए सुझाई गई प्रणाली या तरीके विकासात्मक जनसंचार को प्रभावपूर्ण दिशा देने में सहयोगी सिद्ध हो सकती है। विकासशील जनसंचार की साधारणीकरण का तरीका विकास कार्यों में लगे लोगों को बेहतर एवं प्रभावपूर्ण जनसंचारकर्ता (कम्यूनिकेटर्स) की भूमिका निभाने में योग दे सकता है ताकि देश में पूर्ण भागीदारी वाली विकास प्रक्रिया की सार्थकता अनुभव की जा सके।

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## 12.8 निबंधात्मक प्रश्न

1. विकास योजनाओं से आम आदमी को जोड़ने के लिए प्रारम्भ में जनसंचार के महत्व को प्रतिपादित कीजिए।
2. परम्परागत जनसंचार माध्यमों से आप क्या समझते हैं? स्पष्ट कीजिए?
3. विकासात्मक जनसंचार के प्रमुख सिद्धान्तों पर प्रकाश डालिए?
4. 1970 के दशक के बाद विकासात्मक जनसंचार अनुभवों को लेकर नए सिद्धान्तों की तलाश क्यों शुरु की गई? विश्लेषण कीजिए?
5. 'साधारणीकरण' की भारतीय अवधारणा का जनसंचार के संदर्भ में विवेचन कीजिए?
6. साधारणीकरण के दर्शन के मौलिक तत्वों का विवेचन कीजिए?

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## 12.9 कुछ उपयोगी पुस्तकें

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## इकाई 13 शैक्षणिक टेक्नोलॉजी (Education Technology)

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### इकाई की रूपरेखा

- 13.1 उद्देश्य
- 13.2 प्रस्तावना
- 13.3 सिखाने में सहायक साधन
  - 13.3.1 हार्डवेयर एवं सॉफ्टवेयर
  - 13.3.2 बहु उद्देशीय माध्यम केन्द्र (मल्टी मीडिया सेन्टर)
  - 13.3.3 पाठ्य-सामग्री के निर्माण की विधियाँ
- 13.4 रेडियो और टेलीविजन के माध्यमों से शिक्षा
- 13.5 मुक्त शिक्षा एवं दूरस्थ शिक्षा
- 13.6 कम्प्यूटर एवं अन्य आधुनिक प्रोद्योगिकी
- 13.7 केबल एवं सैटेलाइट
- 13.8 शिक्षा में संचार उपग्रह
- 13.9 भारत में शैक्षणिक उपग्रह का उपयोग
- 13.10 शैक्षणिक प्रसारण का भविष्य
- 13.11 भावी प्रवृत्तियाँ
- 13.12 सारांश
- 13.13 निबंधात्मक प्रश्न
- 13.14 कुछ उपयोगी पुस्तकें
- 13.15 ज्ञान दर्शन

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### 13.1 उद्देश्य

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शिक्षा से तात्पर्य है निरन्तर अनुभवों, ज्ञान कुशलता और प्रवृत्तियों को एक पीढ़ी से दूसरी पीढ़ी तक पहुँचाते रहते की प्रक्रिया या इसे कुछ सोचने का पर्याय भी मानते हैं। इस इकाई के अध्ययन के बाद आप यह समझ सकेंगे कि समय के साथ शिक्षा के विस्तार और उसकी गुणवत्ता को बढ़ाने के लिए शिक्षा प्रदान करने की तकनीकों एवं टेक्नोलॉजी में समय-समय पर क्या परिवर्तन आए और वह किस प्रकार बदली।

इस इकाई के अध्ययन के बाद आप यह भी जान सकेंगे कि शिक्षा प्रदान करने के तौर तरीकों, तकनीकों और टेक्नोलॉजी के क्षेत्र में कितने क्रान्तिकारी परिवर्तन आए हैं। नए परिवर्तन शिक्षा को नई दिशा देने में सहायक हुए या नहीं ?

आप यह विश्लेषण भी कर सकेंगे कि समाज में परिवर्तन के साथ शैक्षणिक टेक्नोलॉजी मात्र गुरु और शिष्य के मध्यसंवाद या ज्ञान के प्रकाश से हटकर एक ऐसे समाज की टेक्नोलॉजी बन गई है जहां कक्षा या स्कूल के दायरे और शिक्षा ग्रहण करने के सिद्धान्तों में अनेक मौलिक परिवर्तन हुए हैं। आपको पता लगेगा कि सम्पूर्ण शैक्षणिक प्रक्रिया में अध्यापन

की भूमिका अध्ययनकर्ता (कम्यूनिकेटर) की तरह आज भी महत्वपूर्ण है। लेकिन बोले या मुद्रित शब्दों के द्वारा शिक्षा प्रदान करने की टेक्नोलॉजी के युग की तुलना में शैक्षणिक टेक्नोलॉजी ने एक लम्बी यात्रा तय की है। सूचनापरक जनसंचार क्रान्ति ने शैक्षणिक तकनोलॉजी के क्षेत्र में नए युग को जन्म दिया है।

आप इस बात से परिचित हो सकेंगे कि अध्यापन से विभिन्न तरीकों के (टेक्नोलॉजी अर्थात् सूचना या जनसंचार टेक्नोलॉजी की अवधारणाओं का) उपयोग करना तथा शैक्षणिक तकनीकों के उपलब्ध मामलों में लागत की दृष्टि को ध्यान में रखते हुए प्रभावपूर्ण तरीकों को काम में लेने से हैं। मशीनों या मशीनों वस्तुओं का शैक्षणिक उद्देश्य के लिए उपयोग करना मात्र शैक्षणिक टेक्नोलॉजी नहीं है। इस तथ्य को अच्छी तरह समझ सकेंगे।

आप यह भी विश्लेषण कर सकेंगे कि शैक्षणिक टेक्नोलॉजी शब्दों का प्रयोग एक विस्तृत विचार को प्रगट करता है जिसमें उपलब्ध शैक्षणिक साधनों का विकास, उन्हें प्रयोग में लाना एवं उन प्रणालियों का मूल्यांकन करना जो शैक्षणिक क्षेत्र में दिशा देने के लिए तकनीकों या सहायता (Aid) के रूप में कार्य करती है।

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## 13.2 प्रस्तावना

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20 वीं सदी के प्रारम्भ में शिक्षा प्रदान करने का एक बना बनाया तौर तरीका था। शिक्षा प्रदान करने के भी एक प्रक्रिया थी जिसका लक्ष्य तथ्यात्मक ज्ञान को छात्रों को देना मात्र था। अध्यापक के पास मौखिक रूप से शिक्षा देने के अलावा कोई विशेष दृश्य- श्रव्य या अन्य माध्यम नहीं था। लेकिन समय के साथ छात्र और अध्यापक के रिश्तों का दृष्टिकोण बदला है। अब बच्चों को कच्ची मिट्टी की तरह नहीं माना जाता, जिसे चाहे जिस रूप में अध्यापक ढाल दे। धारणाएं बदली हैं और यह माना जाने लगा है कि हर छात्र की योग्यता और प्रकृतियां भिन्न-भिन्न होती हैं, अतः उसी अनुरूप उन योजनाओं के पूर्ण विकास का उन्हें अवसर मिलना चाहिए। अब शिक्षा कक्षाओं तक बन्द नहीं मानी जाती है। अब एक बने बनाए ढांचे में अनेक लचीले परिवर्तन आए हैं। अध्यापन एक योजनाबद्ध ऐसे कार्य बन गया जिसका समाज की जरूरतों के अनुसार मूल्यांकन किया जाता है।

दरअसल, गत सदी में विशेषरूप से दार्शनिक, मनोवैज्ञानिक, सामाजिक, टेक्नोलॉजीकल एवं शैक्षणिक क्षेत्र निरन्तर एक लम्बी परिवर्तन प्रक्रिया के दौर से गुजरा है। शैक्षणिक प्रक्रिया का केन्द्रीय बिन्दु अध्यापक की बजाय छात्र हो गया है। शैक्षणिक दर्शन और मनोविज्ञान को वैज्ञानिक रूप में लिया जाने लगा है और शिक्षा प्रदान करना इस प्रक्रिया में एक कला मानी जाती है। अब अध्यापन के लिए मात्र बोला गया था मुद्रित शब्द ही महत्वपूर्ण नहीं है बल्कि उसको एक दूसरे से जुड़े कई शैक्षणिक उपकरणों और साधनों का ज्ञान और उनके प्रभाव की जानकारी भी जरूरी है ताकि छात्रों की जिज्ञासाओं की वह पूर्ति कर सकें। शिक्षा प्रदान करने का लक्ष्य केवल जीवन को आलोकित करना न रहकर शिष्य के जीवन को समयानुरूप एक सार्थक और सशक्त बनाने के लिए शिक्षक के शैक्षणिक पद्धति के साथ शैक्षणिक टेक्नोलॉजी को समन्वित करना आवश्यकता बन गई। अध्यापन के विभिन्न नमूनों या मॉडल्स को व्यावहारिक

रूप देने की दिशा में भी पर्याप्त टेक्नोलॉजी को काम में लाना जरूरी हो गया। अध्यापन के माध्यम में अध्यापक की जानकारी इस प्रकार एक अनिवार्यता बन गई है।

21 वीं सदी जो अपने साथ सूचना प्रौद्योगिकी या जनसंचार की क्रान्ति लेकर आई है। बढ़ती आबादी और बदलते सामाजिक परिवेश की शैक्षणिक जरूरतों ने यह जरूरी बना दिया है कि शिक्षा में टेक्नोलॉजी जुड़कर नई शैक्षणिक समस्याओं का समाधान करें। समय के साथ शिक्षा प्रदान करने के तरीके एवं तौर तरीकों में परिवर्तन आता है। परम्परागत धारणाएं समाप्त हुई हैं। पढ़ने के मौलिक सिद्धान्त भी बदले हैं। पाठ्यक्रमों की संरचना अनेकों बार समय की मांग के अनुभव से बदली है। शिक्षा प्रदान करने की तकनीक के रूप में कभी सुकरात का प्रश्न और उत्तर देने की प्रक्रिया के द्वारा शैक्षणिक सत्य को उद्घाटित किया जाता था। इसके बाद कई पद्धतियां बदलती रही।

शिक्षा का उद्देश्य चाहे जो हो, मौलिक बात है विगत अनुभव पर आधारित ज्ञान ग्रहण करना या चीजों को सीखना। इस सीखने की प्रक्रिया के लिए कोई न कोई पद्धति या व्यूह रचना करनी पड़ेगी। अनुभव एवं शोध ने यह तथ्य सामने रखा है कि हम 1.5 प्रतिशत स्पर्श से, 1.0 प्रतिशत स्वाद से, 3.5 प्रतिशत सुंघकर, 11.0 प्रतिशत सुनकर एवं 83 प्रतिशत देखकर, चीजों को सीखते हैं। इस तथ्य को ध्यान में रखते हुए दृश्यात्मक प्रभाव या दृश्य प्रौद्योगिकी को शिक्षा से जोड़ने का अधिक प्रयत्न किया गया। इसलिए साक्षरता या सीखने के लिए दृश्यात्मक शैक्षणिक उपकरणों (बिजुअल लिटरेसी टूल्स) पर सदैव अधिक ध्यान दिया गया।

किसी भी बात को सीखने के लिए यह जरूरी है कि उसमें सरसता हो और व्यक्ति की पांचों इन्द्रियां (सेन्सेज) की इस प्रक्रिया में भागीदारी हो। इसलिए शिक्षा प्रदान करने के लिए प्रौद्योगिकी के संदर्भ में सभी इन्द्रियों को महत्व दिया गया और प्रौद्योगिकी शब्द का उपयोग करने के बजाय लम्बे समय तक शिक्षा की प्रक्रिया में सहायक चीजों को शैक्षणिक सहायक (लर्निंग एड्स) के नाम से संबोधित किया गया। इसके पीछे यह मनोविज्ञान भी रहा कि "मैं सुनता हूँ, भूल जाता हूँ। मैं देखता हूँ याद रहता है और जब कोई कार्य मैं करता हूँ, मैं उसे समझ जाता हूँ।"

### 13.3 सीखने के सहायक साधन

शिक्षा प्रदान करने की प्रक्रिया में विभिन्न माध्यम और पद्धतियां उपलब्ध हैं। किसी माध्यम और पद्धति की सीखने की प्रक्रिया में अधिक उपयुक्तता और प्रभाव हो सकता है, यह तय करने के बाद कोई तकनीक या टेक्नोलॉजी काम में ली जाती है और विशेष शैक्षणिक कार्य के लिए जरूरी और उपयुक्तता के साथ उपलब्धता भी देखना आवश्यक है। शैक्षणिक उद्देश्य को मध्य नजर रखते हुए उपयुक्त टेक्नोलॉजी का चयन करना पड़ता है। शैक्षणिक प्रक्रिया की सार्थकता इस बात पर निर्भर करती है कि प्रौद्योगिकी का कौन-सा उपयुक्त माध्यम अपनाया गया है।

पढ़ने में सहायक तत्वों की विवेचना करें तो प्रभाव को बढ़ाने की दृष्टि से निम्नलिखित बातें सामने आती हैं -

- (अ) 1. मौखिक (शब्दों का प्रयोग) सबसे कम प्रभावपूर्ण तरीका माना गया है।

2. इसी के साथ श्यामपट्ट एवं चाक का उपयोग।
3. कहीं-कहीं रंग- रंग की चाक काम में ली जाती है।

इसके अलावा प्रदर्शित किए गए :

4. चार्ट
5. डिस्पले बोर्ड
6. मॉडल/वर्किंग भी हो सकते हैं।

प्रोजेक्टेड लर्निंग एड्स अर्थात् बढ़ाकर थोड़े प्रभाव के साथ प्रस्तुत पढ़ाने में सहायक वस्तुओं में-

- (ब) 7. श्वेत-श्याम स्लाइड प्रोजेक्ट
8. रंगीन प्रोजेक्ट
9. फिल्म-स्ट्रीप प्रोजेक्शन
10. ऑवरहेड प्रोजेक्टर
11. मोशन पिक्चर - श्वेत/श्याम
12. मोशन पिक्चर- ध्वनि के साथ रंगीन
13. कैसेट (रंगीन फिल्म)
- (स) 14. सी.सी.टी.वी. प्रशनात्मक टी.वी
15. प्रयोग
16. परियोजनाएं/भ्रमण

इस प्रकार प्रभाव डालने की दृष्टि से अ,ब,स ये तीन श्रेणियां हो सकती हैं। शैक्षणिक प्रक्रिया में छात्रों के सीखने की प्रवृत्ति को अधिक प्रभावी बनाने के लिए परम्परागत रूप से यह शैक्षणिक तौर तरीका काम में लिया जाता रहा है। कोई भी इनमें ऐसा सहायक नहीं माना गया जिसमें शैक्षणिक प्रक्रिया को सम्पूर्णता देने के सभी लाभ हैं।

इन्द्रियगत अनुभव (Sensory Experience) बौद्धिक गतिविधि का आधार है। सदियों तक ज्ञान प्रदान करने का आम तरीका मुद्रित या मौखिक शब्द रहे। लेकिन भाषा की अपनी सीमाएं होती हैं। यह शैक्षणिक-प्रक्रिया में बाधा डालती है। अमूर्त बातों को भी मूर्त रूप में सरलता से प्रस्तुत करने के अध्यापक के पास आज अनेक साधन हैं। जनसंचार या सूचना प्रौद्योगिकी में आए क्रान्तिकारी परिवर्तनों ने तो मानवीय अनुभव के विस्तार और शैक्षणिक प्रक्रिया को अत्यन्त प्रभावी एवं महत्वपूर्ण आयाम देने की भूमिका का निर्वाह किया है। विद्यार्थियों को विस्तार में फैले विविध पर्यावरण के सम्पर्क में लाने और सारी दुनिया को एक कक्षा बनाने में संचार प्रौद्योगिकी ने अत्यन्त उपयोगी एवं महत्वपूर्ण अध्याय की शुरुआत की है।

### 13.3.1 हार्डवेयर एवं सॉफ्टवेयर

किसी समय सांस्कृतिक विरासत, संग्रहित मूल्यों, ज्ञान और कुशलता की एक पीढ़ी से दूसरी पीढ़ी को हस्तांतरित करने की प्रक्रिया को शिक्षा देना माना जाता था। यह रोजी-रोटी कमाने या व्यवसाय से जुड़ी नहीं थी। यद्यपि मौलिक अवधारणाएं आज भी शाश्वत हैं। लेकिन अर्थ में विस्तार का कुछ भिन्नता तथा शब्दों के प्रयोग निरन्तर बदलते रहते हैं। जैसे शैक्षणिक

सहायक वस्तुओं (Teaching aids) को नॉन-प्रोजेक्टड दो वर्गों में विभाजित किया गया है, अब इसके स्थान पर शैक्षणिक टेक्नोलॉजी के शब्द का प्रयोग होता है जिसे हार्डवेयर एवं सॉफ्टवेयर- इन दो वर्गों में बांटा गया है। इनेक्ट्रोमैकेनिक उपकरणों जैसे इन्जीनियरिंग सिद्धान्तों पर आधारित शैक्षणिक उद्देश्य की पूर्ति के लिए तैयार किए गए मोशन पिक्चर प्रोजेक्टर, टेपरिकार्डर, टेलीविजन, कम्प्यूटर आदि को शैक्षणिक हार्डवेयर के वर्ग में रखा गया है। यह तरीका (एप्रोच) वैज्ञानिक एवं प्रौद्योगिकी के 20 वीं सदी में विकास का परिणाम है। हार्डवेयर एप्रोच या तरीका शैक्षणिक प्रक्रिया को मशीनीकरण में ढालता है ताकि उससे शिक्षकगण बहुत अधिक संख्या और दूरी तक के छात्र-छात्राओं तक अपनी बात पहुँचा सके और इसमें लागत भी कम आए।

सॉफ्टवेयर एप्रोच या तरीका मनोविज्ञान के सिद्धान्तों पर आधारित है जो विद्यार्थी के ज्ञान बढ़ाने या उसकी प्रकृतियों को बदलने के दृष्टिकोण को लेकर तैयार किया जाता है। यह टेक्नोलॉजी को कार्यक्रम तैयार करती है, वे कार्यक्रम 'सॉफ्टवेयर' कहलाते हैं। यह एक प्रकार की सीखने की व्यूह रचना है। जो किताबों, पत्रिकाओं, शैक्षणिक श्वेतों आदि की रचना करती है। शैक्षणिक क्षेत्र में इस प्रकार अब कई माध्यम एवं शैक्षणिक साधनों का विकास हुआ है जिसे बहुदेशीय 'मल्टी मीडिया' कह सकते हैं और इनका उपयोग छात्र एवं अध्यापक अपने-अपने ढंग से सिखाने की विविध सामग्री एवं तकनीकों के साथ दोनों काम में लेते हैं। इस प्रकार सम्पूर्ण शैक्षणिक अनुभव का दायरा बढ़ा है और उसे सीखने का तरीका भी।

### 13.3.2 बहु उद्देशीय माध्यम केन्द्र (मल्टी मीडिया सेन्टर)

शैक्षणिक क्षेत्र में प्रौद्योगिकी ने अनेक परिवर्तन किए हैं। जैसा कि बताया जा चुका है कि शैक्षणिक माध्यम बहु उद्देशीय अर्थात् कई उद्देश्यों की पूर्ति के लिए कई हो गए हैं। इसलिए शैक्षणिक व्यवस्था में बहु उद्देशीय केन्द्र (मल्टी मीडिया सेन्टर) तैयार किए जाते हैं जो एक विद्यालय प्रणाली की तरह अपनी सेवाएं देते हैं और शैक्षणिक कार्य के लिए आवश्यक समस्त टेक्नोलॉजी के उपकरण वहां लगाए जाते हैं। इसे शैक्षणिक-स्रोत केन्द्र भी कह सकते हैं। इस प्रकार के केन्द्रों पर दृश्य-श्रव्य शैक्षणिक सामग्री एवं सामग्री तैयार करने की व्यवस्था होती है।

शैक्षणिक तकनोलॉजी या शैक्षणिक प्रौद्योगिकी पाठ्यक्रम के स्तर पर शैक्षणिक माध्यमों की एक लम्बी श्रृंखला प्रस्तुत करता है। शैक्षणिक-प्रक्रिया इतनी जटिल हो गई है कि सम्पूर्ण ध्यान कक्षा में पाठ्यक्रम की योजना से हटकर सम्पूर्ण ध्यान प्रौद्योगिकी केन्द्र पर टिका हुआ है। शैक्षणिक लक्ष्यों की प्राप्ति का दायरा बढ़ने से शैक्षणिक पाठ्यक्रम और कार्यक्रमों में वृद्धि हुई है। सम्पूर्ण-शैक्षणिक प्रणाली में आबादी की भारी वृद्धि के साथ शिक्षकों एवं शिक्षा प्राप्त करने वालों की संख्या में भी अत्यधिक वृद्धि हुई है। इस प्रकार कुल सामग्री की शिक्षा देने की तादाद और विभिन्न प्रौद्योगिकी साधनों की संख्या में भारी बढ़ोतरी अंकित की गई है। ऐसे संचालन की इन्जीनियरिंग विज्ञान अवधारणा से लेकर पाठ्यक्रम आदि विभिन्न क्षेत्रों में उचित प्रणाली तैयार करने की आवश्यकता हो गई है। इसके लिए किसी विशेष पद्धति और विचारों का सम्पूर्ण विश्लेषण करके इन सब विभिन्न अंगों के बीच एक समन्वय स्थापित करना या एक

प्रणाली का प्रारूप (सिस्टम डिजाइन) आवश्यक है। मानवीय पक्ष के साथ अब हार्डवेयर या सॉफ्टवेयर या प्रौद्योगिकी का समुचित समन्वय करना अनिवार्य है।

### 13.3.3 पाठ्य-सामग्री के निमाण की विधियाँ

ज्ञान के क्षेत्र में जिस तेज गति से ज्ञान का प्रसार या विस्फोट हुआ है, वहां अध्यापक के लिए उपलब्ध सभी स्रोतों का इस्तेमाल करके विद्यार्थियों तक ज्ञान पहुँचाना जरूरी हो गया। इस युग में सामग्री को पुनः तैयार करने या ज्यादा संख्या में तैयार करने (Reproduction) प्रक्रियाओं में भी भारी वृद्धि हुई है। इससे सूचना के प्रसार में बढोत्तरी करना संभव, हुआ है। टाईपराईटर, कार्बन पेपर, चाक और श्याम पट्ट के युग से जमाना बहुत आगे बढ़ा है। एक प्रति की कई प्रतियाँ बनाने की प्रौद्योगिकी को 'रिप्रोग्राफी' कहते हैं जो प्रौद्योगिकी का ही अंग है। एक प्रति की एक साथ किसी प्रतियां कितनी विधि से करनी है- यह टेक्नोलॉजी आगे बढ़ी है। इनमें ब्लू प्रिन्ट, डुप्लीकेटर, स्टेसिलेक्टर, रिप्लेक्ट प्रिन्टिंग फोटोग्राफी, प्रिन्टिंग मशीनें, हेन्ड आऊट आदि अनेक साधन प्रौद्योगिकी ने इजाद कर दिए हैं।

शैक्षणिक तकनीकों में परम्परागत प्रतीकों युक्त ग्राफिक अर्थात् ग्राफस्, डाईग्रामस पोस्टर्स, नक्शे, कार्टून, छायाचित्र, चार्ट, ग्लोब, प्रदर्शित बोर्ड या डिस्पले बोर्ड या विभिन्न प्रकार के बोर्ड मॉडल्स आदि के उपयोग को जैसा है वैसे रूप में माने। 'नॉन प्रोजेक्टेड' शैक्षणिक तकनीकी प्रक्रिया का अंग माना गया है और बढ़ाकर या चलाकर काम में लेने वाली शैक्षणिक तकनीकों को 'प्रोजेक्टेड एड्स' की श्रेणी में रखा गया है जिनमें स्लाइड्स, फिल्मस्ट्रिप्स; आदि का प्रोजेक्टर के द्वारा प्रदर्शन ऑवरहेड प्रोजेक्टर पर ट्रांसपरेन्सीज का प्रदर्शन फिल्म प्रदर्शन आदि विभिन्न प्रकार की तकनीकें काम में ली जाती रही है।

इसके अलावा शैक्षणिक प्रक्रिया में सीधा चीजों से साक्षात्कार करने उनके बारे में जानकारी प्राप्त करने के लिए विभिन्न स्थानों का छात्रों को भ्रमण कराना, सामुदायिक जीवन का सीधा अध्ययन कराना, विभिन्न प्रकार की प्रदर्शनियों का अवलोकन कराना, संग्रहालयों का भ्रमण कराना, छात्र-छात्राओं को प्रदर्शन (डमोन्स्ट्रेशन) के द्वारा चीजों को स्पष्ट करना आदि अनेक परम्परागत शैक्षणिक तकनीकें रही हैं।

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### 13.4 रेडियो और टेलीविजन के माध्यम से शिक्षा

शैक्षणिक टेक्नोलॉजी के परम्परागत विभिन्न स्थानों की दुनिया में जनसंचार क्रान्ति, रेडियो, टीवी., कम्प्यूटर, केबल टी.वी. आदि विभिन्न प्रौद्योगिकीय क्रान्तिकारी परिवर्तनों ने एक नए और अत्यन्त क्रान्तिकारी अध्याय की शुरुआत की।

साक्षरता की भारी कमी, अनेक गलत धारणाओं, विभिन्न और कठिन भौगोलिक परिस्थितियों से घिरे भारतीय परिवेश में रेडियो को ट्रांजिस्टर के आगमन ने जनसंचार एवं जनशिक्षा का एक अत्यधिक सशक्त माध्यम शैक्षणिक प्रौद्योगिकी को सौंपा। भारत में रेडियो की पहुँच की भारी सम्भावनाओं एवं ध्वनि माध्यम होने के कारण इसका शैक्षणिक क्षेत्र में उपयोग करने की सम्भावनाओं को समझकर इसका शिक्षा एवं सामाजिक-आर्थिक विकास में भरपूर उपयोग करने के लिए प्रयोग भी किए गए एवं शोध के बाद शान और शिक्षा के प्रसार में

रेडियो एक सशक्त माध्यम साबित हुआ। अनेक प्रकार के प्रारम्भिक, माध्यमिक उच्च विद्यालयों एवं उच्च शिक्षा के छात्र-छात्राओं के लिए कार्यक्रम तैयार किए गए। टेपरिकार्डर एवं कैसेट्स तैयार करके शिक्षा के प्रसार में महत्वपूर्ण प्रयत्न किए गए। ध्वनि प्रणाली एवं माइक्रोफोन का भी इस्तेमाल किया गया है।

यद्यपि दृश्य एवं श्रव्य के रूप में टेलीविजन का प्रारम्भ और प्रसार भारत में देरी से शुरू हुआ लेकिन सैटेलाइट इन्स्ट्रक्शनल टेलीविजन एक्सपेरिमेंट (Site) माध्यम के रूप में अत्यन्त प्रभावी एवं उपयोगी साधन सिद्ध हुआ। वीडियो कैसेट रिकॉर्डर्स का भी उपयोग होने लगा। टेलीविजन ने विशाल संसार के ज्ञान और यथार्थ को घर-घर तक पहुँचा दिया।

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### 13.5 मुक्त शिक्षा एवं दूरस्थ शिक्षा

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जो लोग विद्यालयों या विश्वविद्यालयों में शिक्षा ग्रहण नहीं कर पाते, उनके लिए पत्राचार पाठ्यक्रम तैयार हुए लेकिन आधुनिक प्रौद्योगिकी ने मुक्त शिक्षा प्रणाली और दूरस्थ शिक्षा के विकास के लिए एक नया द्वार खोला। यह माना जाने लगा कि रेडियो, टेलीविजन आदि अनेक जनसंचार के माध्यम उन छात्र-छात्राओं को जो स्कूल या कॉलेजों तक नहीं जा सके या जिनकी और अधिक शिक्षा ग्रहण करने की इच्छा है। ऐसे लोगों के द्वार पर शिक्षा को ले जाया जाए और शिक्षा का जनतान्त्रिकरण किया जाए। यह दिशा सोच तो भारत की आजादी के बाद ही शुरू हो गया था। प्रौढ़ शिक्षा, पत्राचार आदि अनेक शैक्षणिक कार्यक्रम चलाए गए।

शिक्षा के क्षेत्र में आबादी बढ़ने के साथ ही शैक्षणिक ढांचा भी उन नए और बढ़ते शिक्षा ग्रहण करने के इच्छुक लोगों की संख्या भी सामने आई। संसाधनों का सीमित होना भी एक प्रश्न था। ऐसे में परम्परागत सोच में एक बड़ा बदलाव आया। शैक्षणिक टेक्नोलॉजी और जनसंचार के साधनों की विपुल क्षमता और दूरी को सिमटा देने की क्षमता भी देखी गई और मुक्त या दूरस्थ शिक्षा के विचार ने जोर पकड़। उच्च शिक्षा प्रदान करने के लिए इन्दिरा गांधी राष्ट्रीय मुक्त विश्वविद्यालय नई दिल्ली की अवधारणा ने देश-विदेश में महत्वपूर्ण स्थान पाया और इस अवधारणा को लेकर कई सफल प्रयोग किए गए।

खुली शिक्षा की अवधारणा उतनी व्यापक एवं लचीली है कि उन करोड़ों लोगों को जिस शिक्षा और कुशलता से वंचित रहना पड़ा, वे अपना काम करते हुए भी आगे शिक्षा ग्रहण कर सकते हैं। रेडियो या टी.वी. कान्फ्रेन्सिंग आदि के अलावा यू.जी.सी., इंदिरा गांधी मुक्त विश्वविद्यालय, दिल्ली, कोटा खुला विश्वविद्यालय, कोटा आदि अनेक संस्थाओं ने राष्ट्रव्यापी शैक्षणिक कार्यक्रमों का नियमित प्रसार शुरू करने, अध्ययन केन्द्र खोलने आदि के द्वारा शिक्षा प्रसार को व्यापक बनाने के कार्य आरम्भ कर दिए।

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### 13.6 कम्प्यूटर एवं अन्य आधुनिक प्रौद्योगिकी

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इस प्रकार समय के साथ पढ़ने में सहायक प्रौद्योगिकी के विकास की दिशा का विस्तार होता चला गया और रेडियो, ट्राजिस्टर, टेलीविजन, कम्प्यूटर, इन्टरनेट, केबल टी.वी. आदि अनेक संचार माध्यमों ने जहां दुनिया में अनेक क्रान्तिकारी जनसंचार परिवर्तन शुरू किए वहां



शैक्षणिक प्रौद्योगिकी की सम्पूर्ण अवधारणा में भी क्रान्तिकारी परिवर्तनों के साथ शिक्षा का विस्तार करने एवं इसे एक व्यापक परिवेश देने का काम किया।

शिक्षा के क्षेत्र में उच्च एवं आधुनिकतम प्रौद्योगिकी के सन्दर्भ में आमतौर से माइक्रो-कम्प्यूटरर्स एवं वीडियो डिस्क की बात की जाती है। लेकिन इस प्रकार की अधिक लागत वाली प्रौद्योगिकी की जब हम बात करते हैं तो कम-लागत की प्रौद्योगिकी के सवाल पर हमारा ध्यान कम जाता है। ध्वनि अर्थात् ओडियो-रिकार्डिंग शिक्षा के क्षेत्र में एक लम्बा सफर तय कर चुकी है। ओडियो-कैसेट तैयार करना और उनका उपयोग करना शैक्षणिक प्रसारण (एज्यूकेशनल ब्राडकास्टिंग) स्कूलों के लिए या प्रौढ़ शिक्षा के लिए कोई नई बात नहीं रही। 1983 में बी.बी.सी. ने दोपहर से रात तक सैकेण्ड्री स्कूल रेडियो ब्राडकास्टिंग का प्रसारण शुरू किया। उस समय वहां लगभग 25 प्रतिशत सैकेण्डरी स्कूलों के पास इलेक्ट्रॉनिक टाइम स्वीचिंग और संबंधित विभाग को रात्रि प्रसारण पर अधिक वहीं कार्य करना पड़ता था। नार्वे और स्वीडन में अपने अध्यापक केन्द्रों का ऑडियो-वीडियो ईकार्डियों की स्थापना की है। पूर्णकालिक टेक्नीशियन पूरे समय टी.वी. कार्यक्रम तैयार करते हैं। वैसे सारे कार्यक्रमों को प्रसारित करना भी जरूरी नहीं माना जाता क्योंकि वैसे सारे कार्यक्रमों को प्रसारित करना भी जरूरी नहीं माना जाता क्योंकि कार्यक्रम कम लागत पर स्थानीय केन्द्रों को डाक से भेजे जाते थे। टेक्स्ट अर्थात् पाठ्यक्रम भी कैसेट में ध्वनि एवं दृश्य दोनों का उपयोग किया जाता रहा है।

ऐसे प्रयोग भी किए गए जहां मुक्त विश्वविद्यालयों ने ओडियो-कैसेट में पाठ्यक्रम का उपयोगी कम्पोनेन्ट या पुर्जा माना है। कैसेट का वितरण भी बड़े पैमाने पर सस्ता करना सम्भव माना गया। 1967 में विस्तार से ओडियो कैसेट का उपयोग किया गया। इसे कम्प्यूटर की सहायता से शिक्षा प्रदान करने की तुलना में सस्ता माना गया। लन्दन में केबल सेवा के द्वारा शैक्षणिक वीडियो कैसेट प्रसारण की लागत अधिक होने के कारण इनका वितरण शुरू किया गया। वीडियो कैसेट द्वारा शैक्षणिक कार्यक्रम अधिक प्रभावी होते हुए भी अधिकांश छात्रों की वीडियो रिकार्डर तक पहुँच वहां कठिन समस्या रही। इस प्रकार शैक्षणिक प्रौद्योगिकी वीडियो कैसेट का उपयोग कम्प्यूटर से जोड़कर (लिंक) करके भी किया गया। वीडियो डिस्क भी उपयोग में किए गए। यह भी अनुभव किया गया कि कम्प्यूटर की सहायता से शिक्षा का माध्यम टेलीविजन के माध्यम से शिक्षा प्रदान करने से भी महंगा माना गया।

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### 13.7 केबल एवं सैटेलाइट

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केबल और सैटेलाइट के आगमन से यह प्रयोग आरम्भ हुए कि इंग्लैण्ड में मुक्त शिक्षा की दिशा में इनका कहां तक प्रभावी उपयोग संभव है। मुक्त विश्वविद्यालयों के लिए केबल विकास के प्रभाव की दिशा में एक अध्ययन से यह ज्ञात हुआ कि ट्रांसमीशन समय बेहतर हो सकता है और शैक्षणिक टेलीविजन के लिए अधिक समय उपलब्ध हो सकता है। चैनल्स पूर्णतया शैक्षणिक उद्देश्यों की पूर्ति के लिए हो सकते हैं। छात्रों की भागीदारी कार्यक्रमों में अधिक हो सकती है। अध्यापकों के लिए टेलीविजन पर उपलब्ध होना आसान होने के साथ-साथ शैक्षणिक कार्यक्रमों के चयन की अधिक सुविधा मिल सकती है। वहां इस उद्देश्य की पूर्ति के लिए स्वतन्त्र और स्थानीय प्रणाली विकसित करने के प्रस्ताव भी सामने आए। इस बात की

सम्भावनाओं की तलाश की गई कि केबल टी.वी. या टी.वी. आदि आधुनिकतम संस्थानों और प्रौद्योगिकी का शैक्षणिक प्रौद्योगिकी के रूप में उपयोग करना कहां तक संभव है।

टेलीटेक्स्ट एवं व्यूहडेटा जैसी प्रौद्योगिकी की सम्भावनाओं की भी तलाशा गया है। टेलीटेक्स्ट में ध्वनि को दृश्य के साथ समन्वित करने की समस्या है। लेकिन शिक्षा के प्रसार में कम लागत में शिक्षा प्रदान करने की दिशा में उच्च प्रौद्योगिकी का अधिक इस्तेमाल अभी सम्भव नहीं लगता। कम्प्यूटर की सहायता से शैक्षणिक कार्यक्रम तैयार करना और उन्हें विस्तार से उपयोग में लेने से कई तकनीकी कठिनाईयां हैं। मुक्त शिक्षा प्रणाली के सन्दर्भ में माइक्रो कम्प्यूटर पर कार्यक्रम पैकेज तैयार करने आदि के प्रयोग भी किए गए। यद्यपि अनेक उस तकनीकी के उपकरण शिक्षा के अत्यधिक प्रसार में अभी पूरी तरह उपयोगी नहीं लग रहे हैं लेकिन उच्च प्रौद्योगिकी ने शैक्षणिक प्रौद्योगिकी को नए आयाम और नए विस्तार दिए हैं। 1980 के दशक में इंग्लैण्ड में माइक्रो कम्प्यूटर आधारित दृश्य श्रव्य शैक्षणिक प्रणाली के उपयोग के कई प्रयोग किए गए। छात्रों की जरूरतों में बदलाव, उनकी आधुनिक जीवन शैली और अभिरुचियों के साथ विविध पाठ्यक्रमों को आधुनिक प्रौद्योगिकी में ढालने के लिए शोध और स्रोत भी चाहिए। साथ ही शैक्षणिक माध्यमों एवं प्रौद्योगिकी के क्षेत्र में अत्यधिक शोध और क्रियान्वयन के लिए रास्ते ढूंढने और समय की जरूरतों के अनुरूप आधुनिकतम प्रौद्योगिकी का उचित उपयोग करने की शोध की भी जरूरत है।

आधुनिकतम संचार माध्यमों एवं अनेक प्रौद्योगिकीय साधनों, जिनमें अधिकतम लोगों तक पहुँच की भारी सम्भावनाएं हैं और वे शैक्षणिक प्रौद्योगिकी की परम्परागत तर्ज और तौर तरीकों की दिशा में नई चुनौतियां एवं नए आयाम प्रस्तुत करते हैं। एक तरह से क्रान्तिकारी इस दौर में शिक्षा और प्रौद्योगिकी के आपसी समन्वय की अनेक चुनौतियां हमारे समक्ष हैं और समय के साथ चीजें बदलने की प्रक्रिया में हैं। कौन से संसाधन कहां कितने उपयोगी और उचित हो सकते हैं, यह प्रक्रिया अभी जारी है।

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### 13.8 शिक्षा में संचार उपग्रह

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अमेरिका एवं अन्य कई देशों में शिक्षा में संचार उपग्रह के उपयोग (Use of Communication Satellite in education) चल रहे हैं। इन अध्ययनों के द्वारा इस बात का पता लगाने का प्रयत्न किया जा रहा है कि उपग्रह या सैटेलाइट की शैक्षणिक रेडियो, टी.वी., डिजीटल डेटा दूरदराज के दुर्गम क्षेत्रों तक पहुँचाए और विभिन्न लोगों एवं संस्थाओं के अनुभवों एवं स्रोतों के उपयोग की क्षमता का कहां तक उपयोग सम्भव है। अमेरिका में नासा द्वारा विकसित उपग्रहों की शैक्षणिक संचार में उपयोगिता की सम्भावनाओं का अध्ययन भी किया जा रहा है। इस दिशा में 1975 से प्रयोग जारी है। यूनेस्को ने भी क्षेत्रीय स्तर पर इस प्रकार के प्रयत्नों को बढ़ावा दिया।

उपग्रह के उपयोग का विकास इस बात पर अधिक निर्भर है कि शैक्षणिक आवश्यकताओं की पूर्ति की दिशा में यह जनसंचार इसके माध्यम से कहां तक जरूरतों की पूर्ति करता है। साथ ही इसके उपयोग की लागत भी यह तय करेगी कि इसका भविष्य में कितना उपयोग सम्भव है। यह देखने के भी प्रयास किए गए कि उपग्रह द्वारा कम लागत पर शैक्षणिक

सेवाएं कम्प्यूटर की मदद से शिक्षा, रेडियो, टेलीविजन का भारी संख्या में लोगों एवं संस्थाएं तक शिक्षा में प्रसार की इसमें कितनी सम्भावनाएं छिपी हैं। उपग्रह प्रौद्योगिकी का शिक्षा में उपयोग करने के लिए विभिन्न देशों एवं क्षेत्रों की जरूरतों के अनुसार उचित संगठनात्मक ढांचे तैयार करने पर भी अध्ययन किया गया।

उपग्रह प्रौद्योगिकी दिशा में 1945 से प्रारम्भ से इस सन्दर्भ में प्रयत्न शुरू हुए जो दो तीन दशक में अमेरिका और कनाडा में काफी उन्नत स्थिति में पहुँच गए। अमेरिका में शिक्षा के प्रसार के लिए गैर परम्परागत तरीकों के उपयोग पर अनेकों लोगों द्वारा बल दिए जाने से वहाँ उपग्रह के उपयोग के बेहतर अवसर पैदा होने की संभावनाएं बनीं। भारत में शैक्षणिक ढांचा बेहतर बनाने, आर्थिक और सामाजिक विकास के साथ ग्रामीण विकास पर विशेष जोर दिए जाने के संदर्भ में भी जनसंचार की आर्थिक दृष्टि से उचित जनसंचार कुशलताओं के विकल्प ढूँढे जा रहे थे। अमेरिका जैसे देशों में तो दूर संचार एवं शैक्षणिक जनसंचार की दिशा में काफी पूंजी नियोजन किया। लेकिन इस प्रकार जनसंचार प्रौद्योगिकी में उपग्रह के उपयोग को विकसित करने के लिए अनेक देशों के सामने आर्थिक प्रश्न थे।

भारत जैसे विकासशील देशों में भी प्रसारण के द्वारा विस्तारपूर्ण क्षेत्र तक पहुँच बढ़ाने और उपग्रह का इस्तेमाल करके इससे मिल सकने वाले लाभ प्राप्त करने की सभी इच्छाएं उत्पन्न हुईं। ब्राजिल जैसे कई देशों ने इस ओर प्रयत्न किए। उपग्रह की शैक्षणिक जनसंचार माध्यमों एवं सेवाओं का विस्तार करने में महत्वपूर्ण भूमिका एवं सम्भावनाओं की तलाश की गई। जैसे इन्स्ट्रक्शनल टी.वी. सेवा के द्वारा विद्यालयों या अध्ययन केन्द्रों तक शैक्षणिक सामग्री पहुँचाना, कम्प्यूटर की सहायता से शिक्षा के संदर्भ में दूर दराज की संस्थाओं तक पहुँचाना, दूर दराज की संस्थाओं को 'इन्टर-एक्टिव' कम्प्यूटिंग सेवा पहुँचाना, कम्प्यूटर इन्टरकनेक्शन, सूचनाओं स्रोतों को आपस में बांटना, टेलीक्रोन्फेरेंसिंग आदि की सेवा प्रदान करना।

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### 13.9 भारत में शैक्षणिक उपग्रह का प्रयोग

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उपग्रह का जनसंचार के क्षेत्र में उपयोग करने के लिए दो साल के अध्ययन के बाद भारत में 1969 में उपग्रह का जनसंचार, शिक्षा, संचार के क्षेत्र में बड़े पैमाने पर भारत में प्रयोग शुरू करने पर विचार किया और नासा के सहयोग से भारतीय स्पेश आर्गनाइजेशन ने 1975-1976 में यह प्रयोग शुरू किया।

इस प्रयोग का प्रारम्भिक लक्ष्य उन्नत कृषि अभ्यास, राष्ट्रीय एकता आदि को ग्रामीण क्षेत्र में बढ़ावा देना था। इसमें कुछ ऐसे कार्यक्रम भी थे जिनका सम्बन्ध अध्यापकों को प्रशिक्षण देना एवं स्कूल शिक्षा के लिए तैयार करना था। अमेरिका में शैक्षणिक जनसंचार में उपग्रह के उपयोग पर प्रयोगों का इतिहास 1970 से प्रारम्भ था। भारत ने अमेरिका के नासा की उपग्रह प्रौद्योगिकी का उपयोग करते हुए जनसंचार के माध्यम से उपग्रह द्वारा शैक्षणिक प्रयोग जिन-जिन ग्रामीण क्षेत्रों के लिए किया गया, वह सफल रहा।

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### 13.10 शैक्षणिक प्रसारण का भविष्य

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प्रसारण के विविध उपयोगों पर दृष्टि डालें तो ज्ञात होगा कि यह शैक्षणिक प्रसारण का एक अनुपम रूप है। कई देशों में प्रसारण प्रौद्योगिकी की शैक्षणिक सम्भावनाओं का भरपूर उपयोग किया है। लेकिन जनसंचार के किसी भी माध्यम का उपयोग करते समय इस अन्तर को समझना जरूरी है कि हर माध्यम का शैक्षणिक उपयोग सही दिशा में, सही पाठ्यक्रम के अनुसार माध्यम के स्वरूप को ध्यान में रखकर किया जाना जरूरी है। एक बेहतर ढंग से लिखी और प्रस्तुत पुस्तक एक कमजोर टेलीविजन कार्यक्रम से अधिक प्रभावपूर्ण हो सकती है। इसलिए प्रसारण माध्यमों का उपयोग करते समय कार्यक्रमों का प्रारूप तैयार करना एक नाजुक कार्य है। प्रसारण का विशेषतापूर्ण उपयोग जनसंचार माध्यम के रूप में न केवल शिक्षा बल्कि अनेक क्षेत्रों में अति सफल एवं प्रभावी रहा है।

ब्रिटेन के स्कूलों के अध्यापकों ने भाषाई कुशलता विकास के लिए टेलीविजन और रेडियो का विस्तार से उपयोग किया। सेवा रत अध्यापकों के प्रशिक्षण में भी प्रसारण का प्रभावपूर्ण उपयोग रहा। बहुउद्देशीय माध्यम (मल्टी मीडिया), दूरस्थ शिक्षा (डिस्टेंस एज्यूकेशन) में टेलीविजन एक मूल्यवान स्रोत साबित हुआ अनेक प्रकार के पाठ्यक्रम जिनके प्रति उदासीनता रही, उनको शुरू करके शिक्षा क्षेत्र में प्रसारण ने नए आयाम उत्पन्न किए। अनौपचारिक या प्रौढ़-शिक्षा क प्रसारण में प्रसारण के माध्यम से शिक्षा अधिक प्रभावपूर्ण रही। दूरस्थ शिक्षा में इसके अधिकाधिक प्रयोग के प्रयास किए गए लेकिन यह पाया गया कि छात्रों के लिए किसी विषय की गहन समझ करने एवं कुशलता हासिल करने में प्रसारण पूरी तरह सफल नहीं हुआ यह भी देखा गया कि प्रसारण में व्यावसायिक कुशलता इस माध्यम में तो कुशलता का संचार करता है लेकिन अध्यापकों एवं प्रसारण विशेषज्ञों की अपनी अलग-अलग शैली और सोच होती है। अध्ययन और माध्यम इन दोनों विचारों की व्यावसायिक कुशलता भिन्न है।

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### 13.11 भावी प्रवृत्तियां

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माध्यमों के विकास में भी कई स्पष्ट प्रवृत्तियां उभर रही हैं जिनका शैक्षणिक प्रसारणों पर प्रभाव पड़ेगा। शिक्षा के लिए अधिक दृश्य-श्रव्य माध्यमों का सृजन होने के कारण अब अधिक उपयोगी माध्यम के चयन की सुविधा बड़ी है। प्रौद्योगिकीय विकास के साथ विभिन्न माध्यम एक दूसरे के करीब आने लगे हैं। जैसे मुद्रण, टेलीफोन, कम्प्यूटर, वीडियो और इनके समन्वय की प्रणाली विकसित होने पर ये एक दूसरे को ज्यादा शक्तिशाली बनाएंगे। प्रसारण कुशलता यह आवश्यक नहीं की कम्प्यूटर आधारित शैक्षणिक कार्यक्रमों की ओर मुड़ जाएगी। वास्तव में कम्प्यूटर प्रोग्रामिंग एवं टेलीविजन प्रोडक्शन दोनों के लिए भिन्न-भिन्न सोच और तौर-तरीका चाहिए और इनके लिए भिन्न प्रकार के लोग चाहिए। इसलिए सफल समन्वित प्रणाली के विकास हेतु शैक्षणिक क्षेत्र में एक टीम भावना या 'टीम-एप्रोच' की जरूरत होगी। अभी प्रसारण संगठनों का अपना ढांचा और पद्धति है, जो शैक्षणिक प्रणाली से भिन्न है।

इस समय शिक्षण कर्ताओं के समक्ष जो माध्यम है उनकी श्रृंखला का विस्तार हो रहा है। ऐसे में माध्यम के व्यावहारिक चयन की आवश्यकता है। इस सन्दर्भ में विगत में भी

शिक्षण कर्ताओं ने माध्यम के चयन के सिद्धान्त विकसित करने के प्रयासी थे। लेकिन किसी व्यावहारिक सिद्धान्त पर वे एकमत होने में सफल नहीं हो सके। कारण यह रहा कि लागत, पहुँच हर छात्र और अध्यापक की सुविधा शैक्षणिक नियन्त्रण आदि कई कारक सामने आए। इसलिए महत्वपूर्ण बात यह है कि शिक्षाविदों को माध्यमों की एक विविध श्रृंखला में से चयन करना होगा। उचित उपयोग के लिए उचित माध्यम का। ऐसे में 1960 और 1970 के दशक की तरह शिक्षा का कोई मॉडल चुनने के बजाय माध्यमों से समसामयिक विकास के कारण शिक्षा के विभिन्न मॉडल्स के लिए विभिन्न जनसंचार माध्यमों के विकल्प को देखना होगा। इसका अर्थ यह हुआ कि विविध प्रकार के छोटे मॉडल तैयार करने के बारे में सोचा जाना चाहिए। अर्थात् विशाल दृश्य-श्रव्य राष्ट्रीय स्तर की शैक्षणिक प्रणाली तैयार करने के विचार से हटकर सोचना चाहिए।

नए माध्यमों में अब यह सम्भव है कि अपने परिवार के भीतर या बाहर उचित लागत के मल्टी मीडिया, पाठ्यक्रम वे तैयार करें। कई देशों में पूर्णकालिक छात्रों का शिक्षण संस्थाओं में भर्ती होने का सिलसिला घटने की ओर है। ऐसे में छोटे और कम लागत के श्रव्य-दृश्य माध्यम महत्वपूर्ण हो जाते हैं। हर किसी के लिए यह आधुनिक माध्यम प्रौद्योगिकी या सॉफ्टवेयर खरीदना सम्भव नहीं है। इसलिए प्रसारण या टेलीविजन प्रसारणों की आम व्यक्ति तक शिक्षा का पहुँचाने की महत्वपूर्ण भूमिका हो सकती है। सम्पन्न देशों में प्रसारण की पहुँच भी अधिक है जैसे इंग्लैण्ड, उत्तरी अमरीका में 98 प्रतिशत घरों में टी.वी. सेट एवं रेडियो उपलब्ध है। कई विकसित देशों में आधी से ज्यादा आबादी टेलीविजन देखती है। हालांकि 1976 में 54 ऐसे विकासशील देश थे जहां मुश्किल से 10 लोगों के बीच एक रेडियो सेट था। अब इस दिशा में भारी विस्तार हुआ है। टेलीविजन का भी रेडियो जितना तो नहीं लेकिन विस्तार तो बहुत हुआ है। इस प्रकार प्रसारण के पास लोगों तक पहुँचाने की क्षमता है।

### 13.12 सारांश

इस प्रकार शैक्षणिक प्रौद्योगिकी की सीमाओं का गत कई सालों में निरन्तर विकास हुआ है और विभिन्न जनसंचार माध्यमों के विकास की प्रौद्योगिकी ने शैक्षणिक सम्भावनाओं के द्वार खोले हैं। प्रसारण में तो न केवल दुर्लभ स्थानों और विस्तार तक लोगों तक पहुँचने की क्षमता ही है। बल्कि इसमें शिक्षा को रुचिकर एवं आनन्ददायक बनाने की योग्यता भी है। विभिन्न तकनीकों का उपयोग किया जाए तो शिक्षा में अत्यन्त महत्वपूर्ण भूमिका निभा सकता है। आमतौर पर वातावरण के सृजन करने की भी इसमें अद्भुत क्षमता है।

शैक्षणिक प्रसारण बहु उद्देशीय हो सकता है। यह एक चेतना जागृत करने के साथ वैकल्पिक कार्यक्रम प्रस्तुति का स्रोत भी हो सकता है। प्रसारण कार्यक्रमों की उपयोगिता बढ़ाने के लिए विद्यालयों, महाविद्यालयों एवं अनवरत शैक्षणिक कार्यक्रमों की एक श्रृंखला तैयार की जा सकती है। इसके लिए कार्यक्रम तैयार करने वाली टीम एवं शिक्षाविदों की टीम के बीच एक तालमेल जरूरी है। समन्वित मल्टी मीडिया पैकेज तैयार करने के लिए मुद्रण, विडियो, माइक्रो कम्प्यूटर एवं ऑडियो कैसेट बनाने के काम में भी समन्वय जरूरी है।

विविध माध्यमों के जो अपार अवसर भारत में भी उपलब्ध है, उनके उचित उपयोग के लिए उन्नत एवं व्यापक स्तर पर अध्यापकों को प्रशिक्षण भी जरूरी ताकि वे उपलब्ध साधनों का उचित इस्तेमाल कर सकें। प्रसारण के ऐसे प्रशिक्षण के बाद प्रभावपूर्ण रूप से शैक्षणिक सामग्री का उपयोग होना चाहिए। दरअसल रेडियो और टेलीविजन प्रसारण बहुत शक्तिशाली है लेकिन शैक्षणिक उद्देश्यों की व्यापक स्तर पर प्रभावपूर्ण इसके द्वारा पूरी करने के पीछे संबंधित एजेन्सियों की इच्छा शक्ति उतनी शक्तिशाली नहीं है। साथ ही प्रारम्भिक स्तर पर जिस प्रकार रेडियो और टी.वी. प्रसारणों माध्यमों को गम्भीरता से शैक्षणिक विकास के लिए लिया गया, प्रतिस्पर्धा के कारण ये प्रसारण भी अपने तय मार्ग से हटते गए और विकास के लिए जन प्रसारण की धारणा गौण हो गई।

अब रेडियो के विकास के लिए टेलीविजन सैटेलाइट प्रयोगों का जमाना बहुत पीछे छूटता जा रहा है। लोकप्रिय कार्यक्रमों के द्वारा व्यावसायिक लाभ को अधिकतम करना अधिकांश टी.वी. चैनल्स का मुख्य काम है। कौन कितने दर्शक आकर्षित करके अधिक विज्ञापन बटोर सकता है यह होड़ लगी है। धीरे-धीरे लगभग इन माध्यमों का रुझान शैक्षणिक विकास के प्रति प्रतिबद्धता से हटने की प्रवृत्ति का शिकार है। इससे शैक्षणिक प्रसार की हानि के साथ साथ ये शक्तिशाली माध्यम अपनी सामाजिक जिम्मेदारी को निभाने का काम भी नहीं करके अपनी प्रतिष्ठा कम कर रहे हैं। माध्यमों और शिक्षा का गठजोड़ अब ढीला पड़ने की रफ्तार में है। प्रसारणकर्ताओं और शिक्षाविदों की अवधारणाएं भिन्न-भिन्न होने लगी है। शिक्षा प्रदान करना कठिन प्रक्रिया है। शिक्षा प्रदान करने का भौतिक मूल्य है जो अब प्रसारण का नहीं रहा। यदि यह व्यावसायिकता की प्रतिस्पर्धा इस प्रकार ही चलती रही तो प्रसारण एक विविध मनोरंजन का साधन मात्र बनकर रह जाएगा। जनसंचार माध्यमों के शक्तिशाली और व्यापक क्रान्ति के युग में शैक्षणिक प्रसारण का संरक्षण करके इसे नई दिशा देकर प्रभावपूर्ण शैक्षणिक माध्यम के साथ स्वस्थ मनोरंजन का साधन बनाने की हद इच्छाशक्ति इसके मूल्य और प्रतिष्ठा को कायम कर सकता है।

### 13.13 निबंधात्मक प्रश्न

1. शैक्षणिक प्रौद्योगिकी के प्रारम्भिक विकास पर एक विस्तृत लेख लिखिए?
2. हार्डवेयर एवं सॉफ्टवेयर आधुनिक शैक्षणिक तकनीकी में किसे कहते हैं।
3. रेडियो और टी.वी. की शैक्षणिक विकास में प्रारम्भिक अवधारणा पर प्रकाश डालिए?
4. मुक्त एवं दूरस्थ शिक्षा में आधुनिक जनसंचार माध्यमों की क्या उपयोगिता हो सकती है। अपने विचार लिखिए।
5. शिक्षा के प्रसार में सैटेलाइट की भूमि का स्पष्ट कीजिए? प्रारम्भिक प्रयोग कहां तक सफल रहे। साथ ही शिक्षा के प्रसार में कम्प्यूटर, केबल टी.वी. की भूमिका की संभावनाएं रेखांकित कीजिए?
6. शिक्षा के प्रसार में प्रसारण की क्षमता एवं संभावनाओं पर अपने विचार व्यक्त कीजिए? क्या टी.वी. एवं रेडियो आदि का रुझान शैक्षणिक दायित्व निभाने का है? यदि नहीं तो क्यों? समीक्षा कीजिए।
7. भारत में शैक्षणिक विकास के लिए प्रसारण माध्यमों की भूमिका पर आलेख प्रस्तुत कीजिए?

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### 13.15 YGAN DARSHAN

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#### **What is Gyan Darshan**

Gyan Darshan is a satellite based TV channel devoted for educational and developmental programming. It is India's first truly educational channel launched jointly by the Ministry of HRD and Prasar Bharati, with the Indira Gandhi National Open University (IGNOU) as the nodal agency. Programmes of Gyan Darshan are contributed by major educational institutions such as IGNOU, UGC/CEC, NCERT/CIET etc. A rich fare of educational programmes suitable to all ages. different professionals housewives, children and adult are broadcast daily for the wholesome 'edutainment' of the entire family.

#### **How to Receive**

Gyan Darshan transmissions are uplinked from the earth station EMPC-IGNOU in New Delhi and downlinked all over the country, without the need for special equipment like decoders etc. and distributed to the

homes alongwith other channels. Gyan Darshan telecasts are available round the clock and all round the year without any break.

### **Programme Content**

Gyan Darshan offers interesting and informative programmes of relevance and value to all family members. Preschool kids, primary and secondary school children, college/university student, youth seeking career opportunities, housewives adults all are covered at convenient time slots. The programmes are prepared with the help of experts in the field and experienced production teams as per international standards of production and technical quality. In addition to national institutions, educational programmes from abroad are also broadcast to offer the viewers ad window to the world at large. A unique feature of Gyan Darshan programmes is that many of them will believe and interactive. Which means, the viewrs can directly talk to the exerts in the studio during an on-going programme and express their weirs, or get their doubt cleared as the show goes on. Toil free number 16001-12345 can be conveniently used from different places in the country to ring up the studio for this purpose.

### **Who Benefits**

The entire will benefit through Gyan Darshan, unlike some other channels which offer mostly irrelevant and mindless entertainment. Students would stand to gain through speccial programmes of Gyan Darshan During their examination season and preparatory time. Professionals can take advantage of our series on computers, management, nursing, engineering etc. Housewives can look forward to our programmes on childcare food & nutrition. In short, everybody gets free what most people are ready to pay for by attending coaching classes and costly tutorials and, that too, in the leisure and comfort of ine's own home.

### **Channel Access**

After becoming a 24 hour channel, the accessibility of Gyan Darshan has increased manyfold. It is now accessible to an estimated 20 million viewers in 40 lakh cable homes spread all over India. This has been possible due to strategic partnerships with major cable TV



Operators in different states-Saimira Access Technologies (Tamil Nadu), Asianet Satellite communications (Kerala), Bhaskar TV Network (Jaipur), Spectranet & Hathway Cable & Datacom PVT.LTD (Delhi), Hathway (Pune, Nasik & Parts of Ahmedabad) Aristo Vision, J.J.,s Cable Network & Pearl's Cabl TV network (Shillong) and other. Also networking with reputed institutions such as BITS (Pilani). IITs. Polytechnics, Salem Stee4l Plant (Salem) have been fruitful in reaching out to large communities of specialized categories. Ground level centres of mega national level project suc as DPEP and those sponsored by the Ministry of Justice & Emprovement have been covered for collective viewing.

<b>GYAN DARSHAN</b>	
<b>At a Glonce</b>	
Satellite	: INSAT-2B 93.5 Degrees East
Transponder	: C-12
Downlink Freq.	: 4170 MHz
Paralisation	: Vertical
Type of signal	: Anollouge, Free-to air
Transmission	: 24 Hours Non-Stop
Satellite	: INSAT-2B 93.5 Degrees East

### **GYAN VANI**

#### **Educational FM Radio Channel**

#### **Dedicated to Education & Development**

#### **LIST OF PROPOSED GYAN VANI FM RADIO STATIONS**

<b>METRO(4)</b>			
1. Delhi	105.6 MHz	3. Mumbai	105.6 MHz
2. Kolkata	105.4MHz	4. Chennai	105.4 MHz
<b>OTHER CENTRES</b>			
5. Lucknow	105.6 MHz	6. Kanpur	104.0 MHz
7. Jaipur	91.9 MHz	8. Jalandhar	106.2 MHz
9. Ludhiana	107.7 MHz	10. Indore	106.6 MHz
11. Srinagar	107.8 MHz	12. Varanasi	105.2 MHz
13. Agra	107.1 MHz	14. Bhopal	104.2 MHz

15. Allahabad	107.4 MHz	16. Jabalpur	104.6 MHz
17. Chandigarh	105.4 MHz	18. Hyderabad	107.6 MHz
19. Bangalore	107.6 MHz	20. Cochin	106.0 MHz
21. Coimbatore	91.9 MHz	22. Madurai	107.6 MHz
23. Vishakapatnam	106.4 MHz	24. Trichy	104.4 MHz
25. Tiruvenathapuram	105.2 MHz	26. Tirunelveli	98.4 MHz
27. Mysore	105.2 MHz	28. Ahmedabad	105.4 MHz
29. Pune	106.2 MHz	30. Panaji	107.8 MHz
31. Nagpur	107.8 MHz	32. Raipur	106.2 MHz
33. Rajkot	107.8 MHz	34. Jamnagar	107.0 MHz
35. Patna	106.2 MHz	36. Guwahati	107.8 MHz
37. Shillong	105.4 MHz	38. Cuttack	91.9 MHz
39. Bhubaneshwar	106.0 MHz	40. Aurangabad	104.8 MHz

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## Unit- 14 Information Technology Bill

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The Union Government on 16 December 1999 introduced in Lok Sabha the much awaited Cyber law legislation to provide the legal frameworks for electronic commerce and to enable electronic governance in the country. The Information Technology Bill, 1999 is a Bill to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, commonly referred to as "electronic commerce", which involve the use of alternatives to paper based methods of communication and storage of information, to facilitate electronic filing of documents with the government agencies and further to amend the Indian Penal Code, 1860, the Indian Evidence Act, 1872, the Banker's Book Evidence Act, 1891 and the Reserve Bank of India Act, 1934 and for matters connected therewith or incidental thereto.

New communication system and digital technology have made dramatic change in the way we live. A revolution is occurring in the way people transact business.

Business and consumers are increasingly using computers to create, transmit and store information in the electronic form instead of traditional paper documents. Information stored in electronic form has many advantages. It is cheaper, easier to store, retrieve and speedier to communicate. Although people are aware of these advantages they are reluctant to conduct business or conclude any transaction in the electronic form due to lack of appropriate legal framework. The two principal hurdles which stand in the way of facilitating electronic commerce and electronic governance are the requirements as to writing and signature for legal recognition. At present many provisions assume the existence of paper-based record and oral testimony. Since electronic commerce eliminates the need for paper based transactions, hence to facilitates e-commerce, the need for legal changes have become an urgent necessity. International trade through the medium of e-commerce is growing rapidly in the past few years and many countries have switched over from traditional paper based commerce to e-commerce.

Titled 'Information Technology Bill, 1999' it also seeks to make consequential amendments in the Indian Penal Code, 1860 and the Indian Evidence Act, 1872. The Bill, introduced by Union Minister for Information technology Parmod Mahajan, gives equal legal treatment to users of electronic communication with other conventional forms. The Bill envisages to legalise the electronic signatures on the net which would give sanctity to credit card transaction and boost e-commerce. The Bill will also amend the Banking Act, the Evidence Act, the telegraph Act, and Company Law to bring it in line with the new law. In 1998-99, the e-commerce transactions in the country were to the tune of Rs.131 . In the current fiscal year, such transactions are expected to touch Rs. 450 crore(\$100 million) against \$43 billion worth transactions in the US in 1998.

The new Bill proposes to set up licensing, monitoring and certifying authorities for enactment of Cyber laws. The authorities would monitor and oversee issue like jurisdiction, origin, authentication and intellectual property, computer crimes committed via information highways on cyberspace. A controller would be appointed to enable the government to monitor and regulate activities like creating web pages, advertisements, bulletin board and most importantly e-commerce originating from the country. A Cyber Regulation Appellate Tribunal is also proposed to be set up which will hear appeals against decisions of the adjudicating officers on alleged crimes. Contravention of the Cyber Regulation would be adjudicated by officers who impose penalty in the nature of compensation to the affected.

The Bill proposes to enable government departments and ministers to accept the filing, creation and retention of documents in the form of electronic record. The government departments would be free to specify the format under which these documents would be stored. Thus electronic records would replace the tones of papers. IT provides for a liability to pay compensation for unauthorized access to computer, its network and data base and also seeks to punish a person who makes misrepresentation or surprises any material fact to the controller of IT activities.

The majority of the e-commerce transaction in India is currently limited to business activities. This is because the buyer and seller are known to each other and they have faith in each other. This does not apply to business-to-consumer transaction, which is why this activity has still not taken off. Once the bill becomes a law and digital signatures are legalized, the business-to-consumer transaction are expected to boom.

## **BILL**

To provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, commonly referred to as "electronic commerce", which involve the use alternatives to paper-based methods of communication and storage of information, to facilitate electronic filing of documents with the Government agencies and further to amend the Indian Penal Code, the Indian Evidence Act, 1872, the Banker's Book Evidence Act, 1891 and the Reserve Bank of India Act, 1934 and for matters connected therewith or incidental there to.

WHEREAS the General Assembly of the United Nations by resolution A/RES/51/162 date the 30<sup>th</sup> January, 1997 has adopted the Model Law on Electronic Commerce adopted by the United Nations Commission on International Trade law;

AND WHEREAS the said resolution recommends inter alia that all States give favourable.

Consideration to the said Model Law when they enact or revise laws, in view of the need uniformity of the law applicable to alternatives to paper based methods of communication and storage of information.

AND WHEREAS it is considered necessary to give effect to the said resolution and to promote efficient delivery of Government service by means of reliable electronic records;

BE it enacted by Parliament in the Fiftieth Year of Republic of India as follows:

## **CHAPTER I**

### **Preliminary**

#### **Short title, extent, commencement and application**

1. (1) This Act may be called the Information Technology Act, 1999.

2. It shall extend to the whole of India and, save as otherwise provided in this Act,  
it applies also to any offence or contravention thereunder committed outside India by any person.
3. It shall come into force on such date as the Central Government may, by notification, appoint and different dates may be appointed for different provisions of this Act and any reference in such provision to the commencement of this Act shall be constructed as a reference to the commencement of that provision.
4. Nothing in this Act shall apply to
  - a) a negotiable instrument as defined in section 13 of the Negotiable Instrument Act, 1881;
  - b) a power-of-attorney as defined in section IA of the Power-of-Attorney Act, 1882.
  - c) a trust as defined in section 3, of the Indian Trusts Act, 1882;
  - d) a will as defined in clause (h) of section 2 of the Indian Succession Act, 1925 including any other testamentary disposition by whatever name called;
  - e) any contract for sale or conveyance of immovable property or any interest in such property;
  - f) any such class of documents or transactions as may be notified by the Central Government in the Official Gazette.
2. (1) In this Act, unless the context otherwise requires
  - a) "access" with its grammatical variations and cognate expressions means gaining entry into, instructing or communicating with the logical, arithmetical, or memory function resources of computer, computer system or computer network;
  - b) "addressee" means a person who is intended by the originator to receive the electronic record but does not include any intermediary.
  - c) "adjudicating officer" means adjudicating officer appointed under subsection (1) of section 46;
  - d) "affixing digital signature" with its grammatical variation and cognate expressions means adoption of any methodology or

procedure by a person for the purpose of authenticating an electronic record by means of digital signature;

- e) "appropriate Government" means as respects any matter
- i) Enumerated Government" means as respects any matter
- ii) relating to any state law enacted under list III of the Seventh Schedule to the Constitution,

the State Government and in any other case, the Central Government;

- f) "asymmetric crypto system" means a system of a secure key pair consisting of a private key for creating a digital signature and a public key to verify the digital signature;
- g) "Certifying Authority" means a person who has been granted a licence to issue a Digital Signature Certificate under section 24;
- h) "certification practice statement" means a statement issued by a Certifying Authority employed in issuing Digital signature certificates;
- i) "computer" means any electronic magnetic, optical or other high-speed data processing device or system which performs logical, arithmetic, and memory function by manipulations of electronic, magnetic or optical impulses, and includes all input, output, processing, storage, computer software, or communication facilities which are connected or related to the computer in a computer system or computer network;
- j) "computer network" means the interconnection of one or more computers through-
  - i) the use of satellite, microwave, terrestrial line or other communication media; and
  - ii) Terminals or a complex consisting of two or more interconnected computers whether or not the interconnection is continuously maintained
- k) "computer resource" means computer, computer system, computer network, data, computer database or software;
- l) "computer system" means a device or collection of devices, including input and output support devices and excluding calculators which are not programmable and capable of being

used in conjunction with external files, which contain computer programmes, electronic instructions, input data, and output data, that performs logic, arithmetic data storage and retrieval, communication control and other functions;

- m) "controller" means the Controller of Certifying Authorities appointed under sub-section(1) of section 17;
- n) "Cyber Appellate Tribunal" means the Cyber Regulation Appellate Tribunal established under sub-section(1) of section 48;
- o) "data" means a representation of information, knowledge, fact, concepts or instruction which are being prepared or have been prepared in a formalized manner, and is intended to be processed, is being processed, or has been processed in a computer system or computer network, and may be in any form (including computer printouts magnetic or optical storage media, punched cards, punched tapes) or stored internally in the memory of the computer;
- p) "digital signature" means authentication of any electronic record by a subscriber by means of an electronic method or procedure in accordance with the provisions of section 3;
- q) "Digital Signature Certificate" means a Digital Signature Certificate issued under sub-section(4) of section 35;
- r) "electronic form" with reference to information means any information generated, sent, received stored in media, magnetic, optical, computer memory or similar device;
- s) "electronic record" means data, record or data generated, image or sound stored, received or sent in an electronic form;
- t) "function", in relation to computer, includes logic, control, arithmetical process, deletion, storage and retrieval and telecommunication from or within a computer;
- u) "information" includes data, text, images, sound, codes, computer programmes, software and database;
- v) "intermediary" with respect to, any particular electronic message means any person who on behalf of another person receives, stores or transmits that message or provides any service with respect to that message;



w) "key pair", in an asymmetric crypto system, means a private key and its mathematically related public key,

Which are so related that then public key can verify a digital signature created by the private key;

x) "law" includes any Act of Parliament or of a State Legislature, Ordinances promulgated by the President or Governor, as the case may be, Regulations made by the President under Article 240, Bill connected as President's Act under sub-clause (a) of clause (1) of article 357 of the Constitution and includes rules regulations, bye-laws and orders issued or made thereunder;

y) "licence" means a licence granted to a Certifying Authority under section 24;

z) "originator" means a person who sends, generates, stores or transmits any electronic message or causes any electronic message to be sent, generated, stored or transmitted to any other person but does not include an intermediary;

za) "prescribed" means prescribed by rules made under this Act;

zb) "private key" means the key of a key pair used to create a digital signature;

zc) "public key" means the key of a key pair used to verify a digital signature and listed in the Digital Signature Certificate;

zd) "secure system" means computer hardware, software, and procedure that-

a) are reasonably secure from intrusion and misuse;

b) provide a reasonable level of reliability and correct operation;

c) are reasonably suited to performing the intended functions; and

d) adhere to generally accepted security procedures;

ze) "security procedure" means the security procedure prescribed under section 16 by the Central Government;

zf) "subscriber" means a person in whose name the Digital Signature Certificate is issued;

- zg) "verify in relation to a digital signature, electronic record or public key, with its grammatical and cognate expressions means to determine whether -
- a) the initial electronic record was affixed with signature by the use of private key corresponding to the public key of the subscriber;
  - b) the initial electronic record is retained intact or has been altered since such electronic record was so affixed with the digital signature.
- 2) Any reference in this Act to any enactment or any Provision thereof shall, in relation to an area in which such enactment of such provision is not in force, be constructed as a reference to the corresponding law or the relevant provision of the corresponding law, if any, in force in that area.

## **CHAPTER-II**

### **Digital Signature**

#### **Authentication of electronic records**

3 (1) Subject to the provision of this section any subscriber may authentication an

(2) The authentication of the electronic record shall be effected by the use of asymmetric crypto system and hash function which envelop and transform the initial electronic record into another electronic record.

**Explanation** - For the purposes of this sub-section, "hash function" means an algorithm mapping or translation of one sequence of bits into another, generally smaller, set known as "hash result" such that an electronic record yields the same hash result every time the algorithm is executed with the same electronic record as its input making it computationally infeasible-

- a) To derive or reconstruct the original electronic record from the hash result produced by the algorithm;
  - b) That two electronic records can produce the same hash result using the algorithm.
- (3) Any person by the use of public key of the subscriber can verify the electronic record.

- (4) The private key and the public key me unique to the subscriber and constitute a functioning key pair.

### **CHAPTER-III**

#### **Electronic Governance**

##### **Legal recognition of electronic records**

4. Where any law provides that information or any other matter shall be in writing or in the typewritten of printed form, then, notwithstanding anything contained in such laws such requirement shall be deemed to have been satisfied if such information or matter is -

- a) Rendered or made available in an electronic form; and
- b) Accessible so as to be usable for a subsequent reference

##### **Legal recognition of digital signatures**

5. Where any law provides that information or any other matter shall be authenticated by affixing the signature or, any document should be signed or bear the signature of any person, notwithstanding anything contained in such law, such requirement shall be deemed to have been satisfied, if such information or matter is authenticated by means of digital signature affixed in such manner as may be prescribed by the Central Government.

**Explanation** - For the purposes of this section, "signed", with its grammatical variations and cognate expression, shall, with reference to a person, means affixing of his hand written signature or any mark on any document and the expression "signature" shall be constructed accordingly.

##### **Use of electronic records and digital signatures is Government and its agencies**

6. (1) Where any law provides for -
- a) The filing of any form, application or any other document with any office, authority, body or agency owned or controlled by the appropriate Government in a particular manner;
  - b) The issue or grant of any license, permit, sanction or approval by whatever called in a particular manner;
  - c) the receipt or payment of money in a particular manner.

Then notwithstanding anything contained in any other law for the time being in force, such requirement shall be deemed to have been

satisfied if such filing, issue, grant, receipt or payment, as the case may be is effected by means of such electronic form as may be prescribed by the appropriate Government.

- 2) The appropriate Government may, for the purposes of sub-section (1), by rules, prescribe-
  - a) the manner and format in which such electronic records shall be filed, created or issued;
  - b) the manner and method of payment of any fee or charge for filing, creation or issue any electronic record under clause (a)

#### **Retention of electronic records**

7. (1) Where any law provides that documents, records or information shall be retained for any specific period. Then, that requirement shall be deemed to have been satisfied if such documents, records or information are retained in the electronic form, if -
  - a) the information contained therein remains accessible so as to be usable for a subsequent reference;
  - b) the electronic records is retained in format in which it was originally generated, sent or received or in format which can be demonstrated to represent accurately the information originally generated, sent or received.
  - c) The detail which will facilitate the identification of origin, destination, date and time dispatch or receipt of such electronic record are available in the electronic record;

Provided that this clause does not apply to any information which is automatically generated solely for the purpose of enabling an electronic record to be dispatched or received.

- 2) Nothing in this section shall apply to any law that expressly provides for the retention of documents, records or information in the form of electronic records.

#### **Publication of rules ,regulation, etc., in Electronic Gazette**

8. Where any law provides that any rule, regulation, order, bye-law, notification or any other matter shall be published in the Official Gazette, then, such requirement shall be deemed to have been satisfied if such

rule, regulation, order, bye-law, notification or any other matter is published in the Official Gazette in the electronic form;

Provided that where an Official Gazette is published both in the printed as well as in the electronic form, the date of publication shall be deemed to be the date of that Official Gazette which was first published in any form.

**Section 6, 7 and 8 not to confer right to insist document should be accepted in electronic form**

9. Nothing contained in sections 6, 7 and 8 shall confer a right upon any person to insist that any Ministry or Department of Central Government or the State Government confer right to or any authority or body established by or under any law or controlled or funded by the Central or State Government should accept, issue, create, retain, preserve any document in the form of electronic records or effect any monetary transaction in the electronic form.

**Power to make rules by central government in respect of digital signature**

10. The Central Government may, for the purposes of this Act, by rules, prescribe-
- a) the types of digital signature;
  - b) the manner and format in which the digital signature, shall be affixed;
  - c) the manner or procedure which facilitates identification of the person affixing the digital signature;
  - d) control processes and procedures to ensure adequate integrity and confidentiality of electronic records or payments; and
  - e) any other matter which is necessary to give legal effect to digital signatures.

**CHAPTER IV**

**Attribution, acknowledgement an dispatch of electronic records**

**Attribution of electronic records**

11. An electronic record shall be attributed to the originator-
- a) If it was sent by the originator himself;

- b) By a person who had the authority to act on behalf of the originator in respect of that electronic record; or
- c) by an information system programmed by or on behalf of the originator to operate automatically.

**Acknowledgement of receipt**

- 12. (1) Where the originator has agreed with the addressee that the acknowledgement be given in a particular form by a particular method, an acknowledgement may be given by-
  - a) any communication by the addressee, automated or otherwise; or
  - b) any conduct of the addressee, sufficient to indicate to the originator that the electronic record has been received.
- 2) Where the originator has stipulated that the electronic record shall be binding only on receipt of an acknowledgement of such electronic record by him, then unless acknowledgement has been so received, the electronic record shall be deemed to have been never sent by originator.
- 3) Where the originator has not stipulated that the electronic record shall be binding only on receipt of such acknowledgement, and the acknowledgement has not been received by the originator within the time specified or agreed or, if no time has been specified or agreed to within a reasonable time, then the originator may give notice to the addressee stating that no acknowledgement has been received by him and specifying a reasonable time by which the acknowledgement must be received by him and if no acknowledgement is received within the aforesaid time limit he may after giving notice to the addressee treat the electronic record as though it has never been sent.

**Time and place of dispatch and receipt of electronic record**

- 13. (1) Save as otherwise agreed to between the originator and the addressee, the dispatch of an electronic record occurs when it enters a computer resource outside the control of dispatch of the originator,

- 2) Save as otherwise agreed between the originator and the addressee, the time of receipt of an electronic record shall be determined as follows, namely:
  - a) If the addressee has designated a computer resource for the purpose of receiving electronic records:-
    - i) Receipt occurs at the time when the electronic record enters the designated computer resource; or
    - ii) If the electronic record is sent to a computer resource of the addressee that is not the designated computer resource, receipt occurs at time when the electronic record is retrieved by the addressee;
  - b) If the addressee has not designated a computer resource along with specified timings, if any, receipt occurs when the electronic record enters the computer resource of the addressee.
- 3) Save as otherwise agreed between the originator and the addressee, electronic record is deemed to be dispatched at the place where the originator has his place of business, and is deemed to be received at the place where the addressee has his place of business.
- 4) The provision of sub-section (2) shall apply notwithstanding that the place where the computer resource is located may be different from the place where the electronic record is deemed to have been received under sub-section (3).
- 5) For the purposes of this section,
  - a) if the originator or the addressee has more than one place of business, the principal place of business, shall be the place of business;
  - b) if the originator or the addressee does not have a place of business, his usual place of residence shall be deemed to be the place of business;
  - c) "usual place of residence", in relation to a body corporate, means the place where it is registered.

## **CHAPTER V**

### **Secure electronic records and secure digital signature**

### **Secure electronic record**

14. Where any security procedure has been applied to an electronic record at a specified point of time, then such record shall be deemed to be a secure electronic record from such point of time of verification.

### **Secure digital signature**

15. If, by application of a security procedure agreed to by the parties concerned, it can be verified that a digital signature, at the time it was affixed, was-

- a) Unique to the subscriber affixing it;
- b) Capable of identifying such subscriber;
- c) Created in a manner or using a means under the exclusive control of the subscriber and is linked to the electronic record to which it relates in such a manner that if the electronic record was altered the digital signature would be invalidated, then such digital signature shall be deemed to be a secure digital signature.

### **Security procedure**

The Central Government shall for the purposes of this Act prescribe the security procedure having regard to commercial circumstances prevailing at the time when the procedure was used, including-

- a) the nature of the transaction;
- b) the level of sophistication of the parties with reference to their technological
- c) the volume of similar transaction engaged in by other parties;
- d) the availability of alternatives offered to but rejected by any party;
- e) the cost of alternatives procedures; and
- f) the procedures in general use for similar types of transactions or communications.

## **CHAPTER VI**

### **Regulation of certifying authorities**

### **Appointment of controller and other officers**



- 17.(1) The Central Government may, by notification in the Official Gazette, appoint a Controller of Certifying Authorities for the purpose of this Act and may also by same or subsequent notification appoint such number of Deputy Controllers and Assistant Controllers as it deems fit.
- 2) The Controller shall discharge his functions under this Act subject to the general control and directions of the Central Government.
- 3) The Deputy Controllers and Assistant Controllers shall perform the functions assigned to them by controller under the general superintendence and control of the controller.
- 4) The head office of the Controller shall be at such place as the Central Government may specify, and there may be established at such places as the Central Government may think fit, branch offices of the office of the controller.
- 5) There shall be a seal of the office of the controller.

**Functions of controller**

18. The Controller may perform all or any of the following function, namely:-
- a) exercising supervision over the activities of the Certifying Authorities;
  - b) laying down the standards to be maintained by the Certifying Authorities;
  - c) specifying the qualifications and experience which employees of the Certifying Authorities should possess;
  - d) specifying the conditions subject to which the Certifying Authorities shall conduct their business;
  - e) specifying the content of written, printed or visual material and advertisements that may be distributed or used in respect of a digital signature certificate and the public key;
  - f) specifying the form and content of a Digital Signature Certificate and the key;
  - g) specifying the form and manner in which accounts shall be maintained by Certifying Authorities;

- h) specifying the terms and conditions subject to which auditors may appointed and the remuneration to be paid to them;
- i) facilitating the establishment of any electronic system by a Certifying Authority either solely or jointly with other Certifying Authorities regulation of such systems;
- j) specifying the manner in which the Certifying Authorities shall conduct their dealings with the subscribers;
- k) resolving any conflict of interests between the Certifying Authorities and the subscriber;
- l) laying down the duties of the Certifying Authorities;
- m) maintaining a data-base containing the disclosure record of every Certifying Authority containing such particulars as may be specified by regulations, which shall be accessible to public.

#### **Recognition of foreign certifying authorities**

- 19. (1) Subject to such conditions and restrictions as may be specified by regulations, the Controller may with the previous approval of the Central Government, and by notification in Official Gazette, recognise any Certifying Authority as a Certifying Authority for the purposes of this Act.
- 2) Where any Certifying Authority is recognized under sub-section (1), the Digital Signature Certificate issued by such Certifying Authority shall be valid for the purposes of this Act.
- 3) The Controller may if he is satisfied that any Certifying Authority has contravened any of the conditions and restrictions subject to which it was granted recognition under sub-section (1) he may, for reasons to be record in writing, by notification in the Official Gzette, revoke such recognition.

#### **Controller to act as repository**

- 20. (1) The Controller shall be the repository of all Digital Signature Certificate issued under this Act.
- 2) The Controller shall-
  - a) make use of hardware, software and procedures that are secure from intrusion and misuse;

- b) observe such other standards as may be prescribed by the Central Government, to ensure that the secrecy and security of the digital signatures are assured.
- 3) The Controller shall maintain a computerized data-base of all public keys in such a manner that such database and the public keys are available to any public.

#### **Licence to issues Digital Signature Certificates**

21. (1) Subject to the provisions of sub-section (2), any person may make an application, to the controller, for a licence to issue Digital signature Certificates.
- 2) No licence shall be issues under sub-section (1), unless the applicant fulfills such requirements with respect to qualification, expertise, manpower, financial resources and other infrastructure facilities, which are necessary to issue Digital Signature Certificates as may be prescribed by the Central Government.
  - 3) A licence granted under this section shall-
    - a) be valid for such period as may be prescribed by the Central Government;
    - b) not be transferable or heritable;
    - c) be subject to such terms and conditions as may be specified by regulation.

#### **Application for licence**

22. (1) Every application for issue of a licence shall be in such form as maybe prescribed by the Central Government.
- (2) Every application for issue of a licence shall be accomp-ained by-
- a) a certification practice statement;
  - b) a statement including the procedures with respect to identification of the applicant;
  - c) payment of such fees, not exceeding twenty-five thousand rupees as may be prescribed by the Central Government;
  - d) such other documents, as may be prescribed by the Central Government.

#### **Renewal of licence**

23. An application for renewal of licence shall be-

- a) In such form;
- b) Accompanied by such fees, not exceeding five thousand rupees, as may be prescribed by the Central Government and shall be made not less than forty-five days before the date of expiry of the period of validity of licence:

Provided that an application for the renewal of the licence made after the expiry of the licence may be entertained on payment of such late fee, not exceeding five-hundred rupees as may be prescribed.

#### **Procedure for grant or rejection of licence**

The Controller may, on receipt of an application under sub-section (1) of section 21, after considering the documents accompanying the application and such other factors, as he deems fit, grant the licence or reject the application;

Provided that no application shall be rejected under this section unless the applicant has been given a reasonable opportunity of presenting his case.

#### **Suspension of licence**

25. (1) The Controller may, if he is satisfied after making such inquiry, as he may think fit, that a certifying Authority has-

- a) made a statement in, or in relation to, the application for the issue or renewal of the licence, which is incorrect or false in material particulars;
- b) failed to comply with the terms and conditions subject to which the licence was granted;
- c) failed to maintain the standards specified under clause (b) of sub-section (2) of section (20);
- d) has contravened any provision of this Act, rule, regulation or order made thereunder,

#### **Revoke the licence**

Provided that no licence shall be revoked unless the Certifying Authority has been given a reasonable opportunity of showing cause against the proposed revocation.

- 2) The Controller may, if he has reasonable cause to believe that there is any ground for revoking licence under sub-section (1), by

order suspend such licence pending the completion of any enquiry ordered by him: Provided that no licence shall be suspended for a period exceeding ten days unless the Certifying Authority has been given a reasonable opportunity of showing cause against the proposed suspension.

- 3) No Certifying Authority whose licence has been suspended shall issue any Digital Signature Certificate during such suspension.

#### **Notice of suspension of revocation of licence**

26. (1) Where the licence of the Certifying Authority is suspended or revoked, the Controller shall publish notice as such suspension or revocation, as the case may be, in data-base maintained by him;
- 2) Where one or more repositories are specified, the Controller shall publish notices of such suspension or revocation, as the case may be, in all such repositories.

#### **Power to delegate**

27. The Controller may, in writing, authorise the Deputy Controller, Assistant Controller or any officer to exercise any of the powers of the Controller under this chapter.

#### **Power to investigate contraventions**

28. (1) Controller or any officer authorised by him in this behalf shall take up for investigation any contravention of the provisions of this Act, rules or regulations made thereunder.
- 2) The Controller or any officer authorized by him in this behalf shall exercise the like powers which are conferred on Income-tax authorised under Chapter XIII of the Income-tax Act, 1961 and shall exercise such powers, subject to such limitations laid down under that Act.

#### **Access to computers and data**

29. (1) Without prejudice to the provisions of sub-section (2) of section 68, the controller or any person authorised by him shall, if he has reasonable cause to suspect that any contravention of the provisions of this Act, rules or regulations made thereunder has been committed, have access to any computer system, any apparatus, data or any other material connected with such system,

for the purpose of searching or causing a search to be made for obtaining any information or data contained in or available to such computer system.

- 2) For the purposes of sub-section (1), the Controller or any person authorised by him may, by order, direct any person incharge f, or otherwise concerned with the operation of, the computer system, data apparatus or material, to provide him with such reasonable technical and other assistance as may consider necessary.

#### **Certifying authority to follow certain procedures**

30. Every Certifying Authority shall-

- a) make use of hardware, software, and procedures that are secure intrusion and misuse;
- b) provide'a reasonable level of reliability in its services which are reasonably suited to the performance of intended functions;
- c) adhere to security procedures to ensure that the secrecy and privacy digital signatures are assured; and
- d) observe such other standards as may be specified by regulations.

#### **Certifying Authority to ensure compliance of the Act, etc.**

31. Every Certifying Authority shall ensure that every person employed or otherwise engaged by it complies, in the course of his employment or engagement, with the provisions of this Act, rules, regulations and orders made thereunder.

#### **Display of licence**

32. Every Certifying Authority shall display its licence at a conspicuous place of the premises in which it carries on its business.

33. Every Certifying Authority whose licence is suspended or revoked shall immediately after such suspension or revocation, surrender the licence to the controller.

#### **Disclosures**

34. (1) Every Certifying Authority shall disclose in the manner specified by regulations-

- a) its Digital Signature Certificates which contains the public key corresponding to the private key used by that Certifying Authority to digitally sign another Digital Signature Certificate;

- b) any certification practice statement relevant thereto;
  - c) notice of revocation or suspension of its Certifying Authority certificates, if any; and
  - d) any other fact that materially and adversely affects either the reliability of a Digital Signature Certificate, which that Authority has issued, or the Authority's ability to perform its services.
- 2) Where in the opinion of Certifying Authority, any event has occurred or my situation has arisen which may materially and adversely affect the integrity of its computer system or the conditions subject to which a Digital Signature Certificate was granted, then the Certifying authority shall-
- a) use reasonable efforts to notify any person who is likely to be affected by that occurrence; or
  - b) act in accordance with the procedure specified in its certification practice statement to deal with such event or situation.

## **CHAPTER VII**

### **Digital Signature Certificate**

#### **Certifying Authority to issue digital signature certificate**

35. (1) Any person may an application to the Certifying Authority for the issue of Digital Signature Certificate in such form as may be prescribed by the Central Government.
- 2) Every such application shall be accompanied by such fee not exceeding twenty-five thousand rupees as may be prescribed by the Central Government, to be paid to the Certifying Authority:  
Provided that while prescribing fees under sub-section (2) different fees may be prescribed for different classes of applicants.
- 3) Every such application shall be accompanied by a certification practice statement or where them is no such statement, a statement containing such particulars, as may be specified by regulations.
- 4) On receipt of an application under sub-section (1), the Certifying Authority may, after consideration of the certification practice statement or the other statement under sub-section (3) and after making such enquiries to it may deem fit, grant the Digital

Signature Certificate or for reasons to be recorded in writing, reject the application;

Provided that no Digital Signature Certificate shall be granted unless the Certifying Authority is satisfied that-

- a) the applicant holds the private key corresponding to the public key to be listed in the Digital Signature Certificate;
- b) the applicant holds a private key, which is capable of creating a digital signature;
- c) the public key to be listed in the certificate can be the applicant has been given a reasonable opportunity of showing cause against the proposed rejection.

#### **Representation upon issuance of Digital Signature Certificate**

36. A Certifying Authority while issuing a Digital Signature Certificate shall certify that-

- a) it has complied with provisions of this Act and rules and regulations made thereunder;
- b) it has published the Digital Signature Certificate or otherwise made it available to such person relying on it and the subscriber has accepted it;
- c) the subscriber holds the private key corresponding to the public key, listed in the Digital Signature Certificate;
- d) the subscriber's public key and private key constitute a functioning key pair;
- e) the information contained in the Digital Signature Certificate is accurate; and
- f) It has no knowledge of any material fact, which if it had been included in the Digital Signature Certificate would adversely affect the reliability of the representations made in clauses (a) to (d).

#### **Suspension of digital signature certificate**

37. (1) Subject to the provisions of sub-section (2), the certifying Authority which has issued a Digital Signature Certificate may suspend such Digital Signature Certificate,-

- a) on receipt of a request on that effect from-
  - i) the subscriber listed in the Digital Signature Certificate; or



- ii) any person duly authorised to act on behalf of that subscriber;
- b) If it is of opinion that the Digital Signature Certificate should be suspended in public interest.
- 2) A Digital Signature Certificate shall not be suspended for a period exceeding fifteen days unless the subscriber has been given an opportunity of being heard in the matter.
- 3) On suspension of a Digital Signature Certificate under this section, the Certifying Authority shall communicate the same to the subscriber.

### **Revocation of Digital Signature Certificate**

38. (1) A certifying Authority may revoke a Digital Signature Certificate issued by it-
- a) where the subscriber or any other person authorized by him makes a request to that effect; or
  - b) upon the death of the subscriber; or
  - c) upon the dissolution of the firm or winding up of the company where the subscriber is a firm or a company.
- 2) Subject to the provisions of sub-section (3) and without prejudice to the provisions of sub-section (1), a Certifying Authority may revoke a Digital Signature Certificate which has been issued by it at any time, if it is of opinion that-
- a) a material fact represented in the Digital Signature Certificate is false or has been concealed;
  - b) a requirement of issuance of the Digital Signature Certificate was not satisfied;
  - c) the Certifying Authority's private key or security system was compromised in a manner materially affecting the Digital Signature Certificate's reliability;
  - d) the subscriber has been declared insolvent or dead or where a subscriber is a firm or a company, has been dissolved, wound up or otherwise ceased to exist.
- 3) A Digital Signature Certificate shall not be revoked unless the subscriber has been given an opportunity of being heard in matter.

- 4) On revocation of a Digital Signature Certificate under this section the Certifying Authority shall communicate the same to the subscriber.
39. (1) Where a Digital Signature Certificate is suspended or revoked under section 37 or section 38, the Certifying Authority shall publish a notice of such suspension or revocation, as the case may be in the repository specified in the Digital Signature Certificate for publication of such notice.
- 2) Where one or more repositories are specified, the Certifying Authority shall publish a notices of such suspension or revocation, as the case may be, in all repositories.

## **CHAPTER VIII**

### **Duties of subscribers**

#### **Generating key pair**

40. Where any Digital Signature Certificate, the public key of which corresponds as the private key of that subscriber which is to be listed in the Digital Signature Certificate has been accepted by a subscriber, then, the subscriber shall generate the key pair of applying the security procedure,

#### **Acceptance of Digital Signature certificate**

41. (1) A subscriber shall be deemed to have accepted a Digital Signature Certificate if he publishes or authorizes the publication of Digital Signature Certificate-

- a) to one or more persons;
- b) in a repository, or

otherwise demonstrates his approval of the Digital Signature Certificate in any manner.

- 2) By accepting a Digital Signature Certificate the subscriber certifies to all who reasonably rely on the information contained in the Digital Signature Certificate that-

- a) the subscriber holds the private key corresponding to the public key listed in the Digital Signature Certificate and is entitled to hold the same;

- b) all representations made by the subscriber to the Certifying Authority and all material relevant to the information contained in the Digital Signature Certificate are true.
- c) all information in the Digital Signature Certificate that is within the knowledge of the subscriber is true.

**Control of the private key**

42. (1) Every subscriber shall exercise reasonable care to retain control of the private key corresponding to the public key listed in the Digital Signature Certificate and take all steps to prevent its disclosure to a person not authorized to affix the digital signature of the subscriber.
- 2) If the private key corresponding to the public key listed in the Digital Signature Certificate has been compromised, then, the subscriber shall communicate the same without any delay to the Certifying Authority.

**CHAPTER IX**

**Penalties and Adjudication**

**Penalty for damage computer, computer system, etc.**

43. If any person without permission of the owner or any other person who is in charge of a computer, computer system or computer network-
- a) accesses or secures access to such computer, computer system or computer network;
  - b) download, copies or extracts any data computer data base or information from such computer, computer system or computer network including information or data held or stored in any removable storage medium;
  - c) introduces or causes to be introduced any computer contaminant or computer virus into any computer, computer system or computer network;
  - d) damages or causes to be damaged any computer, computer system or computer network, data, computer database or any other programmes residing in such computer, computer system or computer network;

- e) disrupts or cause the disruption of any computer, computer system or computer network;
- f) denies or cause the denial of access to any person authorised to access any computer, computer system or computer network by any means;
- g) provides any assistance to any person to facilitate access to computer, computer system or computer network in contravention of the provisions of this Act, rules or regulations made thereunder;
- h) charges the services availed of by a person to the account of another person by tampering with or manipulating any computer, computer system or computer network,

he shall be liable to pay damages by way of compensation not exceeding ten lakh rupees to the person so affected.

**Explanation: For the purposes of this section-**

- i) "computer contaminant" means any set of computer instructions that are designed-
  - a) to modify, destroy, record, transmit data or programme residing within a computer, computer system or computer network; or
  - b) by any means to usurp the normal operation of the computer, computer system or computer network;
- ii) "computer database" means a representation of information, knowledge, facts, concepts or instructions in text, image, audio, video that are being prepared or have been prepared in a formalised manner or have been produced by a computer, computer system or computer network and are intended for use in computer, computer system or computer network;
- iii) "computer virus" means any computer instruction, information, data or programme that destroys, damages, degrades or adversely affects the performance of a computer resource attaches itself to another computer resource and operates when a programme, data or instruction is executed or some other event takes place in that computer resource;
- iv) "damage" means to destroy, alter, delete, add, modify or rearrange any computer resource by any means.

**Penalty for failure to furnish information return, etc.**

44. If any person who is required under this Act or any rules or regulations thereunder to-
- a) furnish any document, return or report to the Controller or the Certifying Authority fails to furnish the same, he shall be liable to penalty not exceeding one lakh and fifty thousand rupees for each such failure;
  - b) file any return or furnish any information, books or other documents within the time specified therefore in the regulations fails to file return or furnish the same within the specified therefore in regulations, he shall be liable to a penalty not exceeding five thousand rupees for everyday during which such failure continues;
  - c) maintain books of account or records fails to maintain the same, he shall be liable to a penalty not exceeding ten thousand rupees for every day during which the failure continues.

**Residuary penalty**

Whoever contravenes any rules or regulations made under this Act, for the contravention of which no penalty has been separately provided, shall be liable to pay a compensation not exceeding twenty-five thousand rupees to the person affected by such contravention.

**Power to adjudicate**

46. (1) For the purpose of adjudging under this Chapter whether any person has committed a contravention of any of the provisions of this Act or of any rule, regulation, direction or order made thereunder the Central Government shall, subject to the provisions of sub-section (3), appoint any officer not below the rank of a Director to the Government of India or an equivalent officer of a State Government to be an adjudicating officer, for holding an inquiry in the manner prescribed by the Central Government. After giving the person referred to in sub-section (1) a reasonable opportunity for making representation in the matter and if, on such inquiry, he is satisfied that the person has committed the contravention, he may impose such penalty as he thinks fit in accordance with the provisions of that section.

- 3) No person shall be appointed as an adjudicating officer unless he possesses such legal or judicial experience as may be prescribed by the Central Government.
- 4) Where more than one adjudicating officers are appointed, the Central Government shall specify by order the matters and places with respect to which such officers shall exercise their jurisdiction.
- 5) Every adjudicating officer shall have the powers of Civil court which are conferred on the Cyber Appellate Tribunal under sub-section (2) of section 58, and-
  - a) all proceedings before it shall deemed to be judicial proceedings within the meaning of sections 193 and 228 of the Man Penal Code.
  - b) shall be deemed to be a civil court for the purposes of section 345 and 346 of the Code of Criminal Procedure, 1973.

**Factors to be taken into account by the adjudicating officer**

47. While adjudging the quantum of compensation under this chapter, the adjudicating officer shall have due regard to the following Factors, namely-
- a) the amount of gain of unfair advantage, wherever quantifiable, made as a result of
  - b) the amount of loss caused to any person as a result of the default;
  - c) the repetitive nature of the default.

**CHAPTER X**

**Cyber Regulations Appellate Tribunal**

**Establishment of Cyber Appellate Tribunal**

48. (1) The Central Government shall, by notification, establish one or more appellate tribunal to be known as the Cyber Regulations Appellate Tribunal.
- 2) The Central Government shall also specify, in the notification referred to in sub-section (1), the matters and places in relation to which the Cyber Appellate Tribunal may exercise jurisdiction.

**Composition of Cyber Appellate Tribunal**

49. A Cyber Appellate Tribunal shall consist of one person only (hereinafter referred to as the Presiding officer of the Cyber Appellate Tribunal) to be appointed, by notification, by the Central Government.

**Qualifications for appointment as Presiding officer of the Cyber Appellate Tribunal**

50. A person shall not be qualified for appointment as the Presiding Officer of Cyber Appellate Tribunal unless he-

- a) is, or has been, or is qualified to be, a Judge of High Court; or
- b) Is or has been a member of the Indian legal Service and is holding or has held a post in Grade I of that service for at least three years.

**Term of office**

51. The Presiding Officer of a Cyber Appellate Tribunal

**Salary, allowances and other terms and conditions of service of Presiding officer.**

52. The salary and allowances payable to and the other terms and conditions of services including pension, Gratuity and other retirement benefits of, the Presiding Officer of a Cyber Appellate Tribunal shall be such as may be prescribed:

Provided that neither the salary and allowances nor the other terms and conditions of services of the Presiding Officer shall be varied to his disadvantage after appointment.

**Filling up of vacancies**

53. If, for reason other than temporary absence, any vacancy occurs in the office of the Presiding Officer of a Cyber Appellate Tribunal, then the Central Government shall appoint another person in accordance with the provisions of this Act to fill the vacancy and the Proceedings may be continued before the Cyber Appellate Tribunal from the stage at which the vacancy is filled.

**Resignation and removal**

54. (1) The Presiding Officer of a Cyber Appellate Tribunal may, by notice in writing under his hand addressed to the Central Government, resign his office:

Provided that the said Presiding Officer shall, unless he is permitted by the Central Government to relinquish his office sooner, continue to hold office until the expiry of three months from the date of receipt of such notice or until a person duly appointed as his successor enters upon his office or until the expiry of his term of office, whichever is the earliest.

- 2) The Presiding Officer of a Cyber Appellate Tribunal shall not be removed from his office except by an order by the Central Government on the ground of Proved misbehavior or incapacity after an inquiry made by a judge of the supreme Court in which the Presiding Officer concerned has been informed of the charges against him and given a reasonable opportunity of being heard in respect of these charges.
- 3) The Central Government may, by rules, regulate the procedure for the investigation of misbehavior or incapacity of the aforesaid Presiding Officer.

**Order constituting Appellate Tribunal to be final and not to invalidate its proceedings**

55. No order of the Central Government appointing any person as the Presiding Officer of a Cyber Appellate Tribunal shall be called in question in any manner and no act or proceeding before a Cyber Appellate Tribunal shall be called in question in any manner on the ground merely of any defect in constitution of a Cyber Appellate Tribunal.

**Staff of the Cyber Appellate Tribunal**

56. (1) The Central Government shall provide the Cyber Appellate Tribunal with such officers and employees as that Government may think fit.
- 2) The officer and employees of the Cyber Appellate Tribunal shall discharge their functions under general superintendence of the Presiding Officer.
- 3) The salaries and allowances and other conditions of the service of the officers and employees of the Cyber Appellate Tribunal shall be such as may be prescribed by the Central Government.



### **Appeal to Cyber Regulations Appellate Tribunal**

57. (1) Save as provided in sub-section (2), any person aggrieved by an order made by an adjudicating officer under this Act may prefer an appeal to a Cyber Appellate Tribunal having jurisdiction in the matter.

2) No appeal shall lie to Cyber Appellate Tribunal from an order made by an adjudicating officer with the consent of the parties.

3) Every appeal under sub-section (1) shall be filed within a period of forty-five days from the date on which a copy of the order made by the adjudicating officer is received by the person aggrieved and it shall be in such form and be accompanied by such fee as may be prescribed:

Provided that the Cyber Appellate Tribunal may entertain an appeal after the expiry of the said period of forty -five days if it is satisfied that there was sufficient cause fo0r not filing it within that period.

4) On receipt of appeal under sub-section (1), the Cyber Appellate Tribunal may, after giving the parties to the appeal, an opportunity of being heard, pass such orders thereon as it thinks fit, confirming, modifying or setting aside the order appealed against.

5) The Cyber Appellate Tribunal shall send a copy of every order made by it to the parties to the appeal and to the concerned adjudicating officer.

6) The appeal filed before the Cyber Appellate Tribunal under sub-section (1) shall be dealt with by it as expeditiously possible endeavour shall be made by it to dispose of the appeal finally within six months from the date of receipt of the appeal.

### **Procedure and powers of the Cyber Appellate Tribunal**

58. (1) The Cyber Appellate Tribunal shall not be bound by the procedure laid down by the Code of Civil Procedure, 1908 but shall be guided by the principles of natural justice and, subject to the other provisions of this Act and of any rules, the Cyber Appellate Tribunal shall have power to regulate its own procedure including the place at which it shall have its sittings.

- 2) The Cyber Appellate Tribunal shall have, for the purposes of discharging their functions under this Act, the same powers as are vested in a civil court under the Code of Civil Procedure, 1908, while trying suit, in respect of the following matters, namely-
  - a) summoning and enforcing the attendance of any person and examining him on oath;
  - b) requiring the discovery and production of documents or other electronic records;
  - c) receiving evidence on affidavits;
  - d) issuing commissions for the examination of witness or documents;
  - e) reviewing its decisions;
  - f) dismissing an application for default or deciding it ex- parte;
  - g) any other matter which may be prescribed.
- 3) Every proceeding before the Cyber Appellate Tribunal shall be deemed to be a judicial proceeding within the meaning of sections 193 and 228, and for the purposes of section 196 of the Indian Penal Code and the Cyber Appellate Tribunal shall be deemed to be a civil court for the Purposes of section 195 and Chapter XXVI of the Code of Criminal Procedure, 1973.

**Right to legal representation**

59. The appellant may either appear in person or authorize one or more legal PR actioners or any of its officers to present his or its case before the Cyber Appellate Tribunal.

**Limitation**

60. The provisions of the Limitation Act, 1963, shall, as far as may be, apply to an appeal made to the Cyber Appellate Tribunal.

**Civil court not to have jurisdiction**

61. No court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which an adjudicating officer appointed under this Act or the Cyber Appellate Tribunal constituted under this Act is empowered by or under this Act to determine and no injunction shall

be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

### **Appeal to high court**

62. Any person aggrieved by any decision or order of the Cyber Appellate Tribunal may file an appeal to the High Court within sixty days from the date of communication of the decision or order of the Cyber Appellate Tribunal to him on any question of fact or law arising out of such order:

Provided that High Court may, if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal within the said period, allow it to be filed within a further period not exceeding sixty days.

### **Compounding of contraventions**

63. (1) Any contravention under this Chapter may, either before or after the institution of adjudication proceedings, be compounded by the Controller or such other officer as may be specially authorized by him in this behalf or by the adjudicating officer. As the case may be, subject to such conditions as the controller or such other officer or the adjudicating officer may specify:

Provided that such sum shall not, in any case exceed the maximum amount of the penalty which may be imposed under this Act for the contravention so compounded.

2) Nothing in sub-section (1) shall apply to a person who commits the same or similar contravention within a period of three years from the date on which the first contravention, committed by him, was compounded.

**Explanation-** For the purposes of this sub-section, any second or subsequent contravention committed after the expiry of period of three years from the date on which the contravention was previously compounded shall be deemed to be a first contravention.

3) Where any contravention has been compounded under sub-section (1), no proceeding or further proceeding, as the case may be,

shall be taken against the person guilty of such contravention in respect of the contravention so compounded.

### **Recovery of penalty**

64. A penalty imposed under this Act, if it is not paid, shall be recovered as an arrear of land revenue and the licence or the Digital Signature Certificate, as the case may be, shall be suspended till the penalty is paid.

## **CHAPTER XI**

### **Offences**

#### **Tampering with computer source documents**

65. Whoever knowingly or intentionally conceals, destroys or alters or intentionally or knowingly causes another to conceal, destroy or alter any computer source code used for a computer, computer programme, computer system or computer network, when the computer source code is required to be kept or maintained by law for the time being in force, shall be punishable with imprisonment up to three years, or with fine which may extend up to two lakh rupees, or with both.

**Explanation-** For the purposes of this section, "computer source code" means the listing of programmes, commands, design and layout and programme analysis of computer resource in any form.

#### **Publishing of information which is obscene in electronic form**

66. Whoever publishes or transmits or causes to be published in the electronic form, any material which is lascivious or appeals to prurient interest or if its effect is such as to tend deprave and corrupt person who are likely, having regard to all relevant circumstances, to read, see or hear the matter contained or embodied in it, shall be punished on first conviction with imprisonment of either description for a term which extend to fifty thousand rupees.

#### **Powers of the controller to give directions**

67. (1) The Controller may, by order, direct a Certifying Authority or any employee of such authority to take such measures or cease carrying on such activities as specified in the order if those are

necessary to ensure compliance with the provisions of this Act, rules or any regulations made thereunder.

- 2) Any person who fails to comply with any order under sub-section (1) shall be guilty of an offence and shall be liable on conviction to imprisonment for a term not exceeding three years or to a fine not exceeding two lakh rupees or to both.

**Directions of Controller to subscriber to extend facilities to decrypt information.**

68. (1) If the Controller is satisfied that it is necessary or expedient so to do in the interest of the sovereignty or integrity of India, the security of the State, friendly relations with foreign States or public order or for preventing incitement to the commission of any cognizable offence, for reasons to be recorded in writing, by order, direct any agency of the Government to intercept any information transmitted through any computer resource.
- 2) The subscriber or any person in charge of the computer resource shall, when called upon by any agency which has been directed under sub-section (1), extend all facilities and technical assistance to decrypt the information.
- 3) The subscriber or any person who fails to assist the agency referred to in sub-section (2) shall be punished with an imprisonment for a term which may extend to seven years.

**Protected system**

69. (1) The appropriate Government may, by notification in the Official Gazette, declare that any computer, computer system or computer network to be a protected system.
- 2) The appropriate Government may, by order in writing, authorize the persons who are authorized to access protected system notified under sub-section (1).
- 3) Any person who secures access or attempts to secure access to a protected system in contravention of the provisions of this section shall be punished with imprisonment of wither description for a term which may extend to ten years and shall also be liable to fine.

### **Penalty for misrepresentation**

70. Whoever makes any misrepresentation to, or suppresses any material fact from, the Controller or the Certifying Authority for obtaining any licence or Digital signature Certificate, as the case may be, shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

### **Breach of confidentiality and privacy**

71. Save as otherwise provided in this Act or any other law for the time being in force, an person who, in pursuant of any of the powers conferred under this Act, rules or regulations made thereunder, has secured access to any electronic record book register, correspondence, information, document or other material without the consent of the person concerned discloses such electronic record, book, register, correspondence, information, document or other material to any fine which may extend to one lakh rupees, or with both.

### **Penalty for publishing digital signature certificate false in certain particulars**

72. (1) No person shall publish a Digital signature Certificate or otherwise make it available to any other person with the knowledge that-

- a) the Certifying Authority listed in the certificate has not issued it;
- or
- b) the subscriber listed in the certificate has not accepted it; or
- c) the certificate has been revoked or suspended,

unless such publication is for the purpose of verifying a digital signature created prior to such suspension or revocation.

2) Any person who contravenes the provisions sub-section (1) shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

### **Publications for fraudulent purpose**

73. Whoever knowingly creates, publishes or otherwise makes available a Digital signature Certificate for any fraudulent or unlawful purpose

shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

**Act to apply for offences or contraventions committed outside India.**

74. (1) Subject to the provisions of sub-section (2), the provisions of this Act shall apply also to any offence or contravention committed outside India by any person irrespective of his nationality.

2) For the purposes of sub-section (1), this Act shall apply to an offence or contravention committed outside India by any person if the act or conduct constituting the offence or contravention involves a computer, computer system or computer network located in India.

**Confiscation**

75. Any computer, computer system, floppies, compact disk, tape drives or any other accessories related thereto, in respect of which any provision of this Act, rules, orders of regulations made thereunder has been or is being contravened, shall be liable to confiscation:

Provided that where it is established to the satisfaction of the court adjudicating the confiscation that the person in whose possession, power or control of any such computer, computer system, floppies, compact disk, tape drives or any other accessories relating thereto is found is not responsible for the contraventions of this Act, rules, orders of regulations made thereunder, the court may, instead of making an order for confiscation of such computer, computer system, floppies, compact disk, tape drives or any other accessories relating thereto, makes such other order authorised by this Act against the person contravening of the provisions of this Act, rules, order or regulations made thereunder as it may think fit.

**Penalties and confiscation not to interfere with other punishments**

76. No penalty imposed or confiscation made under this Act shall prevent the imposition of any other punishment to which the person affected thereby is liable under any other law for the time being in force.

**Power to investigate offences**

77. Notwithstanding anything contained in the Code of Criminal Procedures, 1973, a police officer below the rank of Deputy Superintendent of Police shall investigate any offence under this Act.

## **CHAPTER XII**

### **Network Service Providers not to be Liable in Certain Cases**

78. For the removal of doubts, it is hereby declared that no person providing any service as a network service provider shall be liable under this Act, rules or regulations made thereunder for any third party information or data made available by him if he proves that the offence or contravention was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence, or contravention.

Explanation- For the purposes of this section-

- a) "network service provider" means an intermediary;
- b) "third party information" means any information dealt with by a network service provider in his capacity as an intermediary.

## **CHAPTER XIII**

### **Miscellaneous**

#### **Power of police officer and other officers to enter, search, etc.**

79. (1) notwithstanding anything contained in the Code of Criminal Procedure, 1973, any police officer, not below the rank of a Deputy Superintendent of Police, or any other officer of the Central Government or a state Government authorised by the Central Government in behalf may enter any public place and search and arrest without warrant any person found therein who is reasonably suspected or having committed or of committing or of being about to commit any offence under this Act.

**Explanation-** For the purposes of this sub-section (1), the expression "public place" includes any public conveyance, any hotel, any shop or any other place intended for use by , or accessible to public.

- 2) Where any person is arrested under sub-section (1), by an officer other than police officer, such officer shall, without unnecessary delay, take or send the person arrested before a magistrate having



jurisdiction in the case or before the officer-in-charge of a police station.

- 3) The provisions of the Code of Criminal Procedure, 1973, shall, subject to the provisions of this section, apply, so far as may be, in relation to any entry, search or arrest, made under this section.

**Act to have overriding effect**

80. The provision of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force.

**Controller, Deputy Controller and Assistant Controllers to be a public servants**

81. The Presiding Officer and other officers and employees of a Cyber Appellate Tribunal, the Controller, the Deputy Controller and the Assistant Controllers shall be deemed to public servants within the meaning of section 21 of the Indian Penal Code.

**Power to the directions**

82. The central Government may give directions to the Government of a state as to the carrying into execution in the state of any of the provisions of this Act.

**Protections action taken in good faith**

83. No suit, prosecution or other legal proceeding shall lie against the Central Government, the State Government, the controller or any person acting on behalf of him. The Presiding Officer, adjudicating officers and the staff of the Cyber Appellate Tribunal for anything which is good faith done or intended to be done in pursuance of this Act or any rule, regulation or order made there under.

**Offences by companies**

84. (1) where a person committing a contravention of any of the provisions of this Act or of any rule,.....

Provided that nothing contained in this sub section shall render any such person liable to punishment if he proves that the contravention took place without his knowledge or that he exercised all due diligence to prevent such contravention.

- 2) Notwithstanding anything contained in sub-section (1), where a contravention of any of the provisions of this Act or of any rule, direction or order made thereunder has been committed by a company and it is proved that the contravention has taken place with the consent or connivance of, or is attributable to any neglect on the part of, any director, manager, secretary or any other officer of the company, such director, manager, secretary, or other officer shall be deemed to be guilty of contravention and shall be liable to be proceeded against and punished accordingly.

**Explanation-** For the purposes of this section-

- i) "company" means any body corporate and includes a firm or other associations of individuals; and
- ii) "director". In relation to firm, means, a partner in firm

#### **Removal of difficulties**

85. (1) If any difficulty arises in giving effect to the provisions of this Act, the Central Government may, by order published in the Official Gazette, make such provisions not inconsistent with the provisions of this Act as appear to it be necessary or expedient for removing the difficulty:

Provided that no order shall be made under this section after the expiry of a period of two years from the commencement of this Act.

- 2) Every order made under this section shall be laid, as soon as may be after it is made, before each House of Parliament.

#### **Power of Central Government to make rules**

86. (1) The Central Government may, by notification in the Official Gazette, make rules to carry out the provisions of this Act.

- 2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely-
  - a) the manner in which any information or matter may be authenticated by means of digital signature under section 5;
  - b) the electronic form in which filing, issue, grant or payment shall be effected under sub-section (1) of section 6;

- c) the manner and format in which electronic records shall be filed, created or issued and the method of payment under sub-section (2) of section 6;
- d) the matters relating to type of digital signature, manner and format in which it may be affixed under section 10;
- e) the security procedure for the purpose of creating secure electronic record and secure digital signature under section 16;
- f) other standards to be observed by Controller under clause (b) of sub-section (2) of section 16;
- g) the requirements which an applicant must fulfill under sub-section (2) of section 21;
- h) the period of validity of licence granted under clause (a) of sub-section (3) of section 21;
- i) the form in which an application for licence may be made under sub-section (1) of section 22;
- j) the amount of fees payable under clause (c) of sub-section (2) of section 22;
- k) such other documents which shall accompany an application for licence under clause (d) of sub-section (2) of section 22;
- l) the form and the fee for renewal of a licence and the fee payable thereopf under section 23;
- m) .....to section 23;
- n) the form in which application for issue of Digital Signature Certificate may be made under sub-section (1) of section 35;
- o) the fee to be paid to the Certifying Authority for issue of a Digital Signature Certificate under sub-section (2) of section 35;
- p) the manner in which the adjudicating officer shall hold inquiry under sub-section (1) of section 46;
- q) the qualification and experience which the adjudicating officer shall possess under sub-section (2) of section 46;
- r) the salary, allowances and the other terms and conditions of service of the Presiding Officer under section 52;
- s) the procedure for investigation of misbehavior or in capacity of service of Presiding Officer under section 52;

- t) the salary and allowances and other conditions of service of other officers and employees under sub-section (3) of section 56;
  - u) the form which appeal may be filed and the fee thereof under sub-section (3) of section 57;
  - v) any other power of a civil court required to be prescribed under clause (g) of sub-section (2) of section 58; and
  - w) any other matter which is required to be, or may be, prescribed.
- 3) Every notification made by the Central Government under clause (f) of sub-section (4) of section 1 and every rule made by it shall be laid, as soon as may be after it is made, before House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive session, and if, before the expiry of the session immediately following the session or in two or more successive sessions aforesaid, both Houses agree in making any modification in the notification or the rule or both Houses agree that the notification or the rule should not be made, the notification or the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that notification or rule.

#### **Constitution of Advisory Committee**

87. (1) The Central Government shall, as soon as may be after the commencement of this Act, constitute a committee called the Cyber Regulations Advisory Committee.
- 2) The Cyber Regulations Advisory Committee shall consist of a chairperson and such member of other official and non-official members representing the interest principally affected or having special knowledge of the subject matter as the Central Government may deem fit.
  - 3) The Cyber Regulations Advisory Committee shall advise-
    - a) the Central Government either generally as regard any rules or for any other purpose connected with this Act;
    - b) the controller in framing the regulations under this Act.

- 4) There shall be paid to the non-official members of such committee such travelling and other allowances as the Central Government may fix.

**Power of Controller to make regulations**

88. The Controller may, after consultation with the Cyber Regulations Advisory Committee and with the previous approval of the Central Government by notification in the Office Gazette, make regulations consistent with this Act and the rules made thereunder to carry out the purposes of this Act.

2) ...of the foregoing power, such regulations may provide for all or any of the following matters, namely:-

- a) the particulars relating to maintenance of data-base containing the disclosure record of every Certifying Authority under clause (m) of section 18;
- b) the conditions and restrictions subject to which the Controllers may recognise any foreign Certifying Authority under sub-section (1) of section 19;
- c) the terms and conditions subject to which a licence may be granted under clause (c) of sub-section (3) of section 21;
- d) other standards to be observed by Certifying Authority shall under clause (d) of section 30;
- e) the manner in which the Certifying Authority shall disclose the matters specified in sub-section (1) of section 34;
- f) the particulars of statement which shall accompany an application under sub-section (3) of section 35.

3) Every regulation made under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive session aforesaid, both Houses agree in making any modification in the regulation or both Houses agree, that the regulation should not be made, the regulation shall thereafter have effect only in such modified form or be of no effect, as the case may be, so, however, that any such

modification or annulment shall be without prejudice to the validity of anything previously done under that regulation.

**Power of State Government to make rules**

89. (1) The State Government may, by notification in the Official Gazette, make Power of state rules to carry out the provisions of this Act.
- 2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely-
- a) the electronic form in which filing, issue, grant, receipt or payment shall be effected under sub-section (1) of section 6;
  - b) for matters specified in sub-section (2) of section 6;
  - c) any other matter by which is required to be provided by rules by the State Government.
- 3) Every rule made by the State Government under this section shall be laid, as soon as may be after it is made, before each House of the state Legislature where it consist of two Houses, or where such Legislature consists of one House, before that House.

Amendment of Act 45 of 1860

90. The Indian Penal Code shall be amended in the manner specified in the First schedule to this Act.

Amendment of Act 1 of 1872

91. The Indian Evidence Act, 1872 shall be amended in the manner specified in the Second schedule to this Act.

Amendment of Act 18 of 1891

92. The Banker's Book Evidence Act, 1891 shall be amended in the manner specified in the Third schedule to this Act

Amendment of Act 2 of 1934

93. The Reserve Bank Of India Act, 1934 shall be amended in the manner specified in Fourth Schedule to this Act.

**THE FIRST SCHEDULE**

**(See Section 90)**

**Amendments to the Indian Penal Code**

**(45 of 1860)**

1. After section 29, the following section shall be inserted, namely-  
...assigned to it in clause (so of sub-section (1) of section 2 of the information Technology Act,1999”.
2. In section 167, for the words “such public servant, charged with the preparation or translation of any document ,frames or translates that document”, the words “such public servant; charged the preparation or translation of any document or electronic records, frames, prepares or translates that document or electronic record” shall be substituted.
3. In section 172, for the words “produce a document in Court of Justice”, the words “produce a document or electronic record in a Court of Justice” shall be substituted.
4. In section 173, for the words “to produce a document in a Court of Justice”, the words “to produce a document or electronic record in a Court of Justice” shall be substituted.
5. In section 175, for the words “document” at both the places where it occurs, the words “document electronic record” shall be substituted.
6. In section 192, for the words “makes any false entry in any book or record, or makes any document containing a false statement”, the words “makes any false entry in book or record, or electronic record or makes any document or electronic record containing a false statement” shall be substituted.
7. In section 204, for the words “document” at both the places where it occurs, the words “document or electronic record” shall be substituted.
8. in section 463, for the words “Whoever makes any false documents or of part of a document with intent to cause damages or injury”, the words “Whoever makes any false documents or false electronic record or part of document or electronic record, with intent to cause damage or injury” shall be substituted.
9. In section 464,-
  - a) for the portion beginning with the words “A person is said to make a false document” and ending with the words “by reason of

deception practiced upon him, he does not know the contents of the document or the nature of the alteration” the following shall be substituted, namely-

“A person is said to make a false document or false electronic record-

First-Who dishonestly or fraudulently-

- a) makes, signs, seals or executes a document or part of a document;
- b) makes or transmits any electronic record or part of a electronic record;
- c) affixes any digital signature on any electronic record;
- d) makes any mark denoting the execution of it document or the authenticity of the digital signature,

with the intention of causing it to be believed that such document or a part of a document electronic record or digital signature was made, signed, sealed, executed, transmitted or affixed by or by the authority or a person by whom or y whose authority he knows that it was not made, signed, sealed, executed or affixed; or

secondly-Who, without lawful authority, dishonestly or fraudulently, by cancellation or otherwise, alters a document or an electronic record in any material part thereof, after I has been made, executed or affixed with digital signature either by himself or by any other person, whether such person be living or dead at the time of such alteration; or

Thirdly-Who dishonestly or fraudulently causes any person to sign, seal, execute or alter a document or an electronic record or to affix his digital signature on any electronic record knowing that such person by reason of unsoundness of mind of document of electronic record or the nature of the alteration.

- b) after Explanation 2, the following Explanation shall be inserted at the end, namely-

Explanation 3- For the purposes of this section, the expressing, “affixing digital signature” shall have the meaning assigned to it in clause (a) of sub-section (1) of section 2 of the Information Technology Act,1999.



10. In section 466-

- a) for the words "Whoever forges a document", the words "Whoever forges a document or an electronic record" shall be substituted;
- b) the following Explanation shall be inserted at the end, namely-

**Explanation-** For the purposes of this section, "register" includes any list, data or record of any entries maintained in the electronic form as defined in clause (r) of sub-section (1) of section 2 of the Information Technology Act, 1999.

11. In section 468, for the words "document forged", the words "document or electronic record forged" shall be substituted.

12. In section 469, for the word "intending that the document forged", the words "intending that the document or electronic record forged" shall be substituted.

13. In section 470, for the word "document" both the places where it occurs, the words "document or electronic records" shall be substituted.

14. In section 471, for the word "document" wherever it occurs, the words "document or electronic record forged" shall be substituted.

15. In section 474, for the portion beginning with the words "Whoever has in his possession any document" and ending with the words "if the document is one of the description mentioned in section 466 of this Code", the following shall be substituted, namely.

"whoever has in his possession any document or electronic record, knowing the same to be forged and intending that the same shall fraudulently or dishonestly be used as a genuine, shall, if the document or electronic record is one of the description mentioned in section 466 of this code."

16. In section 476, for the words "any document", the words "any document or electronic records" shall be substituted.

17. In section 477, for the words, "book, paper, writing", at both the place where they occur, the words "book, electronic record, paper, writing" shall be substituted.

## **THE SECOND SCHEDULE**

**(see section 91)**

## **Amendments to the Indian Evidence Act, 1872**

**(1 of 1872)**

1. In section 3-
  - a) in the definition of "Evidence", for the words "all documents produced for the inspection of Court", the word "all document including electronic records produced for the inspection of the court" shall be substituted.
  - b) after the definition of "India", the following shall be inserted namely:- the expressions "Certifying Authority digital signature", "Digital Signature Certificate", "electronic form", "electronic records", "secure digital signature" and "subscriber" shall have the meanings respectively assigned to them in the information technology Act, 1999.
2. In section 17, for the word "oral or documentary", the word "oral documentary or contained in electronic form" shall be substituted.  
When oral admission as to contents of electronic records are relevant.
3. After section 22, the following section shall be inserted, namely -  
"22 A, Oral admission as to the contents of electronic.
4. In section 34, for the word "Entries in the books of accounts", the word "Entries in the books of account, including those maintained in an electronic form" shall be substituted.
5. In section 35, for the word "record", in both the places where it occur, the word "record or an electronic record" shall be substituted.

What evidence to be given when statement forms part of a conversation, document electronic record, book or series of letter or papers.

**6. For section 39, the following section shall be substituted, namely -**

"39. When any statement of which evidence is given forms part of a longer statement, or of a conversation or part of an isolated document, or is contained in a document which forms part of a book, or is contained in part of electronic record or of a connected series of letters or papers, evidence shall be given of so much and no more of the statement, conversation, document, electronic record, book or series of letters or papers as the Court considers necessary in that particular case

to the full understanding of the nature and effect of the statement and of the circumstances under which it was made.”

**Opinion as to digital signature when relevant**

7. After section 47, the following section shall be inserted; namely -

“47A. When the Court has to form an opinion as to the digital signature of any person , the opinion of the Certifying Authority which has issued the Digital Signature Certificate is a relevant fact.”

8. In section 59, for the words “contents of documents” the words “contents of documents or electronic records” shall be substituted.

**Special provisions as to evidence relating to electronic record**

9. After section 65, the following section shall be inserted; namely -

65. A. The contents of electronic records may be proved in accordance with the provisions of section 65B.

Admissibility of electronic records

65B.(1) Notwithstanding anything contained in this Act, any information contained in an electronic record which is printed on a paper, stored, recorded or copied in optical or magnetic media produced by a computer(hereinafter referred to as the computer output) shall be deemed to be also a document, if the conditions mentioned in this section are satisfied in relation to the information and computer in question and shall be admissible in any proceedings, without further proof or production of the original, as evidence of any contents of the original or of any fact stated therein of which direct evidence would be admissible.

2) The conditions referred to in sub-section (1) in respect of a computer Output shall be the following, namely-

a) the computer output containing the information was produced by the computer during the period over which the computer was used regularly to store or process information for the purpose of any activities regularly carried on over that period by the person having lawful control over the use of the computer.

b) during the said period, information of the kind contained in the electronic reform or of the kind from which the information so

- contained is derived was regularly fed into the computer in the ordinary course of the said activities;
- c) throughout the material part of the said period the computer was operating properly or, if not, then in any respect of any period in which it was not operating properly or was out of operation during that part of the period, was not such as to affect the electronic reform or the accuracy of the contents; and
  - d) the information contained in the electronic record reproduces or is derived from such information fed into the computer in the ordinary course of the said activities.
- 3) Where over any period, the function of storing or processing information for the purposes of any activities regularly carried on over that period as mentioned in clause (a) of sub-section (2) was regularly performed by computer, whether -
- a) by a combination of computer operating over that period; or
  - b) by different computer operating in succession over that period; or
  - c) by different combinations of computer operating in succession over that period; or
  - d) in any other manner involving the successive operation over that period, in whatever order, of one or more computer and one or more combination of computer,
- all the computer used for that purpose during that period shall be treated for the purposes of this section as constituting a single computer, and reference in the section to a computer shall be construed accordingly.
- 4) In any proceeding where it is desired to give a statement in evidence by virtue of this section, a certificate doing any of the following things, that is to say,
- a) identifying the electronic record containing the statement and describing of that manner in which it was produced;
  - b) giving with particulars of any device involved in the production of the electronic record as may be appropriate for the purpose

of showing that the electronic record was produced by a computer;

c) dealing with any of the matters to which the condition mentioned in sub-section (2) relate, and purporting to be signed by a person occupying a responsible official position in relation of the operation of the relevant device or the management of the relevant activities (whichever is appropriate) shall be evidence of the matter stated in the certificate; and for the purposes of this sub- section it shall be sufficient for a matter to be stated to the best of the knowledge and belief of the person stating it.

5) For the purposes of this section-

a) information shall be taken to be supplied to a computer if it is supplied there to in any appropriate form and whether it is so supplied directly or (with or without human intervention) by means of any appropriate equipment;

b) whether in the course of action carries on by any official, information is supplied with a view to its being stored or processed for the purposes of those activities by computer operated otherwise than in the course of those activities, that information, if duly supplied to that computer, shall be taken to be supplied to it in the course of those activities;

c) a computer output shall be taken to have been produced by a computer whether it was produced by it directly or (with or without human intervention) by means of any appropriate equipment.

Explanation - For the purposes of this section any reference to information being derived from other information shall be a reference to its being derived therefrom by calculation, comparison or any other process.

10. After section, 67 the following section shall be inserted, namely-

**Proof as to digital signature**

"67A. Except in the case of secure digital signature, if the digital signature of any subscriber is alleged to have been affixed to an electronic record the fact that such digital signature is the digital signature of the subscriber must be proved"

11. After section 73, the following section shall be inserted, namely-

**Proof as to verification of digital signature**

"73A. In order to ascertain whether a digital signature is that of the person by whom it purports to have been affixed, the Court may direct-

- a) that person or the Controller or the Certifying authority to produce the Digital Signature Certificate;
- b) any other person to apply the public key listed in the Digital Signature Certificate and verify the digital signature purported to have affixed by that person."

**Explanation** - For the purposes of this section, "Controller" means the Controller appointed under sub- section (1) of section 17 of the Information Technology Act, 1999.

presumption as to gazettes in electronic frogs

12. After section 81, the following section shall be inserted, namely -

"81A. The Court shall presume the genuineness of every electronic record purporting to be the Official Gazette, or purporting to be electronic record directed by any law to be kept by any person, if such electronic record is kept substantially in the form required by law and is produced from proper custody."

13. After section 85, the following section shall be inserted, namely-

Presumption as to electronic agreements

"85A. The Court shall presume that every electronic record purporting to be an agreement containing the digital signatures of the parties was so concluded by affixing the digital signature of the parties.

**presumption as to electronic records and digital signatures**

- 85 B. (1) In any proceedings involving a secure electronic record, the Court shall presume, unless contrary is proved, that the secure electronic record has not been altered since the specific point of time to which the secure status relates.
- 2) In any proceedings, involving secure digital signature, the Court shall unless the contrary is proved that -
- a) the secure status digital signature is affixed by subscriber with the intention of signing or approving the electronic record;
  - b) except in the case of a secure electronic record or a secure digital signature, nothing in the section shall create any presumption relating to authenticity and integrity of the electronic record or any digital signature.

**Presumption as to Digital Signatures Certificates**

85C. The Court shall presume, unless contrary is proved, that the information listed in a Digital Signature Certificate is correct, except for information specified as subscriber information which has not been verified, if the certificate was accepted by the subscriber.

**Presumption as to electronic messages**

14. After section 88, the following section shall be inserted, namely-

88A. The Court may presume that an electronic message forwarded by the originator through an electronic mail server to the addressee to whom the message purports to be addressed corresponds with the message as fed into his computer for transmission; but the Court shall not make any presumption as to the person by whom such message was sent.

**Explanation** - for the purposes of this section, the expression "addressee" and "originator" shall have the same meanings respectively assigned to them in clauses (b) and (z) of sub-section (1) of section 2 of the Information Technology Act, 1999.

**Presumption as to electronic records five years old**

15. After section 90, the following section shall be inserted, namely-

90A. Where any electronic record, purporting or proved to be five years old, is produced from any custody which the Court in the particular case considers proper, the Court may presume that digital signature which purports to be the digital signature of any particular person was so affixed by him or any person authorised by him in this behalf.

**Explanation** - Electronic record are said to be in proper custody if they are in the place in which, and under the case of the person with whom, they naturally be; but no custody is improper if it is proved to have had a legitimate origin, or the circumstances of the particular case are such as to render such as origin probable.

This Explanation applies also to section 81 A.

Production of documents or electronic record which another person, having possession could refuse to produce.

16. For section 131, the following section shall be substituted, namely -

131. No one shall be compelled to produce document in his possession or electronic records under his control, which any other person would be entitled to refuse to produce if they were in the possession or control, unless such last- mentioned person consents to their production.

### **THE THIRD SCHEDULE**

**(see section 92)**

### **BANKER' BOOK EVIDENCE ACT, 1891**

**(18 OF 1891)**

1. In section 2 -

a) for clause (3), the following clause shall be substituted, namely -

(3) "banker's books" include ledgers, day - books , cash - book, account- books and all other books used in the ordinary business of a bank whether kept in the written form or as printouts of data stored in a floppy, disc, tape or any other form of electro- magnetic storage device;

b) for clause (8), the following clause shall be substituted, namely-

(8) "certified copy" means when the books of a bank -

a) are maintained in written form, a copy of any entry in such books together with certificate written at the foot of such copy that it is a



true copy of such entry, that such entry contained in one of the ordinary books of the bank and was made in the usual and ordinary course of business and that such book is still in the custody of the bank, and where the copy was obtained by a mechanical or other process which in itself ensured the accuracy of the copy, a further certificate of the effect, but where the book from which such copy was prepared has been destroyed in the usual course of the bank's business after the date on which the copy had been so prepared, a further certificate to that effect, each such certificate to that effect, each such certificate to that effect, each such certificate being dated and subscribed by the principal accountant or manager of the bank with his name and official title; and

- b) consist of printouts of data stored in an electromagnetic data storage device, a printout of such entry or a copy of such printout together with such statement certified in accordance with provisions of section 2A.

**Conditions in the print out**

- 2. After section 2, the following section shall be inserted, namely -
  - 2A. printout of entry or a copy of printout referred to in sub-section (8) of section 2 shall be accompanied by the following, namely-
    - a) certificate to the effect that it is a printout of such entry or a copy of such printout by the principal accountant or branch manager; and
    - b) a certificate by a person in charge of computer system containing a brief description of the computer system and the particulars of-
      - A) the safeguards adopted by the system to ensure that data is entered or any other operation performed only by authorized persons;
      - B) the safeguards adopted to prevent and detect unauthorized change of data.
      - C) the safeguards available to retrieve data that is lost due to systemic failure or any other reasons;

D) The manner in which data is transferred from the system to removable Media like floppies, discs, tapes or other electro-magnetic data storage devices;

E) the mode of verification in order to ensure that data had been accurately transferred to such removable media;

F) the mode of identification of such data storage devices.

G) the arrangements for the storage and custody of such storage devices.

H) the safeguards to prevent and detect any tampering with the system; and

I) any other factor which all vouch for the integrity and accuracy of the system.

J) a further certificate from the person in-charge of the computer system to the effect that best of his knowledge and belief that the computer system operated properly at the material time, he was provided with all the relevant data and the printout in question represents currently, or is appropriately derived from, the relevant data

### **The Forth Schedule**

**(See Section 93)**

### **Amendment of the Reserve Bank of India Act, 1934**

**(2 of 1934)**

In the Reserve Bank of India Act, 1934 in section 58, in sub-section (2), clause (p), the following clause shall be inserted, namely (pp) the regulation of fund transfer through electronic means between the banks or between the banks and other financial institutions referred to in clause (c) of section 15-I. including the laying down of the conditions subject to which banks and other financial institutions shall participate in such fund transfers, obligations of the participants in such fund transfers.

### **Statement of Objects and Reasons**

New communication system and digital technology has made dramatic change in the way we live. A revolution is occurring in the way people transact business. Businesses and consumers are increasingly using computers to create, transmit and store information in the electronic form instead of traditional paper documents. Information stored in

electronic form has many advantages. It is cheaper, easier to store, retrieve and speedier to communicate. Although people are aware of these advantages they are reluctant to conduct business or conclude any transaction in the electronic form due to lack of appropriate legal framework. The two principal hurdles which stand in the way of facilitating electronic commerce and electronic governance are the requirements as to writing and signature for legal recognition. At present many legal provisions assume the existence of paper based records and documents and records which should bear signatures. The law of evidence is traditionally based upon paper to facilitate e-commerce, the need for legal changes have become an urgent necessity. International trade through the medium of e-commerce is growing rapidly in the past few years and many countries have switched over from traditional paper based commerce to e-commerce.

2. The United Nation Commission of International Trade Law (UCTRAL) adopted the Model Law on Electronic Commerce in 1996. The General Assembly of United Nation by its Resolution No. 51@162 dated 30<sup>th</sup> January, 1997 recommended that all State should give favorable consideration to the said Model Law when they enact or revise their laws. The Model Law provides for equal legal treatment of the user of electronic communication and paper based communication. Pursuant to a recent declaration by member the World Trade Organisation is likely to form a work programme to handle its work in this area including the possible creation of multilateral trade deals through the medium of electronic commerce.
3. There is a need for bringing in suitable amendments in the existing laws in our country to facilitate e- commerce. It is therefore, proposed to provide for legal recognition of electronic record and digital signature, This will enable the conclusion of contracts And the creation of right and obligation provide for a regulatory regime to supervise the Certifying Authorised issuing Digital Signature certificates. To prevent the possible misuse arising out of transaction and other dealings concluded over the electronic medium it is also

proposed to create civil and criminal liabilities for contravention of the provision of the proposed legislation.

4. With a view to facilitate Electronic Governance, it is proposed to provide for the use and acceptance of electronic records and digital signatures in the Government offices and its agencies. This will make the citizens interaction with the Governmental offices hassle free.
5. It is also proposed to make consequential amendments in the Indian Penal Code and the Indian Evidence Act, 1872 to provide for necessary changes in the various provisions which deal with offences relating to documents and paper based transactions relating to documents and paper based transactions. It is also proposed to amend the Reserve Bank of India Act, 1934 to facilitate electronic fund transfer between the financial institutions and bank and the Bankers Book Evidence Act, 1991 to give legal sanctity for books of account maintained in the electronic form by the banks.
6. The proposal was also circulated to the state Government. They have supported the proposed legislation and have also expressed urgency for such legislation.
7. The bill seeks to achieve the above objectives.

#### **Note on Clauses**

Clause 2- This clause defines the various expressions occurring in the Bill.

Clause 3- This clause provides the conditions subject to which an electronic record may be authenticated by means of affixing digital signature. The digital signature is created in two distinct steps. Firstly the electronic record is converted into a message digest by using a mathematical function known as "hash function" which digitally freezes the electronic record thus ensuring the integrity of the content of the intended communication contained in the electronic record. Any tampering with the contents of the electronic record will immediately invalidate the digital signature. Secondly, the identity of the person affixing the digital signature is authenticated through the use of a private key which attaches itself to the message digest and which can be verified by anybody who has the public key corresponding to such private key. This will enable

anybody intact or has been tampered with since it was so fixed with the digital signature. It will also enable a person who has a public key to identify the originator of the message.

Clause 4- This clause provides that where any law requires any information of matter should be in the typewriter or printed from then such requirement shall be deemed to be satisfied if it is in an electronic form.

Clause 5- This clause provided for legal recognition of Digital Signature. It shall be authenticated by means of Digital Signature affixed in such manner as may be prescribed by the central government.

Clause 6- This clause lays down the foundation of electronic governance. The filing of any form application or other document, creation or preservation of records, issue or grant of any licence or permit or receipt or payment in Government offices and its agencies may be done through the means of electronic form.

Clause 7- This clause provides for the documents, record or information which has to be retained for any specified period shall be deemed to have been retained if the same is retained in the electronic form.

Clause 8- This clause provide for the publication of rules, regulation and notifications in the Electronic Gazette. Where any law requires the publication of any rule, regulation, order, bye -law, notification or any other matter should be published in the official gazette, then such requirement shall be satisfied if the same is published in and electronic form. It also provides where the official Gazette is published both in the printed as well as in the electronic form, the date of publication of the official Gazette which was first published in any form.

Clause 9- This clause provides for the condition stipulated in section 6,7 and 8 shall not confer any right to insist the document should be accepted in an electronic form by any Ministry or Department of the Central Government or the State Government.

Clause 10- This clause provides for the power to make rules by the Central Government, in respect of Digital Signature.

Clause 11- This clause deals with the attribution of the electronic records to the originator.

Clause 12- This clause provides for the acknowledgement of receipt of an electronic record by various modes.

Clause 13- This clause provides for the time and place of dispatch and receipt of electronic record sent by originator.

Clause 14- This clause provides for the security procedure which has to be applied to an electronic record for being treated as a secure electronic record.

Clause 15- This clause provides for the security procedure to be applied to Digital Signature for being treated as a secure digital signature.

Clause 16- This clause provides for the power of the Central Government to prescribe the security procedure in respect of secure electronic record and secure digital signatures.

Clause 17- This clause provides for the appointment of Controller and officers to regulate the certifying authorities.

Clause 18- This clause provides for the function of the Controller in respect of activities of Certifying Authorised which may be prescribed by regulations.

Clause 19- This clause provides for the power of the controller with the provides for the provides for the power of the controller with the previous approval of the Central Government to grant recognition for foreign Certifying authorities subject to such conditions and restriction as may be imposed by regulations.

Clause 20- This clause provides for the controller shall be acting as reposition of all Digital Signature Certificates issued under the Act. He shall also adhere to certain security procedure to ensure secrecy and privacy of the digital signature and also to satisfy such other standards as may prescribed by the Central Government.

Clause 21- This clause provides that a licence to be issued to a Certifying Authority to issue Digital Signature Certificates by the Controller shall be in such form and shall be accompanied with such fees and other document as may be prescribed by the Central Government Further

the Controller after considering the application either grant the licence or reject the application after giving reasonable opportunity of being heard.

Clause 22- This clause provides that the application for licence shall be accompanied by a certification practice statement and statement including the procedure the procedure with respect to identification of the applicant.

Clause 23- This clause provides that the application for renewal of a licence shall be in such form and accompanied by such fees not exceeding five thousand rupees which may be prescribed by the Central Government.

Clause 24- This clause deals with the procedure for rejection of licence on certain grounds.

Clause 25- This clause provides for suspension for licence on the grounds such as incorrect or false material particulars being mentioned in the application and also on the ground of contravention of any provisions of the Act, Rule, Regulation or order made there under.

Clause 26- This clause provides that the Controller shall publish a notice of suspension or revocation of licence as the case may be in the data base maintained him.

Clause 27- This clause provides that the Controller may in writing authorise the Deputy Controller, Assistant controller or any officer to exercise any of his powers under the Act.

Clause 28- This clause provides that the Controller shall have power to investigate contraventions of the provisions of the Act or the rules or regulations made there under either by himself or through any officer authorized in this behalf.

Clause 29- This clause provides that the controller or any person Authorized by him, if he has reasonable cause to suspect that contravention of the provisions of the Act or the rules or regulations is being committed shall have access to any computer system, data or any other material connected with such system.

Clause 30- This clause provides for the Certifying Authority to follow certain procedure in respect of Digital Signatures.

Clause 31- This clause provides that the Certifying Authority shall ensure that every person employed by him complies with the provisions of the Act, or rules, regulation or orders made thereunder.

Clause 32- This clause provides that the Certifying authority must display its licence at a conspicuous place of the premises in which it carries on its business.

Clause 33- This clause provides that the Certifying Authority whose licence is suspended or revoked shall immediately surrender the licence to the Controller.

Clause 34- This clause provides that every Certifying Authority shall disclose its Digital Signature Certificate which contains public key corresponding to the private key used by that certifying authority and other relevant facts.

Clause 35- This clause deals with the form in which Digital Signature Certificate may issued by a Certifying Authority.

Clause 36- This clause provides for the Certifying Authority to certify while issuing Digital Signature Certificate that it has complied with the provisions of Act, the rules and regulations made thereunder and also with other conditions mentioned in the Digital Signature Certificate.

Clause 37- This clause provides for the suspension of Digital Signature Certificate under certain circumstances. Further, such certificate shall not be suspended for a period of exceeding 15 days unless the subscriber has been given an opportunity of being heard.

Clause 38- This clause provides for the revocation of Digital Signature certificates under certain circumstance. further, such revocation shall not be done unless the subscriber has been given an opportunity of being heard in the matter.

Clause 39- this clause provides that the Certifying Authority shall publish the suspension or revocation of a Digital Signature Certificate in the depository.

Clause 40- This clause provides that the subscriber shall generate a key pair using a secure system.



Clause 41- This clause provides for the circumstance under which a subscriber shall be deemed to have accepted a Digital Signature Certificate.

Clause 42- This clause provides that the subscriber shall exercise all reasonable care to retain control of his private key corresponding to public key.

Clause 43- This clause provides penalty for damage caused to any computer, computer network etc. by introduction of computer virus, unauthorised access and other types mischief. Any person who is found guilty of contravening this section is liable to pay damages by way of compensation not exceeding ten lakh rupees to the person affected thereby.

Clause 44- This clause provides penalty for failure to furnish information, returns, etc. which is required to be furnished by any person under the act which may extend up to one lakh and fifty thousand rupees for each such failure. It further provides for if the failure continues, he shall be liable to a penalty not exceeding five thousand rupees for everyday during which such failure continues.

Clause 45- This clause provides liability to pay a compensation not exceeding twenty-five thousand rupees by a person who contravenes any regulation made under the Act for which no liability has been separately provided under the Act to the person affected by such contravention.

Clause 46- This clause provides for the power to adjudicate contraventions under the Act by an officer not below than the rank of a Director to the Government of India or an equivalent officer of a State Government and for holding an enquiry in the prescribed manner after giving reasonable opportunity of being heard.

Clause 47- This clause provides that while adjudicating the quantum of compensation, the adjudicating officer shall have due regard to amount of gain of unfair, advantage and the amount of loss caused to any person.

Clause 48- This clause provides for establishment of one or more appellate Tribunals to be known as Cyber Regulations Appellate Tribunal.

Further, the central Government by notification specify the matters and places in relation to such Tribunal.

Clause 49- This clause provides for the Cyber Regulations Appellate Tribunal which shall consist of one person only who shall be appointed by notification by the central government.

Clause 50- The clause provides for the qualifications for appointment as a presiding officer of the Tribunal.

Clause 51- This clause provides that the presiding officer shall hold office subject to maximum age limit of 65 years.

Clause 52- This clause provides for the salary and allowances and other terms and conditions of service of the Presiding officer.

Clause 53- This clause provides for filling up of any vacancy occurring in the office of the Presiding Officer of Cyber Regulations Tribunal and also the procedure to be followed in case of casual vacancy.

Clause 54- This clause deals with the procedure for resignation or removal of the Presiding Officer.

Clause 55- The clause provides that no order appointing any presiding officer of shall be called in question merely on the ground of any defect in the constitution of the Tribunal.

Clause 56- This clause provides that the Central Government shall provide such officers for the functioning of the Cyber regulations appellate Tribunal. It empowers the Central Government to frame rules relating to salaries, allowances and other conditions of service of such officers and employees.

Clause 57- This clause provides for appeal by an aggrieved person against an order made by an adjudicating officer to the Cyber appellate Tribunal.

Clause 58- This clause provides for the procedure and powers of the Cyber Appellate Tribunal. The tribunal shall also have the powers of the Civil Court under the Code of Civil Procedure,1908.

Clause 59- This clause provides that the appellant may either appear in person or may be represented by a legal practitioner to present his case before the tribunal.

Clause 60- This clause provides for period of limitation for admission of appeals from the aggrieved persons to the Cyber Appellate Tribuna.

Clause 61- This clause provides that no court shall have jurisdiction to entertain any suitor proceeding in respect of any matter which an adjudicating officer has jurisdiction to determine.

Clause 62- This clause provides for and appeal to the High Court by a aggrieved person from the decision of the cyber appellate Tribunal.

Clause 63- this clause provides that any contravention under the Act Shall be compounded by the controller or adjudication officer either before or after the institution of the adjudication proceedings subject to such conditions he may impose.

Clause 64- This clause provides for punishment with imprisonment up to three years or with a fine which may extend to two lakh rupees or with both \ whoever knowingly or intentionally tampers with the computer source documents.

Clause 66- This clause provides for punishment to whoever transmits or publishes or causes to be published or transmitted, any material which is obscene in electronic form with imprisonment for a term which may extend to two years and with fine which may extend to twenty-five thousand rupees on first conviction and in the event of second or subsequent conviction with imprisonment of either description for a term which may extend to five years and also with fine which may extend to fifty thousand rupees.

Clause 67- This clause provides that the controller may give directions to a certifying authority or any employee of such authority to taken such measures or cease carrying such activities specified in such direction.

Clause 68- This clause empowers the Controller, if he is satisfied that it is necessary or expedient so to do in the interest of sovereignty and integrity of India. the security of the State, friendly relations with foreign States or public order to intercept any information transmitted through any computer system-or computer network.

Clause 69- This clause empowers the appropriate Government by notification to declare any computer, computer system or computer network to be a protected system. Any unauthorised access of such systems will be punishable with imprisonment which may extend to ten years or with fine.

Clause 70- This clause provides that if any person misrepresenting or suppressing any material fact to the Controller or the certifying authority shall be punished with imprisonment for term which may extend two years or with fin which may extend to one lakh rupees or with both.

Clause 71- This clause provides a punishment for breach of confidentiality ad privacy with imprisonment for a term which may extend to two years or with fine which may extend to one lakh rupees or with both.

Clause 72- This clause provides a punishment for publishing a Digital Signature Certificate false in material Particulars or otherwise making it available to any other person with imprisonment for term which may extend to two years or with fine which may extend to one lakh rupees or with both.

Clause 73- This clause provides for punishment with imprisonment for a term which may extend to two years or with fine which may extend to one lakh rupees or with both to a person whoever knowingly publishes for fraudulent purpose any Digital Signature Certificate.

Clause 74- This clause provides for punishment for commission of any offence or contravention by a person outside India irrespective of his nationality if the act or conduct constitutive the offence or contravention involves a computer, computer system or computer network located in India.

Clause 75- This clause provides for confiscation of any computer, computer system, floppies, compact disks, tape drive or any other accessories related thereto in respect of contravention of any provision of any provision of the Act, rules, regulations orders made there under.

Clause 76- This clause provides that penalty and confiscation provided under this Act shall not interfere with other punishments provided under any other law for the time being in force.

Clause 77- this clause provides for power to investigate the offences under the Act by a Police Officer not below than the rank of Deputy Superintendent of Police.

Clause 78- This clause provides that the Network Service providers not to be it in certain circumstance.

Clause 79- This clause empowers Police Officer not below the rank of Deputy Superintendent of Police or any other officer of the Central or State Government to enter, search and seize and arrest any person who is reasonably suspected to have committed any offence under this Act.

Clause 80- This clause provides that the provisions of the Act shall have overriding effect over the other law.

Clause 81- This clause provides that the Controller, Deputy Controller and Assistant controller shall be deemed to public servants within the meaning of section 21 of the Indian Penal code.

Clause 82- This clause provides for the Central Government to give directions to the Government of states as to carrying into execution, the provision of the Act.

Clause 83- This clause provides for Protection of action taken in good faith by the Central Government, the State Government, the controller or any person acting on behalf under the Act.

Clause 84- This clause provides for offences committed by companies.

Clause 85- This clause confers the power upon the Central Government to remove certain difficulties arising out of implementation of the provisions of the Act.

Clause 86- This clause confers power upon the Central Government to make rules.

Clause 87- This clause provides for constitution of Cyber Regulation Advisory Committee which may advise the Central Government on certain matters under the Act.

Clause 88- This clause provides for power to the Controller to make regulations under the Act.

Clause 89- This clause provides power to State Government to make rules.

Clause 90- This clause provides for amendment of the Indian Penal Code. The Indian Penal Code provides for offences relating to documents. It is proposed to amend various sections so as to take care of offences relating to electronic records also accordingly-

- i) a new definition clause containing "electronic record" is inserted as section 29 A;
- ii) Section 167, 172, 175, 192, 204 and 463 being amended to include "electronic record" also.
- iii) sections 464 is being amended to provide punishment for making a false document or false electronic records;
- iv) sections 466, 468, 469, 470, 476, and 477A are being amended to include "electronic record" also;

Clause 91- this clause provides for amendment of Indian Evidence Act, 1872. The amendments are being made to take care of admissibility of electronic records along with paper based documents. Other consequential amendment are also being made take note of the provisions of the Information Technology Act, 1999. Salient features of the amendments are as follows;

- i) in section 3 in the definition of "evidence" for "all documents produced for the inspection of the Court" the words "the contents of electronic record", "information" and "subscriber" shall have the meanings assigned to them in the information Technology Act, 1999.
- ii) after the definition of "India" the expressions "Certifying Authority", "electronic form", "electronic records" "information" and "subscriber" shall have the meanings assigned to them in the Information Technology Act, 1999.
- iii) after section 22, a new section 22A is being inserted to provide for relevance of oral admissions as to contents of electronic records in certain circumstances'

- iv) in section 34 and 35, the words "electronic record" are also proposed to be added in addition to books of account and records;
- v) this clause seeks to substitute section 39 which provides for extent to which a statement forming part of a longer statement will be admissible in order to take care of statement contained in electronic record
- vi) after section 47, a new section 47 A is proposed to be inserted in the Act in respect of opinion to be formed by Court as to the digital signature by the certifying Authority.
- vii) in section 59, the contents of "documents" is being substituted by contents of "documents" or electronic records".
- viii) after section 65, two new sections namely, 65 A and 65B are being proposed to be inserted which are special provision relating to electronic records and admissibility of computer outputs which is based on the lines see 36A of the Central Exercise Act, 1944 and section 138 C of custom Act, 1962;
- ix) after section 67 a new section 67 A is proposed to be inserted providing for the circumstances in which the digital signature of a subscriber may be proved;
- x) after section 73 a new section 73 A is proposed to be inserted to empower a court to direct a subscriber Certifying Authority, or the Controller to produce a Digital Signature Certificate.
- xi) after section 81, a new section 81 A is proposed to be inserted with reference to presumption as to the Official Gazette;
- xii) after section 81, three new section 85A, 85B, 85 C are proposed to be inserted with reference to presumptions as to electronic agreements, a electronic records, digital signature and digital Signature Certificates;
- xiii) after section 88, a new section 90A is proposed to be inserted in respect of presumptions as to electronic messages;

xiv) after section 90, a new section 90A is proposed to be inserted in respect of presumptions as to electronic records five years old;

xv) section 131 is proposed to be substituted for production of documents or electronic records which another person, having in his possession could refuse to produce.

Clause 92- Provides for the amendment of the Banker's Book Evidence Act, 1891 as follows-

- i) to amend clause (3) and (8) of section 2 which relates to definitions of "Banker's Book" and "certified copy"
- ii) after section 2, a new section 2A is proposed to be inserted imposing certain conditions in the print out.

Clause 93- Provides for amendment of Reserve Bank of India Act, 1934 to insert a new clause (pp) after clause (p) in sub-section (2) of section 58 with reference to the regulation of the fund transfer through electronic means.

### **Financial Memorandum**

Clause 48 of the Bill relates establishment of Cyber Regulations Appellate Tribunal and clause 52 relates to the salaries and allowances payable to and the other terms and conditions of service including pension, gratuity and other retirement benefits of the corresponding officer of the tribunal. Sub-clause (3) of clause 56 of the bill provides for the salaries and allowance and other conditions of the officers and employees of the Cyber Regulation Appellate. Sub-clause (4) of clause 87 of the bill provides for such travelling and other allowances to be paid to the Members of the Committee.

2. It is assumed that the Bill, when enacted will involve a non-recurring expenditure of rupees seventy-five lakh and recurring expenditure of rupees one hundred and fifty lakhs during every financial year. 3. The bill does not involve any other non-recurring expenditure.

### **Memorandum Regarding Delegated Legislation**

Clause 1(4) (1) of the Bill empowers the central Government to notify and class of documents or transactions in the Official Gazette to which the provisions of this Act will not apply.



2. Clause 85 of the Bill empowers the Central Government by order to remove certain difficulties which may appear to it to be necessary or expending. Further such order shall not be made under form the commencement of this Act. Every such order shall be laid before both Houses of parliament<sup>6</sup>.

3. Clause 86 of the Bill empowers the Central Government to make rule by notification to carry out the provisions of the Act. The matters in respect of which such rules may be made are specified therein. Those matters relate. Inter alia to the electronic form in which filing. Creation, grant or payment shall be made, types of digital signatures, the security procedure for creating secure electronic to be fulfilled by an applicant for granting licence, renewal and revocation of such licence, the manner in which the adjudicating officer shall hold inquiry, the salary allowances and other terms and conditions of service of the presiding officer of Cyber appellate Tribunal, the procedure for investigation of misbehavior or in capacity of the presiding officer, the form of appeal, the salary and allowances and other conditions of service of other officers and employees of the Tribunal.

4. Clause 88 of the bull empowers the controller to make regulation after consultation with the Cyber Regulation Advisory Committee and with the previous approval of the Central Government to carry out the purposes of this Act. The matters in respect of which such regulations may be made are specified therein. These matters relate, inter alia, to the particulars relating to maintenance of database containing the disclosure record of every certifying authority, issue Digital Signature Certificate in a country outside India, the terms and conditions subject to which a licence may be granted and other standards to be observed by a certifying Authority

5. Clause 89 of the Bill empowers the State Government to make rules by notification to carry out the provisions of the Act. The matter in respect of which such rules may be made are specified therein. These matters relate, inter alia, to the electronic form in which filing, creation, grant or payment shall be affected, and certain other matters specified in sub-section (2) of section 6.

6. The matters on respect of which rules and regulations may be made are matters of administrative detail and procedure and, as such, the delegation of legislative power is of a normal character.

### **Annexure**

### **Extracts from the India Penal Code**

**(45 of 1860)**

Public servant framing an incorrect document with intent to cause injury.

167 Whoever, being a public servant, and being, as such public servant, charged with the preparation or translation of any document, frames or translates that document in a manner which he knows or believes to be incorrect, intending thereby to cause or knowing it to be likely that he may thereby cause injury to any person, shall be punished with imprisonment of either description for a term which may extend to three years or with fine or with both.

### **Chapter X**

Or contempts of the lawful authority of public servants

#### **Abconding to avoid service of summons or other proceeding**

172. Whoever absconds in order to avoid being served with a summons, notice or order proceeding from any public servant legally competent, as such public servant, to issue such summons, notice or order, shall be punished with simple imprisonment for a term which may extend to one month, or with fine which may extend to five hundred rupees, or with both;

Or, if the summons or notice or order is to attend in person or by agent, or to produce a document in a Court of Justice, with simple imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

#### **Preventing service of summons or other proceeding or preventing publication thereof**

173. Whoever in any manner intentionally prevents the serving on himself, or on any other person, of any summons, notice or order proceeding from any public servant, to issue such summons, notice or order, or intentionally removes any prevents the lawful affixing to

any place of any such summons, notice or order, or intentionally removes any such summons, notice or order from any place to which it is lawfully affixed, or intentionally prevents the lawful making of any proclamation, under the authority of any public servant legally competent, as such public servant legally competent, as such public servant, to direct such proclamation to be made. Shall be punished with simple imprisonment for a term which may extend to one month, or with fine which may extend to five hundred rupees, or with both, or, if summons, notice, order or proclamation is to attend in person or by agent, or to produce a document in a court of justice, with simple imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

175. Whoever being legally bound to produce or deliver up any document to any public servant, as such, intentionally omits so to produce or deliver up the same, shall be punished with simple imprisonment for a term which may extend to one month, or with fine which may extend to five hundred rupees, or with both.

Or, if the document is to be produce or delivered up to Court of Justice, with simple imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

### **Illustration**

A, being legally bound to produce a document before a District Court, intentionally omits to produce the same. A has committed the offence defined in this section.

### **Fabricating false evidence**

192. Whoever cause any circumstances to exist or makes any false entry in any book or record, or makes any document containing a false statement, intending that such circumstance, false entry statement may appear in evidence in a judicial proceeding, or in a proceeding taken by law before a public servant as such, or before an arbitrator, and that such circumstance, false entry or false statement, so appearing in evidence may cause any person who is such proceeding is to form an

opinion upon the evidence, to entertain an erroneous opinion touching any point material to the result of such proceeding is said "to fabricate false evidence."

### **Illustrations**

- a) A puts jewels into a box belonging to Z, with the intention that they may be found in that box, and that this circumstance may cause Z to be convicted of theft. A has fabricated false evidence.
- b) A makes a false entry in his shop-book for the purpose of using it as corroborative evidence in a Court of Justice. A has fabricated false evidence.
- c) A, with the intention of causing Z to be convicted of a criminal conspiracy, writes a letter in imitation of Z's handwriting, purporting to be addressed to an accomplice in such criminal conspiracy, and puts the letter in a place which he knows that the officers of the police are likely to search. A has fabricated false evidence.

### **Destruction of document to prevent its production as evidence**

204. Whoever secretes or destroys any document which he may be lawfully compelled to produce as evidence in a Court of Justice, or in any proceeding lawfully held before a public servant, as such, or obliterates or renders illegible the whole or any part of such document with the intention of preventing the same from being produced or used as evidence before such Court or public servant as aforesaid, or after he shall have been lawfully summoned or required to produce the same for that purpose, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine or with both.

## **Chapter XVIII**

### **Of offences relating to document and to property marks**

#### **Forgery**

463. Whoever makes any false document or part of a document with intent to cause damage or injury, to the public or to any person, or to support any claim or title, or to cause any person to part with property, or to enter into any express or implied contract, or with intent

to commit fraud or that fraud or that fraud may be committed, commits forgery.

### **Making a false document**

464. A person is said to make a false document

**Firstly** - Who dishonestly or fraudulently makes, signs, seals or executes a document or part of a document, or make any mark denoting the execution of a document, with intention of causing it to be believed that such document or part of a document was made, signed, sealed or executed by or by the authority of a person by whom or by whose authority he know that it was not made, signed sealed or executed, or at a time at which he knows that it was not made, signed, sealed or executed; or

**Second** - Who, without lawful authority, dishonestly or fraudulently, by cancellation or otherwise, alters a document in any material part thereof, after it has been made or executed either by any other person, whether such person be living or deal at the time of such alteration; or

**Thirdly :- Who dishonestly or fraudulently cause any person to sign. Seal execute or alter a document, knowing that such person by reason of unsoundness of mind or intoxication cannot, or that by reason of deception practiced upon him, he does not know the contents of the document or the nature of the alteration.**

Illustrations

- a) A has a letter of credit upon B for rupees 10,000 written by Z. a. in order to defraud B, adds a cipher to the 10,000 and make the sum 1,00,000 intending that it may be believed by B that Z so wrote the letter. A has committed forgery.
- b) A, without Z's authority, affixed Z's seal to a document purporting to be a conveyance of an estate from Z to A, with the intention of selling the estate to B and thereby of obtaining from B the purchase - money. A has committed forgery.
- c) A picks up a cheque on a banker signed by B. payment to bearer, but without any sum having been inserted in the cheque. A fraudulently fills up the cheque by inserting the Sian of ten thousand rupees. A commits forgery.

- d) A leaves with B, his agent a cheque on a banker, signed by A, without inserting the sum payable and authorizes B to fill up the cheque by inserting sum not exceeding ten thousand rupee for the purpose of making certain payments. B fraudulently fills up the cheque by inserting the sum of twenty thousand rupees. B commits forgery.
- e) A bill of exchange on himself in the name of B without B's authority, intending to discount it as a genuine bill with a banker and intending to take up the bill on its maturity, Here, as a draws the bill with intend to deceive the banker by leading him to suppose that he had the security of B, and thereby to discount the bill, A is guilty of forgery.
- f) Z's will contain these words "I direct that all my remaining property be equally divided between A. B and C." A dishonestly scratches out B's name, intending that it may be believed that the whole was left to himself and C. A has committed forgery.
- g) the word "Pay to Z or his order" and signing the endorsement. B dishonestly erases the word "Pay to Z or his order", and thereby converts the special endorsement into a blank endorsement. B commits forgery.
- h) A sell and conveys an estate to Z. A afterwards, in order to defraud Z of his estate, executes a conveyance of the same estate to B, dated six months earlier than the date of the conveyance to Z intending it to be believed that he has conveyed the estate to B before he conveyed it to Z. A has committed forgery.
- i) Z dictates his will to A. A intentionally writes down a difference legatee from the legatee named by Z, and by representing to Z that he has prepared the will according to his instructions, induces Z to sign the will. A has committed forgery.
- j) and in distressed circumstances from unforeseen, intending by means of such letter to obtain aims from Z and other persons. Here as a made a false document in order to induce Z to part with property, A has committed forgery.

- k) A without B's authority writes a letter and signs it in B's name certifying employment under Z. A has committed forgery in as much as he intended to deceive Z by the forged certificate, and thereby to induce Z to enter into an express or implied contract for service.

**Explanation 1** - A man's signature of his own name may amount to forgery.

**Illustration**

- a) A signs his own name to a bill of exchange, intending that it may be believed that the bill was drawn by another person of the same name. A has committed forgery.
- b) A writes the word "accepted" on a piece of paper and signs it with Z's name, in order that B may afterwards write on the paper a bill of exchange drawn by B upon Z, and negotiate the bill as though it had been accepted by Z, A is guilty of forgery; and if B, knowing the fact, draws the bill upon the paper pursuant to A's intention, B is also guilty of forgery.
- c) A picks up a bill of exchange payable to the order of a different person of the same name. A endorses the bill in his own name, here A has committed forgery.
- d) A purchases an estate sold under execution of a decree against B. B after the seizure of the estate, in collusion with Z, executes a lease of the estate, to Z at a nominal rent and for a long period and dates the lease six months prior to the seizure, with intent to defraud A, and to cause it to be believed that the lease was granted before the seizure, B, though he executes the lease in his own name, commits forgery by antedating it.
- e) A, a trader in anticipation of insolvency, lodges effect with B for A's benefit, and with intent to defraud his creditors; and in order to give a color to the transaction, writes a promissory note binding himself to pay to B a sum for value received, and antedates the note, intending that it may be believed to have been made before A was on the point of insolvency. A has committed forgery under the first head of the definition.

**Explanation 2** - The making of a false document in the name of fictitious person, intending it to be believed that the document was made by a real person, or in the name of a deceased person, intending it to be believed that the document was made by the person in his lifetime, may amount to forgery.

**Illustration**

A draws a bill of exchange upon a fictitious person, and fraudulently accepts the bill in the name of such fictitious person with intent to negotiate it. A commits forgery.

**Forgery of court or of public register, etc.**

466. Whoever forges a document, purporting to be a record or proceeding or in a Court of Justice, or register of birth, baptism, marriage or burial, or a register kept by a public servant as such, or certificate or document purporting to be made by public servant in his official capacity, or an authority to institute or defend a suit, or to take any proceedings therein, or to confess judgment, or a power of attorney, shall be punished with imprisonment to either description for a term which may extend to seven years, and shall also be liable to fine.

**Forgery for purpose of cheating**

468. Whoever commits forgery, intending that the document forged shall be used for the purpose of cheating, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

**Forgery for purpose of harming reputation**

469. Whoever commits forgery, intending that the document forged shall harm the reputation of any party, or knowing that it is likely to be used for that purpose shall be punished with imprisonment of either description for a term which may extend to three years, and shall also be liable to fine.

**Forged document**

470 A false document made wholly or in part by forgery is designated "a forged document"

**Using as genuine a forged document**



471. Whoever fraudulently or dishonestly uses as genuine any document which he knows or has reason to believe to be a forged document, shall be punished in the same manner as if he had forged such document.

#### **Falsification of accounts**

447A. Whoever, being a clerk, officer or servant, or employed or acting in the capacity of a clerk, officer or servant, willfully, and with intent to defraud, destroys, alters, mutilate or falsifies any book, paper, writing, valuable security or account which belong to or is in the possession of his employer, or has been received by him for or on behalf of his employer, or willfully, and with intent to defraud, makes or abets the making of any false entry in or omits or alters the omission or alteration of any material particular form or in, any such book, paper, writing, valuable security or account, shall be punished with imprisonment description for a term which may extend to seven years or with fine, or with both.

**Explanation** - It shall be sufficient in any charge under this section to allege a general intent to defraud without naming any particular person intended to be defrauded or specifying any particular sum of money intended to be the subject of the fraud, or any particular day on which the offence was committed.

#### **Extracts from the Indian Evidence Act, 1872**

**(1 of 1872)**

#### **Interpretation clause**

3. In this Act the following words and expression are used in the following senses, unless a contrary intention appears from the context-

“Evidence” means and includes-

1) all statements which the Court permits or requires to be made before it by witnesses, in relation to matters of fact under inquiry:

Such statements are called oral evidence;

2) all documents produced for the inspection of the Court;

Such documents are called documentary evidence.

Statements made under special circumstances

**Entries in the books of account when relevant**

34. Entries in books of account, regularly kept in the course of business, are relevant whenever they refer to a matter into which the Court has to inquire, but such statements shall not alone be sufficient evidence to change any person with liability.

**Illustration**

A sues B for its, 1,000 and shows entries in his account books showing B to be indebted to him to this amount. The entries are relevant, but am not sufficient, without other evidence, to prove the debt.

**Relevancy of entry in public record made in performance of duty**

35. An entry in any public or other official book, register or record, stating a fact in issue or relevant fact, and made by a public servant in the discharge of his official record made in duty, or by any other person in performance of a duty the country in which such book, register or record is kept, is itself a relevant fact.

**Chapter IV  
Of Oral Evidence**

**Proof of facts by oral evidence.**

59. All facts except the contents of documents, may be proved by oral evidence.

Production of documents which another person, having possession, could refuse to produce.

131. No one shall be compelled to produce documents in the possession, which any other person would be entitled to refuse to produce if they were in his possession, unless such last- mentioned person consents to their production.

**Extract from the Banker's Books evidence Act, 1891  
(18 of 1891)**

**Definitions**

2. In this Act, unless there is something repugnant in the subject or context-

3) "banker book" include ledgers, day - books, cash book account-books and all other books used in the ordinary business of a bank.

Order of court to be construed to be order made by specified officer.

In the application of section 5, 6 and 7 to my investigation or inquiry referred to in sub - clause (iii) of clause (4) of section 2, the order of a court or a Judge referred to in the said sections shall be construed as referring to an order made by an officer of a rank not lower than the rank of a Superintendent of Police as may be specified in this behalf by the appropriate Government.

**Explanation** - In this section "appropriate Government" means the Government by which the police officer or any other person conducting the investigation or inquiry is employed.

## विश्वविद्यालय द्वारा संचालित पाठ्यक्रमों की सूची

पाठ्यक्रम का नाम	अवधि
1. स्नातक उपाधि प्रारम्भिक पाठ्यक्रम	6 माह
2. भोजन एवं पोषण में सर्टिफिकेट	6 माह
3. कम्प्यूटर ज्ञान एवं प्रशिक्षण का प्रारम्भिक पाठ्यक्रम	6 माह
4. सर्टिफिकेट इन कम्प्यूटिंग	6 माह
5. पंचायती राज प्रोजेक्ट में प्रमाण-पत्र	6 माह
6. संस्कृति एवं पर्यटन में प्रमाण-पत्र	6 माह
7. महिलाओं में वैधानिक बोध में प्रमाण-पत्र	6 माह
8. राजस्थानी भाषा एवं संस्कृति में प्रमाण-पत्र	6 माह
9. बी.ए.एफ./बी.सी.एफ. (त्रिवर्षीय पाठ्यक्रम)	1 वर्ष
10. एम.ए.(अर्थशास्त्र, राजनीति विज्ञान, इतिहास, हिन्दी)	2 वर्ष
11. एम.बी.ए.	3 वर्ष
12. पी.जी.डी.एच.आर.एम.	1 वर्ष
13. पी.जी.डी.एफ.एम.	1 वर्ष
14. पी.जी.डी.एम.एम.	1 वर्ष
15. पी.जी.डी.एल.एल.	1 वर्ष
16. टी.एच.एम.	1 वर्ष
17. डी.एन.एच.ई.	1 वर्ष
18. डी.सी.ओ.	1 वर्ष
19. डी.एल.एस.	1 वर्ष
20. डी.सी.सी.टी.	18 माह
21. बी.जे.(एम.सी.)	1 वर्ष
22. एम.जे.(एम.सी.)	2 वर्ष
23. बी.लिब.	1 वर्ष
24. पर्यावरण विज्ञान में स्नातकोत्तर डिप्लोमा	1 वर्ष
25. बी.एड.	2 वर्ष
26. पी.एच.डी.	3 वर्ष
27. पी.जी.डी.ई.एस.डी.	1 वर्ष