

11. Compare and contrast the file systems used in Linux and Windows Operating Systems.
12. Explain the concept of deadlock in an operating system and discuss the necessary conditions for deadlock to occur. Also, describe the methods for handling deadlock.
13. Consider the following processes as given below. Find the average waiting time and turn around time (Both for FCFS and SJF) :

Process	Arrival Time	Burst Time
P1	0	5
P2	1	3
P3	2	8
P4	6	7

**PGDCA-01/MSCCS-01/  
PGDCA-101/MSCCS-101/  
MSCCSC-101/MCA-101**

**June – Examination 2023**

**PGDCA/MSCCS (Pre.)/MCA  
(Ist Year) Examination**

**Computer Fundamental and System Software**

**Paper : PGDCA-01/MSCCS-01/PGDCA-101/  
MSCCS-101/MSCCSC-101/MCA-101**

*Time : 3 Hours ]*

*[ Maximum Marks : 80*

*Note :-* The question paper is divided into three Sections A, B and C. Write answers as per the given instructions.

**Section–A**

**8×2=16**

**(Very Short Answer Type Questions)**

*Note :-* Answer all questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries 2 marks.

1. (i) Define the term 'RAID'.
- (ii) Give an example of a sequential access storage device.
- (iii) What is the Excess-3 code of 111000 and 000111 ?
- (iv) What is the use of Recycle Bin ?
- (v) What are the functions of a device driver in an operating system ?
- (vi) Given a logic circuit with inputs  $A = 0$  and  $B = 1$ , calculate the output of the NAND gate.
- (vii) What is the use of the man command ? Give an example.
- (viii) Give an example of an exclusive-OR gate and its truth table.

**Section-B** **4×8=32**

**(Short Answer Type Questions)**

**Note** :- Answer any *four* questions. Each answer should not exceed **200** words. Each question carries 8 marks.

2. Differentiate between primary memory and secondary memory.

3. Discuss the types of threads and the advantages of multithreading in operating systems.
4. Explain the Linux commands which are used to change the permission in detail with suitable examples.
5. Simplify the expression  $Z = f(A, B, C) = A' B' C' + A.B' C + A' BC$  using K-map.
6. Compare and contrast the FAT32 and NTFS file systems used in windows operating systems.
7. Describe the process management functions and the different process states in an operating system.
8. Compare and contrast the advantages and disadvantages of inkjet and laser printers.
9. Explain the concept of logical vs. physical addressing and address translation in memory management.

**Section-C** **2×16=32**

**(Long Answer Type Questions)**

**Note** :- Answer any *two* questions. You have to delimit your each answer maximum up to **500** words. Each question carries 16 marks.

10. Discuss the various input and output devices used in computer systems and their applications.