572

MCA-11

December - Examination 2016

MCA IInd Year Examination

Operating System

Paper - MCA-11

Time : 3 Hours] **[Max. Marks :- 80**

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

Section - A $8 \times 2 = 16$

(Very Short Answer Questions)

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

1) (i) What is deadlock?

(ii) List the features of real time system.

(iii) What is thrashing?

(iv) Define operating system.

(v) What do you mean by batch?

(vi) Explain system call.

(vii) Give one difference between parallel system and distributed system.

(viii) What is I/O buffering?

Section - B $4 \times 8 = 32$

(Short Answer Questions)

Note: Answer **any four** questions. Limit to answer questions is 200 words.

2) What is process? Describe process state transition diagram in detail.

3) When does Race condition arises? Give the solution of Race condition.

4) Compare sequential access and random access files.

5) Write short note on Interrupt Handlers.

6) Discuss the uses and design issues of thread.

7) Explain the concept of swapping in detail.

8) Explain three allocation methods in file system implementation. Illustrate with proper diagram.

9) Why security and protection is necessary in operating system? Explain.

Section - C $2 \times 16 = 32$

(Long Answer Questions)

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

10) Give the necessary conditions of deadlock. Explain Banker's algorithm with example.

11) What is demand paging? Consider the following reference string 7, 0, 1, 2, 0. 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. Assume there are 3 frames. Apply LRU replacement algorithm to the reference string above and find out how many page fault are produced. Illustrate the LRU page replacement algorithm in detail and also two feasible implementation of LRU algorithm.

12) What is distributed operating system? How distributed system coping the failure? Explain.

13) Write short note on the following:

    (i) Remote procedure call

    (ii) Cryptography in OS