

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicate full marks.

- Q.1 Attempt any four of the following: 20**
- A Write a short note on Operating Systems.
 - B State and explain any five Operating system services.
 - C Explain various operating system structure
 - D Explain any two types of system calls.
 - E State and explain various multithreading models.
 - F Write a short note on Multicore Systems.
- Q.2 Attempt any four of the following: 20**
- A Write a short note on Race condition.
 - B Explain Critical Section of a process.
 - C Explain FCFS Scheduling algorithm.
 - D State and explain various necessary and sufficient conditions for deadlock
 - E Explain dining philosopher's problem
 - F Write a Short note on Semaphore.
- Q.3 Attempt any four of the following: 20**
- A Write a short note on paging.
 - B Disk queue with I/O on cylinders is in following orders:
70,125,40,150,20,118
 - Disk head is at 50.
 - Cylinders are 200 numbered from 0 to 199Calculate total head movement using FCFS disk scheduling algorithm.
 - C Write a short note on virtual memory.
 - D Consider three frames with the following reference string:
2 1 2 3 4 2 5 1 6 3 calculate the number of page faults using FIFO algorithm.
 - E State and explain various file operations.
 - F Write a short note on tree structure directory.
- Q.4 Attempt any three of the following: 15**
- A Write a short note on PCB
 - B Explain Batch Processing systems in detail.
 - C Write a short note on deadlock avoidance
 - D Explain bounded buffer problem.
 - E State and explain various file access methods.
 - F Explain Single level and two level directory.

*****END*****