

Total No. of Questions : 09

Total No. of Pages : 02

B.Tech.(ECE)/(ETE) (2011 onwards) (Sem.-6)

OPERATING SYSTEMS

Subject Code : BTCS-401

Paper ID : [A2314]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

Q1 Write briefly :

- a) What is batch processing?
- b) Define turn-around time and waiting time of a process.
- c) What is virtual memory and its need?
- d) List the techniques used for process synchronization.
- e) Under what circumstances, it is better using time-sharing system rather than a personal computer or single-user workstations?
- f) What are the various kinds of performance overheads associate with interrupt processing?
- g) Define the terms : sector sparing and sector slipping.
- h) What is starvation and its solution?
- i) Name various page replacement policies used in paged memory management systems.
- j) What is motivation behind distributed computing?

SECTION-B

- Q2. What is PCB and its role in job scheduling? Describe in brief the various types of schedulers used by any operating system.
- Q3. Compare pure segmentation and pure paging with respect to key issues :
- a) External and Internal fragmentation
 - b) Ability to share code across processes
- Q4. Describe the various file allocation methods along with their merits and demerits.
- Q5. What are the key features and applications of Parallel, Time Sharing and Real time systems?
- Q6. Consider the set of processes $\langle p_1, p_2, p_3, p_4, p_5 \rangle$ with the length of the CPU burst $\langle 10, 3, 2, 3, 5 \rangle$ and they arrive in the same order at same time. Find out the turn around and waiting time for each process using FCFS and SJF.

SECTION-C

- Q7. Discuss various disk management policies. Explain the use of swap space management.
- Q8. State and explain the necessary condition that lead to deadlock situation. Explain the working of banker's algorithm for deadlock avoidance with suitable examples.
- Q9. Write short notes on the following :
- a) Protection and security in UNIX operating system
 - b) Multiprocessing operating systems