

B.SC. (I. T.) SEM. - III (2011 COURSE) : SUMMER - 2018

SUBJECT : OPERATING SYSTEMS

Day : Tuesday

S-2018-0978

Time : 02.30 pm to 05.30 pm

Date : 22/05/2018

Max. Marks : 80

N. B. :

- 1) Attempt **ANY EIGHT** questions.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.

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- Q. 1** a) Explain the principles of these methods: FCFS, SJF, RR. (06)
b) What is a process? Describe its different states? (04)
- Q. 2** a) Explain Virtual machines with the help of neat diagram. (06)
b) Differentiate between Multilevel queues and Multilevel feedback queues. (04)
- Q. 3** a) What is deadlock prevention? Explain deadlock prevention strategies? (06)
b) Explain Direct Memory Access (DMA). (04)
- Q. 4** a) Define Operating System. Explain the various services provided by an OS. (06)
b) What is a system call? What are different types of system calls? (04)
- Q. 5** Consider the following reference string: (10)
1, 3, 2, 1, 4, 5, 6, 2, 1, 3, 7, 4, 2, 3, 2, 1, 2, 3
Calculate the number of page faults with 3 page frames using optimal page replacement algorithm.
- Q. 6** a) Explain Demand and Pure Demand Paging in detail. (06)
b) Explain the life cycle of Instruction execution in a computer system. (04)
- Q. 7** a) Explain the concept of 'Threading'. Differentiate between Multiprocess and Multithreading. (06)
b) What is 'Critical Section problem'? Explain in detail. (04)
- Q. 8** a) What are the advantages of having different time quantum sizes on different levels of a multilevel queuing system? (06)
b) Explain fragmentation with respect to MVT and MFT. (04)
- Q. 9** Explain the following in detail: (10)
a) Dispatcher b) Throughput
c) Rollback c) Starvation