B.Sc. (I. T.) Sem. - III (2011 Course) : WINTER - 2018

SUBJECT: OPERATING SYSTEM

Day: Thursday
Date : 29/11/2018

W-2018-1102

Time : 02.30 pm to 05.30 pm
Max.Marks: 80

N.B.:

1) Attempt **ANY EIGHT** full questions.
2) Figure to the right indicates **FULL** marks.
3) Draw neat, labeled diagram **WHEREVER** necessary.

Q.1 a) Describe Inter process communication in detail. **(04)**

b) Explain different types of job schedulers with a neat diagram. **(06)**

Q.2 a) Explain swapping in memory management with the help of a neat diagram. **(04)**

b) Consider the following snapshot of the system: **(06)**

Job	Arrival Time	CPU Burst Time
1	0	4
2	1	1
3	2	2
4	3	1

Calculate the average turnaround time and average time using pre-emptive SJF.

Q.3 a) Describe Context switch with suitable examples. **(04)**

b) Consider the following references string: **(06)**

1, 3, 3, 2, 5, 4, 5, 4, 1, 4, 2, 2, 5

Assume number of frames to be 3. Calculate the total number of page faults using LRU algorithm.

Q.4 a) Why is Operating System viewed as a resource allocator and control program? **(04)**

b) What is an Interrupt? What are the different types of Interrupt? Explain with diagram the Interrupt handling mechanism. **(06)**

Q.5 a) What are the differences between Paging and Segmentation? **(04)**

b) When does a page fault occur? Explain various page replacement algorithms. **(06)**

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Q.6 a) What is process and process table? **(04)**

b) What is a Process Control Block? What is the information contained in PCB? List them. **(06)**

Q.7 a) What are different types of multiprocessing? **(04)**

b) What are the allocation methods of a disk space? State their advantages and disadvantages.

Q.8 a) What is Demand Paging? What are the major problems to implement Demand Paging? **(04)**

b) What are the various scheduling criteria for CPU scheduling? **(06)**

Q.9 Write short notes on **ANY TWO**: **(10)**

i) Process Synchronization

ii) System Call

iii) Pure Demand Paging

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