PVP 14

Code: CS5T5

III B.Tech - I Semester – Regular/Supplementary Examinations
October 2017

OPERATING SYSTEMS
(COMPUTER SCIENCE AND ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11x 2 = 22 M

1.

a) List three main functions of operating system.
b) What is meant by Multiprogramming system?
c) Define kernel.
d) List out the advantages of using multithreaded programming.
e) What do you infer by preemptive and nonpreemptive scheduling?
f) Define starvation.
g) When can we call a state as safe?
h) Define page fault.
i) Discuss the need of page replacement algorithms.
j) What are the common attributes of a file?
k) What do you understand by storage area network?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.
3 x 16 = 48 M

2.a) Discuss the OS structure and operations with diagram. 8 M

b) Illustrate the abstract view of computer system. 8 M

3.a) Explain multithreaded server architecture and various multithreading models. 8 M

b) Four jobs to be executed on a single processor system arrive at time **0** in the order A, B, C, D. Their burst CPU time requirements are **4, 1, 8, 1** time units respectively. Calculate the completion time of A under round robin scheduling with time quantum of one time unit. 8 M

4.a) Describe the dining-philosophers Problem in detail. 8 M

b) Explain deadlock prevention methods in detail. 8 M

5.a) Describe demand paging with the steps to handle a page fault in it. 8 M

b) Illustrate paging in operating system. 5 M

c) What do you understand by swapping? 3 M

6.a) Discuss the remote file systems in detail. 8 M

b) Disk requests come to disk driver for cylinders **10, 22, 20, 2, 40, 56** and **38** in that order at a time when the disk drive is reading from cylinder 20. The seek time is 6 msec per cylinder. Compute the total seek time if the disk scheduling algorithm is:

i) First Come First Serve. 4 M

ii) Shortest Seek Time First 4 M