PVP 14

Code: IT3T5

II B.Tech - I Semester–Regular/Supplementary Examinations
November 2017

OPERATING SYSTEMS CONCEPTS
(INFORMATION TECHNOLOGY)

Duration: 3 hours Max. Marks: 70

PART – A

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

11x 2 = 22 M

1.
   a) What is operating system structure?
   b) What are the operating system services that are helpful to the user?
   c) What are the typical elements of process control block?
   d) What are the benefits of multi-threaded programming?
   e) What is preemptive scheduling?
   f) Distinguish between counting semaphores and binary semaphores.
   g) What are the necessary conditions for a deadlock situation?
   h) What is paging?
   i) What is thrashing?
   j) What are the various file allocation methods?
   k) Draw the diagram of process states.

PART – B

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

2. a) What is computer System Architecture? Explain number of different ways in which it can be organized. 8 M

   b) What are the various special purpose systems? Explain with examples. 8 M

3. a) Explain the process of invoking system call with an example. Also write Various system calls. 8 M

   b) What are the advantages of inter-process communication? How communication takes place in a shared-memory environment? Explain. 8 M

4. a) Write detailed notes on Round-Robin Scheduling. 8 M

   b) How semaphore can be used for synchronization? Explain with the help of an example. 8 M

5. a) Explain resource-allocation-graph algorithm for deadlock avoidance. 8 M

   b) Illustrate the basic method and hardware support for paging. 8 M

6. a) Explain in detail how demand paging is evaluated for its performance. 8 M

b) What are the attributes of a file and also what are basic file operations? 8 M