Total No. of Questions: 09

M.Sc.(IT) (2015 Onwards) (Sem. – 1) OPERATING SYSTEM

M Code: 72520 Subject Code: MSIT-104 Paper ID: [72520]

Time: 3 Hrs. Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

- 1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks and students have to attempt any ONE question from each SECTION.
- 2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION A

- 1. Discuss with examples the following types of operating systems:
 - a) Multiprocessor
 - b) Multiprogramming
 - c) Distributed
 - d) Time sharing
- 2. Explain the various operating system components.

SECTION B

- 3. Discuss the following scheduling algorithms with suitable examples:
 - a) LCFS
 - b) SJF
 - c) SRTF
 - d) Round Robin
- 4. Define Semaphores. In which cases semaphores are used and how these can be implemented?

SECTION C

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- 5. Briefly discuss the various contiguous and non-contiguous memory management techniques.
- 6. What is Virtual memory? What is the need of virtual memory? Discuss the technique of paging in detail.

SECTION D

- 7. Explain in detail the structure of a Disk.
- 8. What are the various threats to the security of a system? Elaborate on the various protection mechanism.

SECTION E

- 9. a) What information is stored in Process Control Block?
 - b) What is the difference between short term scheduler and long term scheduler?
 - c) Define turnaround time.
 - d) What is the difference between I/O burst and CPU burst?
 - e) What do you mean by pre-emption?
 - f) Define logical address space.
 - g) What are the limitations of using inverted page tables?
 - h) Which of the disk scheduling algorithms cause starvation and why?
 - i) What are the attributes of a file?
 - j) What are the reasons for page faults?

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