Total No. of Questions: 09

B.Tech. (CSE/IT) (2011 Onwards) (Sem. – 4)

OPERATING SYSTEMS

M Code: 56604

Subject Code: BTCS-401

Paper ID: [A1183]

Time: 3 Hrs. **Max. Marks: 60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION A

1. a) Explain the function of Shell in brief.

   b) Explain in brief about process synchronization.

   c) Define the term Waiting time and Turnaround time in reference to scheduling algorithms.

   d) Differentiate between Internal and External Fragmentation.

   e) Write at least two advantages of virtual memory concept.

   f) Define the term Disk Bandwidth.

   g) Differentiate between seek time and rotational latency.

   h) Explain the term file system in brief.

   i) Explain various goals of Protection.

   j) Define the term Distributed Operating Systems.

SECTION B

2. Explain in detail the role of Operating system as a resource Manager.
3. Explain in detail the following CPU scheduling algorithms:

   a) Priority Scheduling

   b) Round Robin

4. Explain the role of I/O traffic controller in detail.

5. Define the term security. Explain various goals of security.

6. Differentiate between UNIX and Windows based operating systems.

SECTION C

7. a) Explain the different views of an operating system in brief.

   b) Define the term deadlock. Explain various necessary conditions for a deadlock to occur. Explain in brief about deadlock prevention.

8. Write a detailed note on secondary storage structure.

9. What is the need of Page replacement? Consider the following reference string

   7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1

   Find the number of Page Faults with FIFO, Optimal Page replacement and LRU with four free frames which are empty initially. Which algorithm gives the minimum number of page faults?