(Please write your Exam Roll No.)

Exam Roll No. .....

END TERM EXAMINATION

FIFTH SEMESTER [B.TECH] DECEMBER-2014

Paper Code: IT-317 Subject: Operating System

Time: 3 Hours Maximum Marks: 75

Note: Attempt any five questions including Q.no.1 which is compulsory. Select one question from each Unit.

Q1 Answer the following:- **(10x2=20)**

(a) What is Swapping?
(b) What is a process?
(c) Explain FIFO and LIFO.
(d) List various functions of OS.
(e) What is Thrashing?
(f) What is Context Switching?
(g) What is Multitasking?
(h) What is PCB?
(i) What is preemptive and non preemptive scheduling?
(j) What are Real Time Systems?

Unit-I

Q2 (a) State in brief the four key features of each of the following types of OS:- **(8)**
(i) Real-time (ii) Distributed (iii) Multiprogramming (iv) Time-sharing.
(b) Discuss the advantages of Multiprocessor System. **(2)**

Q3 Explain various CPU scheduling algorithms with example. **(10)**

Unit-II

Q4 (a) Differentiate between multiprogramming, multitasking, timesharing and multiprocessing systems. **(6)**
(b) What is a semaphore? What is its use? **(4)**

Q5 What is a Deadlock? How is it detected and prevented? Explain Deadlock avoidance algorithm. **(10)**

Unit-III

Q6 (a) When do page faults occur? Describe the actions taken by the operating system when a fault occurs. **(6)**
(b) Explain Segmentation with paging. **(4)**

Q7 (a) A process references pages in the following order:
1, 2, 3, 4, 5, 3, 4, 16, 7, 8, 7, 8, 9, 5, 4, 2, 4, 9
Use the FIFO, Optimal and LRU page replacement algorithms to find out the number of page faults for this reference string using 3 page frames. **(6)**
(b) What is Demand Paging? **(4)**

Unit-IV

Q8 Write short notes on **any two**:- **(5x2=10)**
(a) (i) SCAN (ii) C-SCAN (iii) SSTF (iv) FIFO.
(b) Virtual Memory.
(c) Windows 2000.

****

P

358