

SUBJECT CODE NO: E-338
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CSE/IT) Examination Nov/Dec 2017
Operating System
(REVISED)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i. Q.No.1 and Q.No.6 are compulsory.
 - ii. Attempt any two questions from Q.No.2 to Q.No.5 and Q.No.7 to Q.No.10 of each section.
 - iii. Figures to the right indicate full marks.

SECTION-A

- Q.1 Attempt any five questions from following: 10
- 1) Differentiate between multiprogramming & multitasking.
 - 2) How smart card OS works?
 - 3) What are the objectives of OS?
 - 4) What is significance of PCB?
 - 5) What is turnaround time? Explain with example.
 - 6) What do you mean by preemptive & non-preemptive type as scheduling?
 - 7) Enlist any four operations of file.
 - 8) Differentiate between field & record.
- Q.2 a) Explain OS as a resource manager. 07
b) What is critical section? Explain semaphore with example. 08
- Q.3 a) Explain types of threads in detail. 07
b) Explain file sharing. 08
- Q.4 a) Explain real time and time sharing OS. 08
b) Explain linked-list allocation of file. 07
- Q.5 a) Explain free space management in file system. 07
b) Consider the following set of processes, with the length of the CPU Burst given in milliseconds: 08

Process	Burst time	Priority
P ₁	2	2
P ₂	1	1
P ₃	8	4
P ₄	4	2
P ₅	5	3

The processes are assumed to have arrived in order P₁ P₂ P₃ P₄ P₅ all at time zero.

- i) Draw Gantt charts that illustrates the execution of these processes using the following scheduling algorithms: FCFS, SJF, non-preemptive priority (a larger priority number implies a higher priority) and RR(Quantum=2)
- ii) Calculate waiting time of each processes of SJF & RR scheduling.

SECTION-B

Q.6 Attempt any five from following questions: **10**

- 1) What is need of virtual memory?
- 2) What are the disadvantages of fixed sized memory partition?
- 3) What is swapping?
- 4) Why device drivers are required?
- 5) What is spooling?
- 6) What is safe state?
- 7) Explain circular wait condition in dead lock.
- 8) How to avoid deadlock?

Q.7 a) Explain segmentation in detail. **07**

- b) Suppose a disk drive has 200 cylinders, numbered 0 to 199. The driver is currently serving a request at cylinder 50. The queue of pending request is 95,180,34,119,11, 123,62,64 starting from current head position what is the total distance in cylinder that the disk arm require to satisfy all pending requests for the following algorithms?
- 1) FCFS **08**
 - 2) SSTF

Q.8 a) Explain system structure of windows 7. **07**

- b) What is paging? Discuss basic paging technique in detail. **08**

Q.9 a) Explain RAID in detail. **07**

- b) What are necessary conditions for deadlock? Explain detection & recovery. **08**

Q.10 a) What are the goals of I/O s/w? **07**

- b) Consider following page reference string: **08**

7 2 3 1 2 5 3 4 6 7 7
1 0 5 4 6 2 3 0 1

Assuming decimal paging with three frames. How many page faults would occur for following page replacement algorithms?

- 1) FIFO
- 2) LRU