Total No. of Questions : 5]

SEAT No. : ____

P-1300

[Total No. of Pages :2

[6055]-301
T.Y. B.Sc. (Computer Science)
CS - 351 : OPERATING SYSTEMS - I
(2019 Pattern) (Semester - V) (Paper - I) (CBCS)

Time : 2 Hours] ***[Max. Marks : 35***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data if necessary.***

Q1) Attempt any EIGHT of the following (out of ten) : **[8 × 1 = 8]**

a) What is shell?

b) What is thread?

c) List types of system calls.

d) State role of medium term schedular.

e) What is CPU - I/O burst cycle?

f) What is race condition?

g) Define response time?

h) Define Semaphore.

i) What is page table?

j) What is segmentation?

Q2) Attempt any four of the following : (out of five) **[4 × 2 = 8]**

a) What is operating system? List objectives of operating system.

b) Define critical section problem. Explain in detail.

c) Compare LFU and MFU with two points.

d) What is purpose of scheduling algorithm.

P.T.O.

Q3) Attempt any two of the following : (out of three) **[2 × 4 = 8]**

a) With the help of diagram describe process states.

b) Consider following set of processes CPU time given in milliseconds. Illustrate execution of processes using FCFS and preemptive SJF CPU scheduling algorithm and calculate turn around time, waiting time, average turn around time, average waiting time.

Processes	Burst time	A.T
P_0	5	1
P_1	3	0
P_2	2	2
P_3	4	3
P_4	8	2

c) What is fragmentation? Explain with all its types.

Q4) Attempt any two of the following :(out of three) **[2 × 4 = 8]**

a) Describe PCB with all its fields.

b) Which three requirements must be satisfied while designing a solution to critical section problem? Explain each in detail.

c) Consider the following reference string

1,2,3,4,2,1,5,6,2,1,3.

Assume 3 frames. Find the number of page faults according to FIFO, OPT. page replacement algorithms.

Q5) Attempt any one of the following :(out of two) **[1 × 3 = 3]**

a) Describe the term distributed operating system. State its advt. and disadvantages.

b) With the help of diagram describe swapping.