Total No. of Questions : 4]

SEAT No. :

P5055

[Total No. of Pages : 2

[6187]-458
T.E. (Information Technology) (Insem)
OPERATING SYSTEMS
(2019 Pattern) (Semester - I) (314442) (Theory)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2 and Q.3 or Q.4.***
2) ***Assume suitable data if necessary.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

Q1) a) Describe the concepts of virtual machines with its implementation and benefits. Brief the example of virtual machine. **[7]**

b) Define operating system. Explain basic functions of operating system. **[8]**

OR

Q2) a) Explain the following operating systems **[5]**

i) Batch OS

ii) Real time OS

b) Illustrate the difference between a micro Kernel and a layered Kernel architectures of operating system with the help of neat diagrams. **[5]**

c) Write a shell script to find the factorial of a given number. **[5]**

Q3) a) Enlist different process states. Draw and explain process state transition diagram. **[7]**

P.T.O.

b) Consider the following set of processes with the length of the CPU burst time given in milliseconds.

Process	Arrival Time	Burst Time	Priority
P_1	0	3	2
P_2	1	6	1
P_3	4	4	3
P_4	6	2	4

Draw the gantt charts illustrating the execution of these processes using priority (non premptive) and SJF (premptive) algorithms. Calculate average waiting time and average turnaround time. **[8]**

OR

Q4) a) Differentiate between user level threads and Kernel level threads. **[5]**

b) Why PCB is required? Explain the elements of PCB. **[5]**

c) Explain fork ( ) and wait ( ) system call in detail. **[5]**