Total No. of Questions : 10]

SEAT No. :

P2912

[Total No. of Pages : 3

[4958]-1107

T.E.(Information Technology)

OPERATING SYSTEMS

(2012 Course) (Semester-II) (314451)(End - Sem)

Time :2½Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt Q1 or Q2, Q3or Q4, Q5 or Q6, Q 7 or Q8, Q 9 or Q10.***
2) ***Figures to the right hand indicates full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain the difference between a monolithic kernel and a microkernel with advantages & disadvantages. **[5]**

b) Describe in detail the functions of OS as a resource manager. **[5]**

OR

Q2) a) Explain deadlock prevention techniques with example. **[5]**

b) What is Operating system? Explain any two types of OS in detail. **[5]**

Q3) a) Explain thread life cycle **[5]**

b) Explain FCFS scheduling with example **[5]**

OR

Q4) a) Draw and explain process state transition diagram. **[5]**

b) What are the requirements for mutual exclusion? **[5]**

Q5) a) What are requirements for memory management? **[8]**

b) Consider the following page reference string:

1 2 3 4 2 1 5 6 2 1 2 3 7 6 3 2 1 2 3 6 **[8]**

Calculate the no. of page faults for following page replacement algo.

i) FIFO ii) Optimal

iii) LRU

OR

P.T.O.

Q6) a) Explain buddy system with example. **[8]**

b) Consider the following segment table: **[8]**

Segment	Base	Length
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the physical addresses for the following logical addresses?

i) 0,430 ii) 1,10 iii) 2,80 iv) 3,400 v) 4,90

Q7) a) List and briefly explain three techniques for performing I/O. **[8]**

b) List and briefly define file organizatio techniques. **[8]**

OR

Q8) a) List and briefly define three blocking methods. **[8]**

b) Assume a disk with 200 tracks and the disk request queue has random requests in it as follows: 55, 58, 39, 18, 90, 160, 150, 38, 184.

Find the no. of tracks traversed and average seek length if

i) SSTF ii) SCAN

iii) C-SCAN

algorithms are used and initially head is at track no 100. **[8]**

Q9) a) What is kernel module? Explain the process for inserting a module in the kernel. **[8]**

b) With neatly labeled diagram explain embedded linux system architecture **[10]**

OR

Q10) Write a short note on any three **[18]**

a) NACH OS.

b) SOOS

c) Ubuntu EDGE

d) Embedded OS