Total No. of Questions : 10]

SEAT No. :

P2459

[Total No. of Pages : 2

[5253] - 182
T.E. (Computer Engineering)
OPERATING SYSTEMS DESIGN
(2012 Pattern) (Semester - I)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***

Q1) Elaborate on the following algorithms in brief any two. **[10]**

a) iget ( )

b) ifree ( )

c) namei ( )

d) getblk ( )

OR

Q2) a) Describe the structure of a regular file with proper diagrammatic representation. **[5]**

b) What is free space management (FSM)? Explain how bit vector and linked list performs FSM. **[5]**

Q3) a) Write and explain algorithms for **[6]**

i) Allocating region

ii) Freeing a region

b) Elaborate on the race condition in catching signals. **[4]**

OR

Q4) a) Explain with example data structures used for demand paging. **[6]**

b) State in brief page aging. **[4]**

Q5) a) Write short notes on **[8]**

i) Tunis system

ii) Performance Limitations

b) Explain in short — pipe, message queues Explain multiprocessor system with it benefits. **[8]**

P.T.O.

OR

Q6) a) What is ptrace system call? Explain Process tracing in detail. **[8]**

b) Provide solution to producer- Consumer process problem using semaphore. **[8]**

Q7) a) Write short note on egrep, fgrep and sort utility. **[9]**

b) Write short notes on nmake and cmake. **[4]**

c) Differentiate BIOS with EFI? **[3]**

OR

Q8) a) Write a short note on **[6]**

i) Mork Manager

ii) Shim Manager

b) What is secure boot? **[2]**

c) What is make utility? Explain it with example. Consider your own makefile. **[8]**

Q9) a) Write a note on handheld devices. List various OS used for handheld devices. **[6]**

b) Write a short note on **[6]**

i) Frame of references

ii) Windows vista scheduling

c) Draw and explain Android OS architecture. **[6]**

OR

Q10)a) Explain the design issues of multiprocessor scheduling. **[6]**

b) Explain scheduling in **[6]**

i) Linux Operating Systems

ii) UNIX free BSD OS.

c) Compare Windows NTFS and ReFS file systems. **[6]**