Total No. of Questions :12]

SEAT No. :

P798

[Total No. of Pages : 3

[4659] - 210
B. E. (I.T.) (Semester - I)
D : ADVANCED OPERATING SYSTEMS
(2008 Pattern) (Elective - I)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) *Answer any three questions from each section.*
2) *Answer to the two sections should be written in separate books.*
3) *Figure to the right indicates full marks.*
4) *Assume suitable data, if necessary.*

SECTION - I

Q1) a) What is mailbox? Give its significance & explain how it works. Explain functional specification of CREATEMBOX. **[8]**

b) Explain following Unix commands with suitable eg. **[10]**

i) chown ii) chmod

iii) mount iv) unmount

v) useradd

OR

Q2) a) Define operating system. Discuss various architectures of O.S. **[10]**

b) Discuss various system calls for process management. **[8]**

Q3) a) What is Multi tasking operating system? How it is different from multi processing operating system? Draw & explain process state transition diagram in KMOS. **[8]**

b) Discuss the various lists maintained for KMOS. **[8]**

P.T.O.

OR

Q4) a) Enlist various functions of KMOS. Explain functional specifications of KMOSSTART and DISPATCH. **[8]**

b) Write the structure of PCB in KMOS. Discuss use of these fields. **[8]**

Q5) a) Explain different multiprocessor interconnection types with diagrams. **[8]**

b) Discuss UMA, NUMA and NORMA architecture. **[8]**

OR

Q6) a) Discuss different types of Multi Processor Operating Systems. **[8]**

b) What are differences between threads and processes? What are different ways to achieve multiprocessor synchronization? **[8]**

SECTION - II

Q7) a) Explain the concept of kmalloc, vmalloc with eg. How they are different from malloc(), calloc(). **[10]**

b) What is zone? Explain different zone types with diagram. **[8]**

OR

Q8) a) What is slab? Explain the concept of slab allocator and deallocator wrt Linux operating system. **[10]**

b) Explain the concept of High Memory mappings and its types. **[8]**

Q9) a) What is device driver? Explain various disk device driver access strategies. **[8]**

b) What is I/O scheduler? Explain different modes to monitor I/O. **[8]**

OR

Q10)a) Discuss different types of I/O interfaces. **[8]**

b) Explain buffering strategies for character devices. **[8]**

Q11)a) Explain the following system calls for the file system with eg. **[8]**

i) open ii) link

iii) lseek iv) close

b) Explain the role of file descriptor. Give the significance of inode structure. **[8]**

OR

Q12)a) Discuss the various strategies for file blocks allocation. **[8]**

b) Explain data structures for file memory mapping. **[8]**