Total No. of Questions : 12]

SEAT No. :

P1786

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B.E. (Information Technology)

ADVANCED OPERATING SYSTEMS

(2008 Course) (Elective-I(d)) (Semester-I)

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

Instructions to the candidates:

1) ***Answer Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6 from Section-I and Q. 7 or Q. 8, Q. 9 or Q. 10, Q. 11 or Q. 12 from Section-II.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary.***

SECTION-I

Q1) a) Explain following UNIX commands with example Chgrp, Chown, Chmod, ftp. **[8]**

b) Explain any four system calls used for process management. **[8]**

OR

Q2) a) Differentiate between process control block and thread control block. Explain multithreading with example. **[8]**

b) Explain various primitives used for process synchronization. **[8]**

Q3) a) Explain the structure of PCB in KMOS. **[8]**

b) Explain the data structures used by KMOS. **[8]**

OR

Q4) a) Explain process dispatching mechanism? Write functional specifications of process DISPATCH in KMOS. **[8]**

b) Give functional specifications of KMOSSTART and KMOSCLOCK. **[8]**

Q5) a) Differentiate between multitasking O.S. and multiprocessing O.S. What are the advantages of using multiprocessor systems? **[8]**

b) Explain the types of multiprocessor operating system with eg. **[10]**

OR

P.T.O.

Q6) Write short notes on following (Any Three): **[18]**

a) Exokernel.

b) Multi tasking OS.

c) Design considerations of multiprocessing O.S.

d) Process Synchronization.

SECTION-II

Q7) a) Explain the concept of High memory mapping. **[8]**

b) Explain different components of slab allocator and give its significance. **[10]**

OR

Q8) a) Write pseudo C' code for kmalloc ( ), vmalloc and kfree ( ) functions and explain their use. **[10]**

b) Explain the concept of statically allocating on the stack. **[8]**

Q9) a) Write a note on generalized device drivers. **[8]**

b) Explain the process of unification of files and I/O devices. **[8]**

OR

Q10)a) Explain various disk device driver access strategies. **[8]**

b) Explain the concept of I/O scheduler with eg. **[8]**

Q11)a) Explain the following system calls related with file system management: **[8]**

i) Mount

ii) Unmount

iii) Link

iv) Lseek

b) Explain the concept of file system abstraction. **[8]**

OR

Q12)a) Write a note on VFS. **[8]**

b) Explain the process of mapping of file blocks with relevant system calls. **[8]**

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