Total No. of Questions :12]

SEAT No. :

P3413

[Total No. of Pages :3

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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 Q1 or Q2, Q3 or Q4, and Q5 or Q6 from Section I and Q7 or Q8, Q9 or Q10, Q11 or Q12 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 types of Operating Systems with eg. **[8]**

i) Multitasking.

ii) Multiuser.

iii) Multiprocessing.

iv) Multi-threading

b) Explain how mutual exclusion could be implemented using mailboxes. **[8]**

OR

Q2) a) Why multiple queues are in process scheduling? Explain multilevel queue and multilevel queue with feedback scheduling. **[8]**

b) Explain any four UNIX commands for system administration. **[8]**

Q3) a) Draw and explain process state transition diagram in KMOS. **[8]**

b) Explain interrupt management in multi tasking OS using Functional Specification. **[8]**

OR

P.T.O.

Q4) a) How various system lists are maintained in KMOS? Explain with diagram. **[8]**

b) Explain functional specification of SEND and RECEIVE. **[8]**

Q5) a) Explain various types of multiprocessor OS. **[10]**

b) Explain various synchronization primitives in multiprocessor OS. **[8]**

OR

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

i) KMOS.

ii) System calls for process management.

iii) Operating System Architecture.

iv) Thread scheduling.

SECTION -II

Q7) a) Explain demand paging. **[10]**

b) What is a slab? Explain different components of slab allocator. **[8]**

OR

Q8) a) What is zone? What are its various types? **[10]**

b) Explain High Memory mapping. **[8]**

Q9) a) Explain various I/O device types. **[8]**

b) Show different kernel components that are affected by a block device operation with suitable diagram and explain their role. **[8]**

OR

Q10)a) Explain the elevator algorithm with eg. **[8]**

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

Q11)a) Write a note on file security **[8]**

b) Explain Mounting and unmounting of file systems. **[8]**

OR

Q12)a) Explain any four system calls for file system. **[8]**

b) Explain file system Abstraction. **[8]**