

[5254]-187

**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, and 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 any four UNIX commands with example: **[8]**

b) Explain concept of process scheduling. **[8]**

OR

**Q2) a)** Explain multithreading with example. **[8]**

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

**Q3) a)** Draw and explain PCB in KMOS. **[8]**

b) Explain significance and usage of system list and ready list in KMOS. **[8]**

OR

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

b) Explain IPC issues of KMOS. **[8]**

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

b) Explain parallel hardware and interconnections types. **[10]**

**P.T.O.**

OR

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

- a) Operating system architecture
- b) Multi tasking OS
- c) KMOS
- d) Kernel mode processes

**SECTION - II**

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

b) Explain allocation and deallocation of slab to cache. [10]

OR

**Q8)** a) Explain kcalloc (),vmalloc and kfree () functions. [10]

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

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

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

OR

**Q10)**a) Explain any two disk scheduling algorithms. [8]

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

**Q11)**a) Explain any two system calls related with file system management [8]

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

OR

**Q12)**a) Define VFS. Explain its usage. [8]

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

