

No of Questions: [12]

SEAT NO. :

[Total No. of Pages : II]

May-14
**Second Year M.C.A. (Faculty of
Engineering) Operating System
(2008 Course) (610901)**

Max. Marks : 70

3 Hours

Instructions to the candidates:

Answers to the two sections should be written in separate answer books.

Neat diagrams must be drawn wherever necessary.

Figures to the right side indicate full marks.

Use of Calculator is allowed.

Assume Suitable data if necessary

SECTION I

- a) Define an assembler. What is a single pass and 2 pass assembler. [6]
b) Give difference between literals and symbols. How it is used in assembler. [6]

OR

- a) Explain features of MASM. [4]
b) Explain fundamentals of language processing with necessary diagram. [4]
c) Compare application software and system software. [4]
a) Explain the functioning of compile and go loader scheme. What are the advantages and disadvantages of this scheme. [6]
b) What is done under Lexical analysis phase of compiler? Can it detect any kind of errors? [6]

OR

- a) List various phases of compiler. Explain optimization in detail. [6]
b) What are the features of MS DOS Linker? [6]
a) With the help of suitable example explain the Real Time Operating System. [6]
b) Explain functions of Operating System in detail. [5]

OR

- a) Assume you have the following jobs to execute, with the jobs arriving in the order listed here: [6]

PROCESS	ARRIVAL TIME	SERVICE TIME
P1	0	7
P2	2	4
P3	4	1
P4	5	4

Draw Gantt chart, Calculate Average waiting time, total turnaround time and Average Turnaround time using FCFS CPU scheduling algorithm.

- b) i) Batch Processing System [5]
ii) Multiprogramming system
iii) Multitasking system
iv) Time sharing system
v) Real Time systems

SECTION II

- a) 7 What is swapping? Explain how space is allocated using swapping. [6]
- b) Differentiate between Internal and external fragmentation. [6]
- a) 8 Write short note with respect to contiguous memory management scheme [6]
 - i) Sharing
 - ii) Protection
 - iii) Access time (speed)

b) Write a note on virtual memory management scheme

- a) 9 Explain two level and tree structure directory. [6]
- b) Explain in brief: [6]
 - i) Programmed I/O
 - ii) Interrupted driven I/O

OR

- a) 10 Consider a disk system with 100 cylinders. The request to access the cylinders occurs in the sequence: 4, 34, 10, 7, 19, 73, 2, 15, 6, 20. Assume that head is at cylinder 50, what is the total distance the disk arm moves to satisfy all the pending requests for the following disk scheduling algorithms: [6]

- i) FCFS
- ii) SSTF

- b) Explain SCAN disk scheduling algorithm. What are the advantages and disadvantages of this algorithm? [6]

- a) 11 Explain the user, kernel and hardware interface of Linux operating system. [6]
- b) Explain salient features of Linux operating system. [5]

OR

- a) 12 List process management system calls and explain any two? [5]
- b) What are different process states? Explain in brief. [6]