Con.1863-06.   (REVISED COURSE)   TV-8602

(3 Hours)   [Total Marks : 100

N.B. (1) Question No.1 is complusory.
    (2) Solve any **four** questions from questions Nos. 2 to 7.
    (3) Assume suitable data whenever necessary and justify it.

1. (a) Following Program is for 8086 processor. Give result for program after first pass and second **10**
      pass of assembler with relative address of each instuction.

SAMPLE	START	4000
	USING	*, BX
	MOV	BL, NUM1
	ADD	BL, NUM2
	MOV	RESULT,BL
NUM1	DC	10H
NUM2	DC	20H
RESULT	DS	?
	END	

  (b) The available space list of 1K-word memory has the following entries at time t. **10**

Region	Address	Size (Word)
0		200
250		150
450		100
700		185
999		25

The following sequence of allocation requests is then receive

Time	t+1	t+2	t+3	t+4
Size of block	135	25	170	100

to be allocated. Determine the available space list after all these request have been serviced
using   (i) Best-fit and   (ii) First-fit allocation scheme.

2. (a) Explain Macro and Database for 2-pass Macro. **10**
  (b) Explain relocatable loader with reference to following examples. Calculate relocatable address for **10**
      following programs. Consider all instruction as 1-byte instruction and program is stored from location
      0000H and it is loaded starting at location 2010.

LOAD	1234
ADD	9000
BRANCH	4567R
STORE	7000R

Where R indicate relocatable address.

3. (a) Explain the term multiprogramming, multitasking, multiprocessor in context with operating system. **10**
  (b) Explain process and state diagram for PCB. **10**

4. (a) Following are three process which perform specific task. Sequence for processes are each P,Q,R,. **10**
      Give Sequence of address in which instruction within process will execute and why process are
      executed in that sequence.

Process P :-

4000	Addition
4001	Subtraction
4002	Multiply
4003	Division
4004	Take input from keyboard
4005	SORT
4006	Change Sign
4007	Calculate mean

Process Q :-

6000	Data transfer within register
6001	Take complement
6002	Take printout
6003	Addition
6004	Subtraction
6005	Multiply

Process R :-

8000	Multiply
8001	Find greater number
8002	Store result on floppy disk
8003	Addition
8004	Division

(b) Explain different types of scheduler and preemptive non-preemptive scheduling algorithm. 10

5. (a) Explain deadlock and condition for avoidance and prevention of deadlock. 10

(b) "Size of page is too small or too large". What is the effect of this on system performance. 10

6. (a) Differentiate between DOS and UNIX. 10

(b) Explain file organisation and access methods. 10

7. Write detailed notes on : 20
   (a) System calls and drivers
   (b) Page segmented memory
   (c) Interprocess Communication.