[This question paper contains 4 printed pages.]

1932 *Your Roll No.* ....

Question no. 1 is compulsory.

Attempt any five questions from Q. 2 to Q. 8

1. (a) Define the following:

    (i) Page fault

    (ii) Response time

    (iii) Scheduler

    (iv) System call

    (v) Pager (5)

   (b) Define the term file. List any 6 file attributes.

    (4)

(c) What are the advantages of paging memory-management scheme over contiguous memory-management scheme. (3)

(d) Explain critical-section problem. (3)

(e) Discuss four main applications of the Internet. (4)

(f) Give any two advantages of fibre optic cable transmission medium over copper wire transmission medium. (4)

(g) Identify one or more layers of OSI model for the following functions:

(i) Route Determination

(ii) Flow Control (2)

2. (a) Distinguish between the following:

(i) Process and Program

(ii) Short-term and Long-term Scheduler

(iii) Multiprogramming and Multitasking system. (3×3=9)

(b) Define page fault. (1)

3. (a) What are the differences between a trap and interrupt? (2)

(b) Differentiate between Compile-time, Load-time and Execution-time binding.   (5)

(c) What is virtual memory? Explain.   (3)

4. (a) Explain the concept of Swapping. Also give a suitable example.   (5)

(b) Differentiate between sequential access method and direct access method.   (4)

(c) What is Dispatcher?   (1)

5. (a) Consider the following set of processes, with the length of the CPU burst times given in milliseconds:

Process	Burst Time	Priority
P1	8	2
P2	2	1
P3	3	1
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order P1, P2, P3, P4 and P5 all at time t=0.

    (i) Draw four Gantt charts illustrating the execution of these processes using FCFS, SJ (equal burst length processes are scheduled in FCFS), a non-preemptive priority (small priority number means high priority, equal priority processes are schedule in FCFS), and RR (quantum = 1) scheduling.

    (ii) Calculate average waiting time and average turnaround time for all above mentioned scheduling algorithms. (8)

(b) What will be the state of the processor, when the process is waiting for the vent to occur? (2)

6. (a) List advantages of Broadcast network over a point-to-point networks. (3)

(b) What are the advantages of computer networks as far as business application is concerned? (7)

7. Write short notes on the following:

    (i) IP addresses

    (ii) World Wide Web (10)

8. Explain the logical relationship among network, transport and application layers in detail. (10)

(100)