

COPYRIGHT RESERVED BCA(I) — COMP/1/VI/11

2011

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

*Answer from **both** the Groups as directed.*

Group – A

(Objective Type Questions)

Answer all questions.

1. Choose the correct answer of the following :

2×10 = 20

(a) Round robin scheduling is essentially the preemptive version of _____.

- (i) FIFO
- (ii) Shortest job first
- (iii) Shortest remaining
- (iv) Longest time first

JX – 20/5

(Turn over)

- (b) Which of the following will determine your choice of systems software for your computer?
- (i) Is the application software you want to use compatible with it ?
 - (ii) Is it expensive ?
 - (iii) Is it compatible with your hardware ?
 - (iv) Both (i) and (iii)
- (c) The main program is loaded into memory and is executed. This type of loading is called _____.
- (i) Static loading
 - (ii) Dynamic loading
 - (iii) Dynamic linking
 - (iv) Over lays
- (d) What is the memory from 1K-640 K called :
- (i) Extended Memory
 - (ii) Normal Memory
 - (iii) Low Memory
 - (iv) Conventional Memory
- (e) Virtual memory is _____.
- (i) An extremely large main memory
 - (ii) An extremely large secondary memory

- (iii) An illusion of extremely large main memory
 - (iv) A type of memory used in super computers
- (f) If the Disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks request are 98, 37, 14, 124, 65, 67 :
- (i) 310
 - (ii) 324
 - (iii) 315
 - (iv) 321
- (g) The number of processes completed per unit time is known as _____.
- (i) Output
 - (ii) Throughput
 - (iii) Efficiency
 - (iv) Capacity
- (h) Which of the following file name extension suggests that the file is backup copy of another file ?
- (i) TXT
 - (ii) COM

(iii) BAS

(iv) BAK

(i) A system is a multi-programming system because :

(i) There are multiple device connected to the system

(ii) There are multiple person who have an account on that system

(iii) There are multiple memory resident ready – to – run programs in the system

(j) Anis a program and that controls the interface between program and acts as an interface between the user and computer hardware :

(i) Operating system

(ii) Window XP

(iii) Process

(iv) Both (i) and (ii)

Group – B

(Long-answer Type Questions)

Answer any **four** of the following : $15 \times 4 = 60$

2. Describe an Operating System. Explain the differences between Personal Computer Operating System and Large Computer

Operating System. Explain the various characteristics of an operating system. Give typical examples.

3. Compare the following scheduling algorithms :
 - (i) FCFS
 - (ii) SJF
 - (iii) RR
 - (iv) Multi-level queues
4. What is process ? Explain 2 stated process. Explain 5 State Process Model. Explain operation on Process-Creation-Termination.
5. What is paging ? Explain basic method used for paging ? Deadlock :
 - (a) What do you understand by safe and unsafe state ? Explain Bankers algorithm with necessary data structure.
 - (b) Explain 2 strategies used for eliminating deadlocks.
6. State and explain various characteristic criteria for CPU scheduling algorithm. Describe priority scheduling algorithm. List the various scheduling criteria in CPU scheduling.

7. What are system calls ? Give examples of system calls in any typical operating system. Describe the layered approach to W. S. design. Explain its advantages.
8. Describe the following method for allocating disk space :
- (i) Linked allocation
 - (ii) Indexed allocation
 - (iii) Contiguous allocation
9. Explain about demand, paged memory management scheme in detail.
10. Specify the structure of the page map table and bring out its use in memory management. Differentiate between internal and external fragmentation.

