Reg. No. : | | | | | | | | | | |

Question Paper Code : Z 8436

B.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Fourth Semester

BCS 246 — OPERATING SYSTEMS

(Common to B.Sc. Information Technology)

(Regulation 2003)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give two characteristics of main frame systems.
2. Differentiate between a process and a thread.
3. What is co-scheduling?
4. How synchronization is achieved in hardware?
5. Give an example for race condition.
6. What is relocation?
7. Define Thrashing.
8. What are the different file access methods?
9. What is RAID?
10. What is the use of disk cache?

PART B — (5 × 16 = 80 marks)

11. (a) Describe distributed and clustered computing environments. (16)

Or

(b) Discuss the co-operating processes and the different methods used for interprocess communication. (16)

12. (a) Explain round-robin and multilevel feedback queue scheduling policies with examples. (16)

Or

(b) Give the structure of a monitor. How is synchronization achieved using monitor. (16)

13. (a) Consider a system with a total of 150 units of memory allocated to three processes as shown :

Process	Max	Hold
1	70	45
2	60	40
3	60	15

Apply Banker's algorithm to determine whether it would be safe to grant the following requests :

(i) Process 4 has an initial need of 25 units and maximum need of 60 units.

(ii) Process 4 has an initial need of 35 units and maximum need of 60 units. (16)

Or

(b) Explain paging and segmentation, with suitable block diagram. (16)

14. (a) Discuss the various page replacement policies with suitable examples. (16)

Or

(b) Discuss the translation look aside buffer and inverted page tables with examples. (16)

15. (a) Discuss the various approaches used for file allocation and free space management. (16)

Or

(b) Explain the various disk scheduling policies with examples. (16)