65323

III Semester B.C.A. Examination, April/May 2023
(CBCS) (Repeaters)
COMPUTER SCIENCE
BCA 305T : Operating System

Time : 3 Hours Max. Marks : 100

***Instruction** : Answer **all** Sections.*

SECTION – A

I. Answer **any ten** questions. **Each** question carries **two** marks. **(10×2=20)**

1) Mention any two functions of operating system.
2) Differentiate process and program.
3) What is mutual exclusion ?
4) What are the necessary conditions for deadlock ?
5) What is thread ?
6) What is fragmentation ?
7) Define virtual memory.
8) What is demand paging ?
9) Define seek time.

SECTION – B

II. Answer **any five** questions. **Each** question carries **five** marks. **(5×5=25)**

13) Write a note on time sharing system.
14) Write a note on system calls.
15) Explain types of semaphores.
16) Explain process state transition with neat diagram.

P.T.O.

17) Explain the requirements to critical section problems.

18) Explain resource allocation graph with necessary diagram.

19) Write a note on directory structure.

20) Write a note on domain protection.

SECTION – C

III. Answer **any three** questions. **Each** question carries **fifteen** marks. **(3×15=45)**

21) a) Explain different types of schedulers. **8**

b) Explain SJF scheduling algorithm with an example and a Gantt chart. **7**

22) a) Explain Dining – Philosophers problem algorithm. **8**

b) Explain different methods of deadlock prevention. **7**

23) Discuss in detail contiguous memory allocation. **15**

24) Explain the following disk scheduling algorithm : **15**

i) FCFS ii) SSTF iii) SCAN

25) a) Explain user authentication in detail. **8**

b) Write a note on Goals of protection. **7**

SECTION – D

IV. Answer **any one** question. **Each** question carries **ten** marks. **(1×10=10)**

26) Explain components and services of an operating system. **10**

27) a) Explain FIFO page replacement algorithm with example. **5**

b) Write a note on Logical and Physical address space. **5**
