15323

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

III Semester B.C.A. Degree Examination, March/April - 2021

COMPUTER APPLICATIONS

Operating System

(CBCS Scheme)

Time : 3 Hours **Maximum Marks : 100**

Instructions to Candidates:

Answer **all** the sections.

SECTION - A

I. Answer any **Ten** questions. **(10×2=20)**

1. Define process.
2. What is Process Control Block (PCB)?
3. What is context switching?
4. Define Mutual Exclusion.
5. What is dead lock?
6. What is ageing?
7. Differentiate logical and physical address.
8. What are the various file attribute?
9. Define seek time?
10. What is Beladys Anomaly?
11. Define worm?
12. What is security?

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SECTION - B

II. Answer any **Five** of the following : **(5×5=25)**

13. Differentiate between Batch processing and multi processing operating system.
14. Explain process state with neat diagram.
15. What are the types of Fragmentation. Explain.
16. Explain semaphore.
17. State and explain different types of virus.
18. Explain directory structure.
19. Explain the structure of hard disk.
20. Discuss swap - space management.

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SECTION - C

III. Answer any **Three** questions. **(3×15=45)**

21. a) Explain the objectives of operating system. **(8)**

    b) Differentiate between pre-emptive and Non Pre-emptive scheduling algorithm. **(7)**

22. a) Explain the different types of schedulers with neat diagram. **(7)**

    b) Suppose a system uses priority scheduling, where a small integer means a high priority.

Process	Burst time	Priority
P_1	8	3
P_2	2	1
P_3	4	3
P_4	2	4
P_5	6	5

    i. Draw Gantt's chart illustrating the execution of these process using FCFS and priority.

    ii. Calculate the average waiting time and turn around time. **(8)**

23. Explain Different classical problems of synchronization. **(15)**

24. a) Explain methods of Dead lock handling. **(8)**

b) Explain Bankers Algorithm. **(7)**

25. a) Explain paging with an example. **(7)**

b) How many page faults will occur for FIFO and optimal replacement algorithm for the following reference string with three page frames. **(8)**

Consider the reference string.
7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

SECTION - D

IV. Answer any **One** question. **(1×10=10)**

26. Write a short note on

a) System calls **(5)**

b) Compaction **(5)**

27. Explain different types of file Allocation method. **(10)**

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