



SS – 690

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III Semester B.C.A. Degree Examination, Nov./Dec. 2018
(Y2K8 Scheme) (Repeaters)
COMPUTER SCIENCE
BCA 304 : OPERATING SYSTEMS

Time : 3 Hours

Max. Marks : 90/100

- Instructions :** i) Answer **all** Sections.
ii) Section – **D** is applicable **only** to students who have taken admission in **2011-12** and onwards.

SECTION – A

- I. Answer **any ten** questions : **(10×2=20)**
- 1) Define operating system. Mention any two types of operating system.
 - 2) Define spooling.
 - 3) Explain Ageing.
 - 4) What are the characteristics of deadlock ?
 - 5) What is a semaphore ?
 - 6) Write the difference between safe state and unsafe state.
 - 7) What is page fault ?
 - 8) What is hit ratio ?
 - 9) List the functions of file management system.
 - 10) List any two advantages and disadvantages of real time system.
 - 11) What is encryption ?
 - 12) What is kernel dispatcher ?



SECTION – B

- II. Answer **any five** questions : **(5×5=25)**
- 13) Explain states of a process with a neat diagram.
 - 14) Explain Round-Robin scheduling algorithm
 - 15) Explain Multi-level Queue Scheduling (MLQ).
 - 16) Explain contiguous memory allocation.
 - 17) Explain Swapping.

P.T.O.



- 18) Explain demand paging with an example.
- 19) Briefly explain file allocation methods.
- 20) Explain any five types of viruses.

SECTION - C

III. Answer **any three** questions :

(3×15=45)

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| 21) a) Write the difference between preemptive and non-preemptive scheduling. | 7 |
| b) Explain Dining-Philosopher problem. | 8 |
| 22) a) Define deadlock. Explain methods for handling deadlock. | 10 |
| b) List any five difference between paging and segmentation. | 5 |
| 23) What is page replacement ? Why we need it ? Brief the different page replacement algorithms. | 15 |
| 24) a) Explain the different types of a file accessing methods. | 9 |
| b) Explain Banker's algorithm. | 6 |
| 25) a) Explain disk scheduling algorithms. | 9 |
| b) Write short notes on swapping with a diagram. | 6 |

SECTION - D

IV. Answer **any one** question :

(1×10=10)

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|---|---|
| 26) Write short notes on: | |
| a) Structure of a harddisk. | 5 |
| b) Three goals of protection. | 5 |
| 27) Consider the following set of process | |

Process	Burst time
P ₁	10
P ₂	1
P ₃	2
P ₄	10
P ₅	5

The process arrive in the order P₁, P₂, P₃, P₄ and P₅. For the above, obtain the Gantt chart and Average waiting time using i) FCFS and ii) Round Robin. (Time Quantum 4 ms).