K24P 4502

Reg. No. : .....

Name : .....

I Semester M.C.A. Degree (C.B.S.S.-Reg./Supple./Imp.)
Examination, November 2024
(2021 Admission Onwards)
MCA1C02 : SYSTEM SOFTWARE AND OPERATING SYSTEMS

Time : 3 Hours Max. Marks : 60

SECTION – A

Answer **all** questions. **Each** question carries **two** marks.

1. What are the fundamental steps and components involved in the assembly process of a computer ?
2. How do macros contribute to streamlining repetitive tasks in the OS environment ?
3. What functions does the loader execute in the process of loading a program into memory ?
4. What is the mechanism behind the linking process for overlays ?
5. How do deadlock and starvation occur in a computing system ?
6. When will CPU scheduling occur within the operating system ?
7. What is virtual memory ? How is it implemented ?
8. Explain the process-paging.
9. With the help of neat diagram, explain the structure of disk.
10. What are tertiary storage devices ? **(10×2=20)**

SECTION – B

Answer **all** questions. **Each** question carries **eight** marks.

11. a) Explain basic components of assembly language.

OR

b) Explain the design of a macro pre-processor.

P.T.O.

12. a) What is lexical analyser ? Explain its role in compilation process.

OR

b) How are tokens specified in compiler ?

13. a) Explain the techniques to solve critical section problem.

OR

b) Describe different multithreading models.

14. a) Define the following :

i) Main Memory Management.

ii) File Management. **(4+4)**

OR

b) How does the OS promote the transparency through file names ?

15. a) Explain the basic steps involved in handling I/O requests on operating system.

OR

b) Compare and contrast paging and swapping in memory management. How does swap space management differ in these approaches ?

(5×8=40)