**K23P 3462**

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

Name : .....................................

### I Semester M.C.A. Degree (C.B.S.S. – Reg./Supple./Imp.) Examination, November 2023
### (2020 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. Define Assembly Language.

2. List the advantages of two pass assembler.

3. What is the purpose of relocation in linker ?

4. What is a token ? Give some examples.

5. What are the OS features needed for multiprogramming ?

6. What are semaphores ? Give an example.

7. What is meant by page replacement ? Why is it necessary ?

8. What is meant by memory mapped files ?

9. What are interrupts ? How are they handled ?

10. Explain disk management.

## SECTION – B

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

11. a) What are macros ?

OR

b) Explain macro expansion tasks.

P.T.O.

12. a) Differentiate between linker and loader.

OR

b) What are the phases of compiler ?

13. a) Consider the following jobs to be executed with one processor :

| Pi | Burst Time |
|----|-----------|
| 0 | 80 |
| 1 | 20 |
| 2 | 10 |
| 3 | 20 |
| 4 | 50 |

Compute the average waiting time for the processes using FCFS and SJF scheduling. Use respective Gantt charts to illustrate the scheduling.

OR

b) Illustrate the responsibilities of operating system.

14. a) Explain file handling.

OR

b) What are the different types of page tables used in operating systems ?

15. a) What is disk scheduling ? Compare any two disk scheduling algorithms.

OR

b) How does the application I/O interface facilitate communication between software applications and hardware for both blocking and non-blocking I/O operations ?