M.C.A. (SEMESTER I) Mid Semester Examination 2024-25
MCAC105: Operating Systems

Time Allowed: *One* hour

Maximum Marks: 20

Note: Answer all the questions. Answers should be brief and to the point. Figures on the right-hand side margin indicate Max. Marks for each Question.

1. Draw a neat diagram representing the different process state transitions. Explain the following transitions: **(5)**

   (i) Blocked to Blocked Suspend (ii) Ready to Ready Suspend

2. Distinguish between Process Switch and Context Switch. In what ways are they related? Comment on the statement- **(5)** "Context switch time is a pure overhead".

3. Compute the Average Waiting and Average Turnaround time, if First Come First Serve (FCFS) scheduling **(5)** algorithm is used to schedule following jobs on a Single Processor system:

Process	Arrival Time	Burst Time
P1	0	23
P2	1	5
P3	2	7
P4	4	2

   Discuss with appropriate reasons whether this is an instance of '**Convoy effect**'.

4. What is Process Control Block? What information is stored in it? Consider a Computer System having address **(5)** bus of size 64-bit. What will be the total logically addressable memory space?