

**2024**

**(Session : 2022-25)**

*Time : 3 hours*

*Full Marks : 60*

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

*Answer from both the Groups as directed.*

**Group – A**

1. Explain the following in **one** line :  $1 \times 10 = 10$
- (a) PCB
  - (b) Turn around time
  - (c) System call
  - (d) Waiting time
  - (e) Multiprogramming
  - (f) Kernel
  - (g) Thread

- (h) Pre-emptive
- (i) Contiguous memory
- (j) Batch system

2. Explain process state with a neat and labelled diagram. 5

**Group - B**

Answer any **three** questions of the following :  
15×3 = 45

- 3. (a) What is logical and physical memory ?
- (b) Explain Paging with neat diagram.
- 4. (a) Explain first come first serve algorithm and round robin algorithm.
- (b) Consider the set of six processes whose arrival time and burst time are given below :

Process id	Arrival time	Burst time
P <sub>1</sub>	5	5
P <sub>2</sub>	4	6
P <sub>3</sub>	3	7
P <sub>4</sub>	1	9
P <sub>5</sub>	2	2
P <sub>6</sub>	6	3

MP - 19/2

(2)

Contd.

If the CPU scheduling policy is Round Robin with time quantum = 3. Calculate average waiting time and average turn around time. Prepare Gantt Chart.

- 5. (a) What is free space management technique ? Explain any two techniques.
- (b) Write down advantages of swap space management technique.
- 6. Write short notes on any **three** of the following :
  - (a) Semaphor
  - (b) Deadlock
  - (c) Mutual exclusion
  - (d) Critical section
- 7. (a) What is Operating System ? Explain different services provided by operating system.
- (b) What is Virtual memory ?



MP - 19/2 (1,200)

(3)

UESE(III) — BCA  
(CC - 6)