

**Computer Science [Honours]**

**[CBCS]**

**B.Sc. Third Semester End Examination-2023**

**(Regular & Supplementary Paper)**

**PAPER-C6T**

*Full Marks: 40*

*Time: 02 Hrs*

*The figures in the right hand margin indicate marks*

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

*Illustrate the answers wherever necessary*

**Group A**

**1) Answer any FIVE questions of the following:                      5x2= 10**

- a) What do you mean by 'convoy effect'?
- b) What is busy waiting?
- c) What is the difference between deadlock and starvation?
- d) What is Fence register?
- e) What is dirty bit?
- f) What is the function of medium term scheduler?
- g) What is race condition?
- h) What is system cell?

(2)

**Group B**

Answer any FOUR questions of the following: **4x5 = 20**

2) Find the average term around time using perceptive SJF

<u>Process</u>	<u>Arrival Time</u>	<u>ET</u>
P <sub>1</sub>	2	6
P <sub>2</sub>	1	5
P <sub>3</sub>	3	2
P <sub>4</sub>	6	1

3) What is deadlock? Write down the necessary condition for deadlock

4) Consider the following page reference string:

1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6

How many page faults would occur for LRU replacement algorithm, assuming 3 frames are empty?

5) Why are page size always power of 2? What is thrashing?

6) a) A system with following process and resources

<u>Process</u>	<u>Resource Allocation</u>	<u>Max. Need</u>
A	3	9
B	2	4
C	2	7

Available resource = 3

Is the system in a safe state?

b) What do you mean by RAG?

7) What is paging? What fragmentation occurs in paging and why?

(3)

**Group C**

Answer any ONE question of the following: **1x10 = 10**

8) a) Consider the following segment table

<u>Segment</u>	<u>Base</u>	<u>Length</u>
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the Physical addresses for the following logical addresses?

a) 0,430      b)1,10      c) 2,500

b) Under What circumstances do page fault occurs? Describe the action taken by the os when a page fault occurs.

9) Write short notes on **4 x 2.5**

- a) Demand paging
- b) Virtual memory
- c) Semaphore
- d) PCB

-----