

2021

Computer Science

[HONOURS]

(CBCS)

(B.Sc. Third Semester End Examination-2021)

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

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

- a) What is aging?
- b) What is thrashing?
- c) State Belady's anomaly.
- d) What are the functions of Kernel?
- e) What is race condition?
- f) What is the significance of busy waiting?
- g) What is the difference between paging and segmentation?
- h) What do you mean by PCB?

Answer any FOUR questions of the following: 5x4 = 20

2. Find the average waiting time and average turn around time for the following preemptive SJF SCHEDULING.

(2)

Process	Arrival time	Burst time
P ₁	2	6
P ₂	1	5
P ₃	3	2
P ₄	6	1

3. What will be the output of the following system call and explain each step:

```
# include <Unistd.h>
Main ( )
{
fork();
fork ( );
printf (“Computer Science”);
}
```

4. What do you mean by ‘suspend’ ‘suspend block’ and ‘suspend ready’ state? $2+1\frac{1}{2}+1\frac{1}{2}$
5. What is round robin scheduling write its advantages and disadvantages. $3+2$
6. Given memory partition of 110 K, 510 K, 210 K, 310 K, and 610 K. How would best- fit algorithm place processes of 222 K, 427 K, 122 K and 436 K in order? 5

(3)

7. What is the difference between internal and external fragmentation? What fragmentation occurs in a Paging system and why? $2+1+2$

Answer any ONE questions of the following: 10x1 = 10

8. a) What is Page fault? under what circumstances do page fault occurs? $1+4$
b) How many page faults occurs for the following page reference string for four page frames using LRU 1,2,3,4,5,3,4,1,6,7,8,7,8,9,8,9,5,4,5,4,2. 5
9. a) What is dead lock? Write down the necessary conditions for deadlock. $1+4$
b) What is semaphore? How semaphore is used to solve critical section problem?
What is mutual exclusion? $2+2+1$
