

**BACHELOR OF SCIENCE (COMPUTER SCIENCE) (CBCS - 2018 COURSE)**  
**T.Y.B.Sc.(Computer Science) Sem-V : WINTER :- 2021**  
**SUBJECT: SYSTEM PROGRAMMING**

Day : Wednesday  
Date 19-01-2022

W-20114-2021

Time : 02:00 PM-05:00 PM  
Max. Marks: 60

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

**Q.1** Answer **ANY TWO** of the following: **(12)**

- a) What is deadlock? Explain necessary conditions for deadlock to occur.
- b) Define operating system? Explain functions performed by an operating system?
- c) Describe different attributes and types of file.

**Q.2** Answer **ANY TWO** of the following: **(12)**

- a) Illustrate different types of system call.
- b) Define paging? Explain page table implementation in brief.
- c) Consider following set of jobs

Job	Arrival Time	Burst Time
P <sub>1</sub>	0	8
P <sub>2</sub>	1	4
P <sub>3</sub>	2	9
P <sub>4</sub>	3	5

Calculate the average turnaround time and total waiting time using (SJF) Shortest Job first algorithm.

**Q.3** Answer **ANY TWO** of the following: **(12)**

- a) Describe different types of directory.
- b) Explain Linked and Indexed Allocation methods of file.
- c) Illustrate First Come First Serve (FCFS) algorithm with an example.

**Q.4** Answer **ANY THREE** of the following: **(12)**

- a) Explain concept of swapping and overlapped swapping.
- b) Describe simple monitor concept.
- c) Explain sequential file access method.
- d) Write a note on segmentation.

**Q.5** Answer **ANY FOUR** of the following: **(12)**

- a) Explain buffering and spooling concept.
- b) Write different types of operating system.
- c) Discuss deadlock prevention strategies.
- d) Write criteria used for evaluating cpu scheduling algorithm.
- e) Explain Round Robin algorithm with example.
- f) Write a note on interrupts.