

**Roll No.**

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**Total No. of Pages : 02**

**Total No. of Questions : 07**

**B.Sc.(IT) (2014 Batch) (Sem.-3)**

## OPERATING SYSTEM

**Subject Code : BS-203**

**M.Code : 12514**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and a student has to attempt any **FOUR** questions.

## SECTION-A

**Q1 Answer briefly :**

- What is the main advantage of multiprogramming?
- What is the difference between a hard real time system and soft real time system?
- Define the term semaphore.
- What is the difference between short term scheduler and long term scheduler?
- Why is page size always power of 2?
- What is demand paging?
- What is meant by memory reference string?
- What do you mean by file descriptors?
- What is disk formatting and what basic information is stored with each disk sector?
- Give two examples of well-known program threats.

## SECTION-B

- Q2 Define the term process and differentiate between heavyweight and lightweight processes. Assume that following jobs have arrived in the order 1,2,3,4 and 5 :

Job	Arrival time	Burst time	Priority
1	0	15	2
2	2	03	1
3	5	05	5
4	6	08	4
5	7	12	3

Give Gantt chart and calculate Average Turn-around Time and Average Waiting Time for :

- FCFS
- SJF scheduling and Preemptive priority scheduling

**(Note : low integer value in priority column means low priority)**

- Q3 Define critical section. What are the requirements to solve critical-section problem? Give Bakery algorithm to solve the critical section problem.
- Q4
- What is demand paging and segmentation with paging?
  - Give memory partition of 100K, 500K, 200K, 300K and 600K (in order). How would each of the first fit, best fit and worst fit algorithm place process of 212 K, 417 K, 112K, and 426 K(in order)? Which algorithm makes the most efficient use of memory?
- Q5 What is disk scheduling? Explain the C-SCAN scheduling by giving an example.
- Q6 Discuss different file allocation methods in detail.
- Q7 Explain different security techniques with their advantages and disadvantages.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**