

B.C.A. (2010 COURSE SEM- III : WINTER - 2017
SUBJECT: OPERATING SYSTEM CONCEPTS

Day : **Friday**
Date : **10/11/2017**

Time: **02.00 PM TO 05.00 PM**
Max. Marks: 70.

W-2017-1636

N.B.:

- 1) Q. No. 1 is **COMPULSORY**.
- 2) Attempt any **FOUR** questions from Q. No. 2 to Q. No. 7
- 3) Figures to the **RIGHT** indicate full marks.

Q.1 Consider the following set of processes with the arrival time and CPU burst time. **(14)**

Process	Arrival time (am)	Burst time (min.)
P ₁	6.00	09
P ₂	6.03	03
P ₃	6.07	01
P ₄	6.13	03

Calculate average waiting time and turnaround time in case of:

- a) First come first served
- b) Shortest job first.

Q.2 Explain various operating system structures with their merits and demerits. **(14)**

Q.3 a) Explain the terms - **(07)**
i) Process control block
ii) Process switching

b) Explain priority based preemptive scheduling algorithm in detail. **(07)**

Q.4 a) Discuss the memory management with linked list and bit map in brief. **(07)**

b) Illustrate second chance page replacement algorithm. **(07)**

Q.5 What is segmentation? Explain the concept of segmentation with paging in detail. **(14)**

Q.6 What is deadlock? Give the conditions for occurrence of deadlock. Also explain **(14)**
deadlock avoidance strategies.

Q.7 Write short notes on any **TWO** of the following: **(14)**

- a) Disk space management
- b) Directories
- c) Schedulers