Exam.Code:0002
Sub. Code: 0158

2071

B.A./B.Sc. (General) Second Semester

Computer Science

Paper- CS-03 (Theory - A): Operating System Concepts

Time allowed: 3 Hours Max. Marks: 30

NOTE: *Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I -IV.*

x-x-x

UNIT – I

I. What is an operating system? What is the need for an operating system? Discuss the major functions of an operating system with examples. (6)

II. Discuss the following in detail:-

a) Multi User Operating System

b) Real Time Operating System (2x3)

UNIT - II

III. Define Process. Discuss in detail the Process Control Block. (6)

IV. Consider the set of 5 processes whose arrival time and burst time are given below.

Process Id	Arrival Time	Burst Time
P1	0	5
P2	1	3
P3	2	1
P4	3	2
P5	4	3

If the CPU scheduling policy is Round Robin with time quantum = 2 unit, calculate the average waiting time and average turn-around time. (6)

UNIT - III

V. What is a resource allocation graph? Discuss giving an example for the same. (6)

VI. What are the methods for handling deadlocks? Explain any one method in detail. (6)

P.T.O.

UNIT - IV

VII. Explain the concept of virtual memory and demand paging. (6)

VIII. Discuss the following Page Replacement Algorithms in brief giving their advantages and disadvantages:

a) LRU

b) FIFO (2x3)

UNIT - V

IX. Answer the following questions briefly:-

a) Write a short note on multilevel feedback queue.

b) Differentiate between multitasking and multiprocessing.

c) Explain briefly Optimal Page Replacement. (3x2)

x-x-x