S.D.E.

M.C.A. SEM -II : SUMMER - 2018
SUBJECT : OPERATING SYSTEMS

Day : **Wednesday** | **S-2018-4609** | Time : **02.00 P.M. TO 05.00 P.M.**
Date : **30/05/2018** | Max. Marks : 80

N.B.:

1) Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section – II.
2) Answers to both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 What is operating system? Discuss various structures of it. **[10]**

Q.2 What do you mean by process? Explain various process states with help of diagram. **[10]**

Q.3 Explain segmentation with paging in detail. **[10]**

Q.4 What is semaphore? Describe queuing implementation of semaphore in detail. **[10]**

Q.5 Explain various file security flaws in brief. **[10]**

Q.6 Describe the following terms: **[10]**
a) Memory management unit **b)** Multiprocessing **c)** User authentication

Q.7 Write short notes on **ANY TWO** of the following: **[10]**
a) Interrupt Handler
b) Time slice scheduling
c) Conditional critical region

SECTION – II

Q.8 Consider operating system resides at the top of memory, below it 26k hole, then some part of memory in use, below it 70k hole, then some part of memory in use, below it 24k hole, then some part of memory in use, below it 35k hole is there. A request by 22k process is made to system. Draw the basic structure of memory and apply the following algorithms on it: **[15]**
a) Best fit **b)** Worst fit **c)** First fit **d)** Next fit

Q.9 Suppose system want to refers the pages in the following sequence : **[15]**
0, 2, 3, 1, 3, 2, 0, 1, 0, 2, 3.
Find out the page to be replaced at the end using LRU with matrix. Also explain the algorithm.

Q.10 Consider the following case: **[15]**

Process	Arrival time	Run time (min)
P_1	10.00	6
P_2	10.03	2
P_3	10.04	1
P_4	10.07	5

Calculate average waiting and turnaround time in case of:
a) FCFS **b)** SJF **c)** SRTN

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