Or

Compare the various attributes of paging and segmentation in detail. Discuss briefly the demand paging. **12**

13. In the following system :

	Allocation	Max	Total Allocation	Total Exist
	R1 R2 R3	**R1 R2 R3**	**R1 R2 R3**	**R1 R2 R3**
P1	2 2 3	3 6 8	5 4 10	7 7 10
P2	2 0 3	4 3 3		
P3	1 2 4	3 4 4		

(a) What is the Content of Matrix Needs ? **1**

(b) Is the current allocation safe state ? **1**

(c) Would the following requests be granted in the current state ?

(i) Process P1 requests (1, 1, 0)

(ii) Process P3 requests (0, 1, 0)

(iii) Process P2 requests (0, 1, 0). **9**

Or

Write short notes on the following :

(a) LINUX Operating System **5**

(b) Concurrent Processes. **6**

Subject Code—0117

P.G.D.C.A./M.Sc./M.C.A. EXAMINATION

(For Batch 2009 Onwards Main & Re-appear)

(Second Semester) (MCA 3 Years)

OPERATING SYSTEM

MS-08

Time : 3 *Hours* *Maximum Marks :* 70

Section A

Note : Attempt any *Seven* questions. **7×5=35**

1. How different processes area managed simultaneously by an Operating System ? Discuss.

2. Describe the difference betwen symmetric and asymmetric multiprocessing. What are the two advantages and one disadvantage of multiprocessor systems ?

3. Briefly discuss various file allocation methods.

4. What is CPU Scheduling ? Differentiate between preemptive and non-preemptive scheduling.

5. Why are segmentation and paging sometimes combined into one scheme ?

6. Under what circumstances do page fault occurs. Describe the actions taken by the operating system when a page fault occurs.

7. What are the necessary conditions to hold a deadlock in a system ?

8. Describe mutual exclusion in terms of concurrent prosseses.

9. Write short note on Disk Scheduling.

10. Briefly discuss the architecture of UNIX Operating System.

Section B

Note : Attempt all the questions.

11. What is an Operating System ? Explain the terms timesharing, multiprogramming, multitasking, and batch processing.

Or

Explain the concept of file. How is the information accessed from files ? Also explain the purpose of various file operations. **12**

12. Consider the following page-replacement algorithms. Rank these algorithms on a five-point scale from "bad" "to perfect" according to their page-fault rate. Separate those algorithms that suffer from Belady's anomaly from those that do not

(a) LRU Replacement

(b) FIFO Replacement

(c) Optimal Replacement

(d) Second-chance Replacement.