Roll No. .... Total Pages : 03

BCA/M-19 **19013**

OPERATING SYSTEM

BCA-201

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory.

Compulsory Question

1. (a) Explain briefly historical evolution of operating system. **4**

   (b) Write the necessary and sufficient conditions for deadlocks. **4**

   (c) Distinguish between Internal and External fragmentation with example. **4**

   (d) Discuss hierarchical and acyclic graph directory structure. **4**

Unit I

2. (a) What is distributed operating system ? Explain different models of distributed O.S. **10**

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(b) What is system program ? Explain different categories of system program. **6**

3. (a) Explain the concept of a process. What is the difference between process and program ? Also explain various processes states and their transitions. **10**

(b) Explain various services of an operating system. **6**

Unit II

4. Explain various CPU scheduling policies by giving suitable example. **16**

5. (a) Describe Banker's algorithm by using example. **8**

(b) List the approaches used for deadlock recovery. **8**

Unit III

6. Explain various process co-ordination problems and their solutions. **16**

7. (a) Explain the concept of segmentation. Write the advantages and disadvantages of this method. **10**

(b) What do you mean by Thrashing ? Explain. **6**

Unit IV

8. (a) Explain C-Scan and C-look disk scheduling with example. **6**

(b) Explain contiguous and linked allocation methods. **10**

9. (a) What do you mean by file protection ? Why we need file protection ? **8**

(b) Write short note on the disk structure. **8**