

(i) Printed Pages : 2

Roll No. ....

(ii) Questions : 9

Sub. Code : 

1	3	4	5	1
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Exam. Code : 

5	0	4	4
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**Bachelor of Computer Application (FYUP) 4<sup>th</sup> Semester  
(2056)**

**OPERATING SYSTEM CONCEPTS**

**Paper : BCA-DSC-4 (Maj)-401**

**Time Allowed : Three Hours]**

**[Maximum Marks : 90**

**Note :—** Attempt **five** questions in all, by selecting **one** question each from Units I, II, III, and IV. Question No. **9** is compulsory.

**UNIT-I**

1. (a) Define Operating System. Explain its functions and services provided to the user. 9
- (b) What is CPU scheduling? Discuss the Round Robin CPU scheduling algorithm with an example. 9
2. (a) Discuss the uses of Multi-user, Multitasking, and Multiprocessing operating systems. 9
- (b) What is a process? Describe the different states of a process with the help of a diagram. 9

**UNIT-II**

3. (a) What is a deadlock? Discuss different methods of handling deadlocks. 9
- (b) Discuss the differences between internal and external fragmentation. 9

4. (a) Explain the concept of Paging in memory management. 9
- (b) Discuss the FIFO (First-In-First-Out) Page Replacement algorithm with a suitable example. 9

### UNIT-III

5. (a) Discuss the main features of the Linux Operating System. 9
- (b) Explain the following Linux commands: ls, mkdir, cat, rm. 9
6. Explain the following Linux commands with the help of examples: grep, sort, head, tail. 18

### UNIT-IV

7. (a) Explain the use of the following commands: ps, kill, nice. 9
- (b) How can you copy, move, and delete text in a vi editor? 9
8. (a) Explain the looping statements used in shell programming. 9
- (b) Discuss the use of the su command and the duties of a superuser. 9

### Compulsory Question

9. Write short answers for the following:
  - (a) List the four necessary conditions for a deadlock. 4
  - (b) What is the purpose of the pwd command in Linux? 2
  - (c) Define Process Control Block (PCB). 2
  - (d) Define virtual memory. 2
  - (e) What are the different modes of the vi editor? 2
  - (f) What does the who command do in Linux? 2
  - (g) Define a Shell in the context of Linux. 2
  - (h) What is a Distributed Operating System? 2