Roll No. .....

(05/16-I)

5215

B.A./B.Sc. EXAMINATION

(Fourth Semester)

COMPUTER SCIENCE

Fourth Paper

Operating System

Time : Three Hours *Maximum Marks :* B.Sc. : 30, B.A. : 20

Note : Attempt *one* question from each Section. Q. No. **1** is compulsory. All questions carry equal marks. (For B.Sc. students, each question carries 6 marks and for B.A Students, each question carries 4 marks)

1. **Note :** B.Sc. students attempt all the *six* parts in this question and B.A. students attempt any *four* parts. Each part carries 1 mark :

   (a) Define batch system and real time system.

(b) Define and differentiate between preemptive and non-pre-emptive scheduling

(c) Define PCB.

(d) Define IPC.

(e) Define various file operations.

(f) Define sequential file organization.

Unit I

2. What are various functions and characteristics of OS ?

3. (a) What are various types of OS ?

   (b) Write a note on system calls.

Unit II

4. Explain various scheduling algorithms. What are various criteria that should be kept in mind while choosing a particular scheduling algo ?

5. Define deadlock. Differentiate between deadlock prevention and deadlock avoidance. Explain in detail.

Unit III

6. Explain Peterson's solution to achieve process synchronization.

7. What do you mean by memory management ? What are various memory management techniques ?

Unit IV

8. Define disk management. What are disk-scheduling methods ? What is the need to develop such methods ?

9. What do you mean by file and directory structure ? Explain in detail.