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## **BCA-203**

**B.C.A. Second Year Examination, 2017**

**Paper-III**

**(Fundamentals of Operating System)**

**Time Allowed : Three Hours**

**Maximum Marks : 100**

**PART-A ( खण्ड-अ ) [Marks : 20**

**Answer all questions (50 words each).**

**All questions carry equal marks.**

**सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न का उत्तर 50 शब्दों से अधिक न हो।**

**सभी प्रश्नों के अंक समान हैं।**

**PART-B ( खण्ड-ब ) [Marks : 50**

**Answer five questions (250 words each), selecting one from each Unit. All questions carry equal marks.**

**प्रत्येक इकाई में से एक-एक प्रश्न चुनते हुए, कुल पाँच प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 250 शब्दों से अधिक न हो।**

**सभी प्रश्नों के अंक समान हैं।**

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**P. T. O.**

**PART-C ( खण्ड-स ) [Marks : 30**

**Answer any two questions (300 words each).**

**All questions carry equal marks.**

कोई दो प्रश्न कीजिए। प्रत्येक प्रश्न का उत्तर 300 शब्दों से अधिक न हो।  
सभी प्रश्नों के अंक समान हैं।

**PART-A**

1. Answer the following questions :

- (i) Define Mainframe system.
- (ii) What is Real-time system?
- (iii) Define process states.
- (iv) Define CPU scheduling.
- (v) What is Critical section problem?
- (vi) Define Starvation.
- (vii) What is Swapping?
- (viii) What do you mean by Demand paging?
- (ix) What is Kernal?
- (x) Define Inter process communication in Linux.

## **PART-B**

### **UNIT-I**

2. What is an Operating system? What are its functions?
3. Write short notes on the following :
  - (a) System call
  - (b) Virtual machine.

### **UNIT-II**

4. Explain Inter process communication.
5. What is meant by algorithm evaluation? Explain with example.

### **UNIT-III**

6. Describe the necessary condition of Deadlock. Explain Deadlock avoidance.
7. What are Semaphores? Explain classical problems of synchronization.

### **UNIT-IV**

8. Describe paging in Memory management scheme.
9. Explain Page replacement.

## UNIT-V

10. Describe various Kernel modules of Linux.
11. Explain process management in Linux.

## PART-C

12. Explain Operating system structure.
13. What is meant by Scheduling? Explain any one scheduling algorithm.
14. Write short note on the Deadlock.
15. Write short notes on the following :
  - (i) Segmentation
  - (ii) Thrashing.
16. Describe Memory Management in Linux.

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