

UNIT - II

13. Suppose that the following process arrive for execution at the time indicated :

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

What is the average waiting time and turn around time for these processes with :

1. FCFS scheduling algorithm
2. Non preemptive SJF algorithm
3. Preemptive SJF algorithm.

UNIT - III

14. What are the classical problems of synchronization ? State any one problem in detail with algorithm.

UNIT - IV

15. How many page faults occur for the following reference string with four page frames :
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 5, 4, 5, 4, 2 using FIFO, LRU and optimal page replacement algorithm.

UNIT - V

16. Explain process management with respect to Linux Operating System.

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Total Pages : 4

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B.C.A. II Year Examination, 2015

Paper-III

(Fundamentals of Operating System)

Time : 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 पचास 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 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।

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।

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P.T.O.

PART-A

UNIT - I

1. Define operating system.
2. State two uses of system programs.

UNIT - II

3. Define inter process communication.
4. What are the various types of scheduling algorithms.

UNIT - III

5. What are the classical problems of synchronization ?
6. What are the four necessary conditions of deadlock ?

UNIT - IV

7. Explain concept of swapping with diagram.
8. What is thrashing ?

UNIT - V

9. Define Kernel.
10. What are the components of Linux System.

PART-B

UNIT - I

2. List services of operating system. Explain spooling and state its advantages.

3. What are the different types of operating system structures. Explain.

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UNIT - II

4. Describe the differences between short term, long term and medium term scheduling.
5. What is process ? Draw process state diagram and state its meaning.

UNIT - III

6. State the relevance of Peterson's algorithm. Explain the concept of semaphore.
7. Describe bankers algorithm to avoid deadlock. What are the problems in its implementation.

UNIT - IV

8. Differentiate between internal and external fragmentation. What one occurs in paging and which one occurs in segmentation ?

UNIT - V

9. What is virtual memory ? Explain its relevance.
10. What are the design principles in Linux.
11. Differentiate between process management and memory management in Linux.

PART-C

UNIT - I

12. Differentiate between :
 1. Distributed and clustered system
 2. Real time and handheld system
 3. System calls and system programs

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