This question paper contains 3 printed pages.

B.C.A. (Sem. - II) 001979 Roll No. 5802338.

UG0801 **BCA-52T-107**

B.C.A. Three/Four Year (Semester - II)

EXAMINATION SESSION 2024-25 (Held in Jul. 2025)

(Faculty of Science)

BACHELOR OF COMPUTER APPLICATIONS

(Operating Systems)

Time Allowed: Three Hours

Maximum Marks: 80

No supplementary answer book will be given to any candidate. The candidates should write the answers precisely in the main answer book only.

किसी भी परीक्षार्थी को पूरक उत्तर–पुस्तिका नहीं दी जाएगी। परीक्षार्थियों को समस्त प्रश्नों के उत्तर मुख्य उत्तर पुस्तिका में ही लिखने चाहिए।

Answers to short answer-type questions must be given in sequential order. Similarly, all the parts of one question of descriptive part should be answered in one place in the answer-book.

लघुत्तरात्मक प्रश्नों के उत्तर प्रश्नों के क्रमानुसार ही देवें। इसी प्रकार किसी भी एक वर्णनात्मक प्रश्न के अन्तर्गत पूछे गए विभिन्न प्रश्नों के उत्तर, उत्तर–पुस्तिका में एक ही स्थान पर क्रमानुसार हल करने चाहिए।

Write your roll number on question paper before start writing answers of questions.

प्रश्नों के उत्तर लिखने से पूर्व प्रश्न–पत्र पर रोल नम्बर अवश्य लिखिए।

Question paper consists of two parts A and B.

प्रश्न पत्र में दो भाग अ और ब होंगे।

PART A : 20 marks भाग – अ : 20 अंक

Part A is compulsory having 10 very short answer-type questions (with a limit of 20 words) of two marks each. The first question is based on knowledge, understanding and applications of the topics/texts covered in the syllabus.

भाग अ में दो अंक के 10 अति लघु उत्तरीय प्रश्न (20 शब्दों की सीमा के साथ) अनिवार्य हैं। पहला प्रश्न पाठ्यक्रम में शामिल विषयों/पाठ के ज्ञान, समझ और अनुप्रयोगों पर आधारित है।

PART - B : 60 marks भाग – ब : 60 अंक

Part B of the question paper is divided into four units comprising question numbers 2-5. There is one discriptive question from each unit with internal choice. Each question will carry 15 marks.

प्रश्न पत्र का भाग ब को प्रश्न संख्या 2–5 सहित चार इकाइयों में विभाजित किया जाएगा। प्रत्येक इकाई से आंतरिक विकल्प के साथ एक वर्णनात्मक प्रश्न हैं। प्रत्येक प्रश्न 15 अंक का है।

PART - A

1. What is Thrashing?
2. What is a Virtual Memory?
3. What is Multiprogramming?
4. What is Critical Section Problem?
5. What is System Calls?
6. What is Long Term Scheduler?
7. Difference between Symmetric and Asymmetric Multiprocessing?
8. What is Page Fault?
9. What is Lilo?
10. What are Threads?

PART - B

1. Describe the following:
   (a) Process State
   (b) Process Control Block
   (c) Real Time and Distributed Operating Systems

OR

Explain the purpose and importance of system calls in detail with examples.

2. What are the necessary conditions for deadlock to occur? What is deadlock detection and recovery? Describe the methods for recovering from deadlock.

OR

Explain the various CPU scheduling algorithm with example (FCFS, RR, PRIORITY)

3. What is demand paging? Explain the different Page Replacement Algorithms with neat examples.

OR

Write a short note on:

(a) Memory Mapped I/O

(b) Alocation Method

(c) Device Driver and Device Controller

4. What is Linux? Explain its component and features in detail?

OR

What is Shell Script? Explain the list of Linux Command.