

Seat No.

MAR-APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA Sci) NEP 2.0
Sub. Name: Computer Architecture
Sub. Code: 109808

Day and Date: JUNE ,10-06-2025

Total Marks: 60

Time: 02:30 PM To 05:30 PM

Instructions: 1. Figures to the right indicate full marks

Special Inst.: 1) Que.1 and Que. 7 are compulsory.

2) Attempt any THREE questions from Que. No.2 to Que. No. 6.

Q1) Solve following MCQ.

[10]

i. Convert the following binary number to decimal. (01010)

- A. 11
- B. 15
- C. 35
- D. 10

ii. Convert (214)₈ into decimal

- A. (140)₁₀
- B. (141)₁₀
- C. (142)₁₀
- D. (130)₁₀

iii. 1's complement of 11100110 is

- A. 00011001
- B. 10000001
- C. 00011010
- D. 00000000

iv. DeMorgan's theorem states that.....

- A. $(AB)' = A' + B'$
- B. $(A + B)' = A' * B'$
- C. $A' + B' = A'B'$
- D. $(AB)' = A' + B$

v. Universal gates are

- A. NAND & NOR
- B. AND & OR
- C. XOR & OR
- D. EX-NOR & XOR

vi. A full adder logic circuit will have

- A. Two inputs and one output
- B. Three inputs and three outputs
- C. Two inputs and two outputs
- D. Three inputs and two outputs

- vii.** Which statement below best describes a Karnaugh map?
- A. It is simply a rearranged truth table
 - B. The Karnaugh map eliminates the need for using NAND and NOR gates
 - C. Variable complements can be eliminated by using Karnaugh maps
 - D. A Karnaugh map can be used to replace Boolean rules
- viii.** Reflected binary code is also known as.....
- A. BCD code
 - B. Binary code
 - C. ASCII code
 - D. Gray Code
- ix.** The logic circuits whose outputs at any instant of time depends only on the present input but also on the past outputs are called
- A. Combinational circuits
 - B. Sequential circuits
 - C. Latches
 - D. Flip-flops
- x.** Which memory is fast memory.....
- A. Main memory
 - B. Associative memory
 - C. Cache memory
 - D. Auxiliary memory

Q2) What is Digital Logic? Describe different types of logic gates with truth table ? **[10]**

Q3) Explain step by step method for converting binary to octal and binary to hexadecimal number system with suitable example. **[10]**

Q4) Explain combinational circuits Full adder and Full subtractor. **[10]**

Q5) Explain about the clocked S-R flip flop with logic diagram? Describe its operation with truth table? **[10]**

Q6) State and explain different types of computer registers. **[10]**

Q7) Write short note(any Four out of Six) **[20]**

a. Kmap **[5]**

b. Error detecting and correcting codes **[5]**

- | | | |
|----|-------------------------------|-----|
| c. | Multiplexer and Demultiplexer | [5] |
| d. | Main Memory | [5] |
| e. | Synchronous binary count | [5] |
| f. | Interrupts | [5] |

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (12329) Bachelor Of Computer Application (NEP2.0) (109808) Computer Architecture Part 1 SEM 1

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
11949 Bachelor of Computer Application(BCA) NEP 2.0
Sub. Name: Fundamentals of Computer
Sub. Code: 80861/88341

Day and Date: MAY ,09-05-2025**Total Marks: 80****Time: 10:30 AM To 01:30 PM****Instructions:**

Special Inst.: 1) Que. 1 and Que. 8 are compulsory.
2) Attempt any three questions from Que. 2 to Que. 7.
3) Figures to the right indicate full marks.

Q1) Solve following MCQ.**[12]**

- i. Which of the following is not a characteristic of a computer?
 - A. Versatility
 - B. Accuracy
 - C. Diligence
 - D. I.Q.
- ii. Linux Kernel was invented by?
 - A. Richard Stallman
 - B. Linus Torvalds
 - C. Bill Gates
 - D. Ben Thomas
- iii. Which of the following is not a type of computer code?
 - A. EDIC
 - B. ASCII
 - C. BCD
 - D. EBCDIC
- iv. What does GUI stand for?
 - A. Graphical User Instruction
 - B. Ground User Interface
 - C. General User Instruction
 - D. Graphical User Interface
- v. Which of the following is designed to control the operations of a computer?
 - A. User
 - B. Application Software
 - C. System Software
 - D. Utility Software

- vi.** Third generation computers are made of _____
A. Vacuum Tubes
B. Transistors
C. IC
D. VLSI
- vii.** Which of the following is not a type of computer on the basis of operation?
A. Digital
B. Analog
C. Hybrid
D. Remote
- viii.** Which of the following is non-volatile storage?
A. RAM
B. DRAM
C. ROM
D. Cache
- ix.** Which unit of the computer is considered as the brain of the computer?
A. Memory unit
B. Input unit
C. CPU
D. Output unit
- x.** Which of the following devices is NOT used to enter data into a computer?
A. Mouse
B. Keyboard
C. Scanner
D. Monitor
- xi.** Which of the following is the extension of Notepad?
A. .txt
B. .xls
C. .ppt
D. .bmp
- xii.** What is the core of the Linux operating system?
A. Terminal
B. Kernel
C. Command
D. User

Q2) What is Memory? Describe various types of Memory in detail.

[16]

Q3) **[16]**

a. Explain various types of computer in detail.

[8]

b. How to convert binary to decimal number?

[8]

Q4) What is Computer? Explain Block diagram of computer in detail.

[16]

Q5) [16]

a. What is Operating system? Explain types of operating system.

[8]

b. Describe different Linux commands in detail.

[8]

Q6) [16]

a. What are the generations of computer?

[8]

b. What is software? Describe types of software.

[8]

Q7) [16]

a. What is windows operating system? Describe feature of windows operating system.

[8]

b. Explain structure of Linux file system.

[8]

Q8) Write short note (Any four)

[20]

a. Paint

b. Pipes

c. Pen drive

d. Machine Language

e. Octal Number system

f. Features of Linux

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (7810) B.C.A. (CBCS) (80861) Fundamentals of Computer Part 1 SEM 1

2] (7824) Bachelor of Computer Application (CBCS)NEP (88341) Fundamentals of Computer Part 1 SEM 1

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA Sci) NEP 2.0
Sub. Name: Mathematics Foundations to Computer Science-I
Sub. Code: 109807

Day and Date: JUNE ,09-06-2025**Total Marks: 80****Time: 02:30 PM To 05:30 PM****Instructions: 1. Use of Scientific calculator is allowed****Special Inst.: 1) Que.1 and Que. 8 are compulsory.****2) Attempt any FOUR questions from Que. No.2 to Que. No. 7.****3) Figures to the right indicate marks.**

- Q1) A.** Select the correct alternative and rewrite **[10]**
- i.** Which of the following properties must an equivalence relation satisfy?
- A. Reflexive, Asymmetric, Transitive
 - B. Reflexive, Symmetric, Transitive
 - C. Reflexive, Transitive only
 - D. Reflexive, Symmetric only
- ii.** Which of the following is an example of a finite set?
- A. integers
 - B. real numbers
 - C. The set of vowels in English alphabet
 - D. prime numbers
- iii.** According to the Pigeonhole Principle, if 10 pigeons are placed in 9 pigeonholes, then at least one pigeonhole must contain at least _____ pigeons
- A. 5
 - B. 2
 - C. 3
 - D. 4
- iv.** Which of the following statements is true about an equivalence relation?
- A. It always partitions a set into disjoint subsets
 - B. It only contains reflexive pairs
 - C. It must be antisymmetric
 - D. It never creates distinct subsets
- v.** How many ways can a committee of 3 be chosen from a group of 7 people?
- A. 35
 - B. 21
 - C. 10
 - D. 840

vi. A closed walk in which no edge is repeated is called a

- A. path
- B. circuit
- C. walk
- D. trail

vii A graph with no self-loops and no multiple edges is called

- A. a multigraph
- B. a pseudo graph
- C. a digraph
- D. a simple graph

vii If the determinant of a square matrix is nonzero, the matrix is

- i. A. singular
- B. non singular
- C. symmetric
- D. anti symmetric

ix. For two matrices A and B to be added, they must have

- A. The same number of rows
- B. The same number of columns
- C. The same order (rows and columns)
- D. Any random order

x. What is the cardinality of the set $\{1, a, 4, s, w, z\}$

- A. 5
- B. 6
- C. 4
- D. 2

B. Solve the following questions (Any two out of three)

[10]

1. Define exponential and logarithmic functions. Calculate $\log_2(64)$ and 2^{16} . Explain their relationship.
2. State and explain the Addition and Multiplication principles of counting with examples.
3. Define connected and disconnected graphs. Draw the graph G with vertices $V=\{1, 2, 3, 4, 5\}$ and edges $E=\{(1,2), (2,3), (1,4), (1,5)\}$ and determine if the graph is connected or disconnected.

Q2) A. What is an identity matrix? Give an example. How is it denoted symbolically for n rows and columns? Write an identity matrix for 4 rows and 4 columns. [5]

B. Define orthogonal matrix and check whether $\begin{bmatrix} \frac{1}{\sqrt{2}} & -\frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{bmatrix}$ is orthogonal or not? [5]

- Q3)** $A = \begin{bmatrix} 11 & 12 & -3 \\ 5 & 6 & -8 \\ 3 & 8 & 1 \end{bmatrix}$ [10]
 Compute the inverse of the matrix using adjoint method.
- Q4)** Solve the recurrence relation $T(n) = 2T(n-1) + T(n-2)$, with initial conditions $T(0) = 0, T(1) = 1$ [10]
- Q5)** Define combination. Prove i) $\binom{n}{r} = \binom{n}{n-r}$ ii) $\binom{n+1}{r} = \binom{n}{r-1} + \binom{n}{r}$ [10]
- Q6) A.** Define an Eulerian graph. State and prove the necessary and sufficient conditions for a graph to be Eulerian. [5]
B. Define a complete graph. How it is represented for n vertices? Draw a complete graph with 5 vertices and calculate the total number of edges. [5]
- Q7)** Let $A = \{1, 2, 3, 4, 5\}$ and $B = \{2, 4, 6, 8, 10\}$ find i) $A \cap B$ ii) $A \cup B$ iii) $A - B$ iv) $B - A$ v) $A \times B$ vi) $B \times A$ vii) Is there any mapping between A and B. [10]
- Q8)** Attempt any 4 questions out of 6 [20]
 A) Define the inverse of a matrix. What is the condition for a matrix to have an inverse?
 B) How many ways can 3 cards be selected from a deck of 52 cards?
 C) Consider the following directed graph (digraph) with vertices: A, B, C, D, E having edges $\{(A \rightarrow B), (B \rightarrow C), (C \rightarrow D), (D \rightarrow E), (E \rightarrow A), (A \rightarrow D), (C \rightarrow B)\}$. Draw the directed graph (digraph). List all the in-degrees and out-degrees for each vertex.
 D) Differentiate between an upper triangular matrix and a lower triangular matrix with examples.
 E) Define a subgraph. Give an example and explain how a subgraph is formed.
 F) A password consists of 4 letters and 3 digits. How many different atmost 7-letter passwords can be formed if repetition is allowed?

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

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सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (12329) Bachelor Of Computer
Application (NEP2.0)

(109807) Mathematics Foundations to Computer Part 1 SEM 1
Science-I

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA) NEP 2.0
Sub. Name: Data Structures
Sub. Code: 109899

Day and Date: JUNE ,10-06-2025

Total Marks: 80

Time: 10:30 AM To 01:30 PM

Instructions:

Special Inst.: 1) Que. 1 and Que. 8 are compulsory.
2) Attempt any FOUR questions from Que. No. 2 to Que. No. 7.
3) Figures to the right indicates marks.

Q1) A. Multiple Choice Questions(10 questions for 1 mark each) **[10]**

i. In a sparse matrix, most of the elements are:

- A. Non-zero
- B. Zero
- C. Negative
- D. Positive

ii. Which data structure is used in BFS (Breadth First Search) of a graph?

- A. Stack
- B. Queue
- C. Array
- D. Tree

iii. Which data structure uses LIFO (Last In, First Out) principle?

- A. Queue
- B. Stack
- C. Array
- D. Linked List

iv. In a circular queue, how do you check if the queue is full?

- A. $\text{rear} == \text{size} - 1$
- B. $(\text{rear} + 1) \% \text{size} == \text{front}$
- C. $\text{front} == \text{rear}$
- D. $\text{rear} == \text{front} - 1$

v. Which of the following data structures allows insertions and deletions from both ends?

- A. Queue
- B. Stack
- C. Dequeue
- D. Priority Queue

vi. A binary tree with 'n' nodes has how many edges?

- A. n
- B. n - 1
- C. n + 1
- D. 2n

vii What is the result of evaluating the postfix expression 6 3 2 4 + - *?

- A. 74
- B. -18
- C. 22
- D. 40

vii In a singly linked list, what does the last node point to?

- i. A. Itself
- B. The head node
- C. NULL
- D. Random node

ix. What is the primary disadvantage of arrays?

- A. Fixed size
- B. Dynamic resizing
- C. Random access
- D. Efficient memory usage

x. Which of the following is not a type of queue?

- A. Circular Queue
- B. Deque
- C. LIFO Queue
- D. Priority Queue

B. Short answer question(Any two out of three)

[10]

1. Define linked list. Compare linked list with arrays.
2. What is a binary search tree (BST)? Explain insertion and searching in BST.
3. What is recursion? Explain factorial and Fibonacci sequence using recursion.

Q2) What is Queue? Describe Queue operations using array.

[10]

Q3) Write an algorithm to insert a node at the beginning, middle, and end of a singly linked list. [10]

Q4) Define a graph. Explain adjacency matrix and adjacency list representation with examples. [10]

- Q5)** Explain the representation of a 2D array in memory. Write a program to add two [10]
matrices.
- Q6)** Write and explain the bubble sort and selection sort algorithms with step-by-step [10]
examples.
- Q7)** What is hashing? Explain the concept of hash tables. Describe different hash [10]
functions and explain any two collision resolution techniques with examples.
- Q8)** Write short note on(Any Four out of Six) [20]
- a. Matrices and Sparse Matrices [5]
 - b. Classification of Data Structure [5]
 - c. Operations of Linked List [5]
 - d. Collision with Collision Resolution [5]
 - e. Applications of Queue [5]
 - f. AVL Trees [5]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (12329) Bachelor Of Computer Application (NEP2.0) (109899) Data Structures Part 1 SEM 2

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
11949 Bachelor of Computer Application(BCA) NEP 2.0
Sub. Name: DBMS
Sub. Code: 80868/88349

Day and Date: MAY ,09-05-2025**Total Marks: 80****Time: 02:30 PM To 05:30 PM****Instructions: 1. Figures to the right indicate full marks****Special Inst.: 1) Que.1 and Que. 8 are compulsory****2) Attempt any three Questions from Que. No.2 to Que. No. 7.****Q1) Choose the correct answer to each of the following questions.****[12]**

- i. In the architecture of a database system external level is the _____.
A. Physical level
B. Logical level
C. Conceptual level
D. View level
- ii. _____ is an information repository which contains metadata.
A. Data warehouse
B. Data dictionary
C. Database
D. System
- iii. In Access, _____ are used to store the data.
A. Report
B. Form
C. Table
D. Query
- iv. Which of the following is not a valid aggregate function?
A. COUNT
B. COMPUTE
C. SUM
D. MAX
- v. Organizing your files according to their blocks and putting those blocks onto a storage medium is referred to as _____.
A. Data organization
B. File organization
C. Recursive organization
D. None

- vi.** What is a Centralized Database?
- A. These databases store information in a central location.
 - B. These databases store information in a decentral location.
 - C. These databases store information in a left location.
 - D. These databases store information in the right location.
- vii.** How many types of file organizations are there?
- A. 5
 - B. 6
 - C. 7
 - D. 8
- viii.** Which SQL clause is used to filter the results of a query to a specific condition?
- A. ORDER BY
 - B. GROUP BY
 - C. WHERE
 - D. HAVING
- ix.** Heap File Organization work with _____.
- A. Data Sets
 - B. Database
 - C. Data Blocks
 - D. Data item
- x.** Which command is used to change the definition of a table in SQL?
- A. CREATE
 - B. UPDATE
 - C. ALTER
 - D. SELECT
- xi.** How many primary keys can be on a table?
- A. Only 1
 - B. Only 2
 - C. Depends on no of Columns
 - D. Depends on DBA
- xii.** To create queries in Access _____.
- A. You can drag and drop fields on query builders
 - B. You can type the SQL command in SQL view
 - C. You can use query wizard or design view
 - D. All of the above

Q2) Explain serial file organization with its type. **[16]**

Q3) Describe the Hierarchical Model and Network Model with diagrams. **[16]**

- Q4)** Write the advantages and disadvantages of DBMS. [16]
- Q5)** What is DBMS? Explain needs and features of DBMS in detail. [16]
- Q6)** What are aggregate functions? Explain any four aggregate functions with examples. [16]
- Q7)** Explain DML commands with appropriate examples. [16]
- Q8)** Write notes on (Any Four). [20]
- a. Entity Relationship Model
 - b. Functions of DBMS
 - c. Keys in DBMS
 - d. Distributed database system
 - e. SQL data types
 - f. Users of databases

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (7810) B.C.A. (CBCS) (80868) DBMS Part 1 SEM 2

2] (7824) Bachelor of Computer Application (CBCS)NEP (88349) DBMS Part 1 SEM 2

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
11949 Bachelor of Computer Application(BCA Sci) NEP 2.0
Sub. Name: Financial Accounting with Tally
Sub. Code: 80871/88352

Day and Date: MAY ,14-05-2025

Total Marks: 80

Time: 02:30 PM To 05:30 PM

Instructions: 1. Figures to the right indicate full marks

Special Inst.: Q.1 and Q.8 are compulsory
 Attempt any three questions from Q.2 to Q.7.

Q1) Solve following MCQ.**[12]**

- i. Mr.Kiran Account is a _____ type of account
 - A. Real
 - B. Nominal
 - C. Personal
 - D. Capital
- ii. The shortcut key to quit from Tally is
 - A. Ctrl+L
 - B. Ctrl+P
 - C. Ctrl+ M
 - D. Ctrl+Q
- iii. _____ has been called as language of business
 - A. Communication
 - B. Letter
 - C. Accounting
 - D. Finance
- iv. _____ involves the preparation of financial statements (P &L A/C and Balance Sheet)
 - A. Recording
 - B. Classifying
 - C. Summarizing
 - D. Interpreting
- v. Business is considered as a separate and distinct from owner is _____ concept
 - A. Separate Entity
 - B. Going concern
 - C. Money measurement
 - D. Materiality

- vi. _____ = Liabilities + Capital
- A. Fixed Asset
 - B. Share capital
 - C. Total Asset
 - D. Valuation
- vii. Salary Account comes under which head?
- A. Indirect income
 - B. Indirect expense
 - C. Direct income
 - D. Direct expense
- viii. 'Capital' means.....
- A. Owner investing funds into the business
 - B. Owner withdrawing funds from the business
 - C. Raising funds from financial institutions
 - D. Commencing the business
- ix. Every business transaction has _____ effects as per dual aspect concept
- A. Two
 - B. Single
 - C. Three
 - D. Multiple
- x. Debit credit rule for personal account is....
- A. Debit the receiver and credit the giver
 - B. Debit the giver and credit the receiver
 - C. Debit what comes in and credit what goes out
 - D. Debit what goes out and credit what comes in
- xi. Which option is used to view Stock Items or Group Summary in Tally
- A. Account book
 - B. Inventory books
 - C. Statutory books
 - D. Display
- xii. Short cut key to select company in tally is.....
- A. F1
 - B. F2
 - C. F3
 - D. F4

Q2) Explain the Internal & External Users of accounting

[16]

Q3) Explain different types of Accounts & rules of debit & credit as per Double Entry **[16]**

System.

Q4)

[16]

Journalize the following transactions in the books of Kiran for the year 2023

Jan 1	Kiran started business with cash with Rs.2,00,000, Building Rs. 10,00,000 and Machinery Rs. 5,00,000
Jan 2	Purchased goods in cash Rs. 50,000.
Jan 4	Goods sold for cash Rs. 80,000 at a 10% cash discount.
Jan 6	Withdraw cash from Bank of India Rs 10,000.
Jan 7	Received commission Rs. 3,500 & Interest Rs. 500.
Jan 8	Paid Rent of Rs. 8,000 & wages Rs. 9,000.
Jan 10	Goods worth Rs. 1,500 distributed as free samples.
Jan 12	Deposited in Bank of Maharashtra Rs. 20,000.
Jan 14	Withdraw goods for personal use Rs. 2,000
Jan 16	Purchased goods from Kapil of Rs. 60,000 at a 10% Trade discount.
Jan 18	Purchased goods from Avadhut of Rs. 30,000 at a 10% Cash discount

Q5) What is Financial Accounting. Explain Accounting Concepts & Conventions in detail. [16]

Q6) Prepare Final Account [16]

From the following trial balance of Bharat Bhushan prepare Trading a/c, Profit & loss a/c for the year ended & Balance sheet as on 31st March 2018.

Particular	Amount Debit	Particular	Amount Credit
Land & building	87,000	Bharat capital	2,00,000
Plant & machinery	17,500	Sales less return	94,000
Goodwill	20,000	Reserve for doubtful debts	1500
Bharat drawings	22,600	Creditors	7500
Cash in hand	1,795		
Stock on 1 st April 2017	27,000		
Wages	10,000		
Purchases less return	69,000		
Carriage inward	600		
Travelers' commission	6,000		
Insurance	2,000		
Motor car	3,000		
Carriage outward	1,400		
Salaries	15,000		
Bank charges	105		
Debtors	20,000		
	3,03,000		3,03,000

Adjustments: -

- 1) On 31st March 2018 the stock was valued at Rs. 46,000.
- 2) Insurance premium amounting to Rs. 800 is prepaid.
- 3) Outstanding salaries amounted to Rs. 1,000.
- 4) Depreciate plant & machinery @ 10% p.a. & motor car @ 20% p.a.
- 5) Create a reserve for doubtful debts @ 10% on debtors.

Q7) Explain steps in creation of new company in Tally

[16]

Q8) Write short note (any 4)

[20]

- a. Objectives of accounting
- b. Groups in tally
- c. Cash Discount
- d. Vouchers in Tally
- e. Single and Multiple ledger
- f. Trial Balance

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

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सदरची प्रश्नपत्रिका खालील विषयांकरीता वितरित करता येईल.

- 1] (7824) Bachelor of Computer Application (CBCS)NEP (88352) Financial Accounting with Tally Part 1 SEM 2
- 2] (7810) B.C.A. (CBCS) (80871) Financial Accounting with Tally Part 1 SEM 2

Seat No. **MAR-APR 2025 SUMMER EXAMINATION****12149 Bachelor of Business Administration NEP 2.0****Sub. Name: Human Behavior and Organization****Sub. Code: 111300****Day and Date: JUNE ,10-06-2025****Total Marks: 60****Time: 10:30 AM To 12:30 PM****Instructions:** 1. All questions are compulsory
2. Figures to the right indicate full marks

Q1) Q1) Elaborate concept of work team also explains five stages model of group [15]
development.

OR

Q1) Explain organizational culture defines importance of cross culture
management

Q2) **Q2) Write Short Answer (Any Three)** [30]

- A) Explain contributing disciplines of OB
- B) Define factor influencing perception
- C) Explain individual and group conflict
- D) Explain factor influencing OB
- E) Explain need hierarchy theory

Q3) **Q3) Write Short Notes (Any Three)** [15]

- A. OB model
- B. Authentic leadership
- C. Goal setting theory
- D. Concept of leadership
- E. Types of terminal values

End Of Question Paper**Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -**

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (12149) Bachelor of Business Administration
NEP 2.0(111300) Human Behavior and
Organization

Part 1 SEM 2

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA) NEP 2.0
Sub. Name: Indian Constitution
Sub. Code: 109903

Day and Date: JUNE ,13-06-2025**Total Marks: 30****Time: 10:30 AM To 12:00 PM**

Instructions: 1. All questions are compulsory
2. Figures to the right indicate full marks

- Q1)** Q1) Define commerce and intercourse within the territory of India. **[10]**
OR
Q1) Elaborate historical understanding of the constitution also explains important economic movement in constitutional history.
- Q2)** **Q2) Write Short Answer (Any Two)** **[10]**
A. Explain Grand citizen right
B. Define challenges with fiscal federalism in India
C. Demonstrate the complex and fascinating overlap between constitution and business.
D. Explain legal resolution and economic justice
- Q3)** **Q3) Write Short Notes (Any Two)** **[10]**
A. Economic justice
B. Article 280 constitution
C. Rights of citizens
D. Banning of diesel engine cars

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (12329) Bachelor Of Computer Application (NEP2.0) (109903) Indian Constitution Part 1 SEM 2

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA Sci) NEP 2.0
Sub. Name: Object Oriented Programming Using Java
Sub. Code: 109901

Day and Date: JUNE ,12-06-2025**Total Marks: 80****Time: 10:30 AM To 01:30 PM****Instructions:**

- Special Inst.:** 1) Que.1 and Que. 8 are compulsory.
2) Attempt any FOUR questions from Que. No.2 to Que. No. 7.
3) Figures to the right indicate marks.

Q1) A] Multiple Choice Questions (1 mark each) (10 Marks)**[20]**

- 1] Which of the following is not a feature of Java?
 - a) Object-Oriented
 - b) Platform Dependent
 - c) Secure
 - d) Robust
- 2] Which operator is used for conditional branching?
 - a) &&
 - b) ?:
 - c) ++
 - d) ==
- 3] What is the size of a char in Java?
 - a) 8 bits
 - b) 16 bits
 - c) 32 bits
 - d) 64 bits
- 4] JVM stands for:
 - a) Java Verified Machine
 - b) Java Variable Method
 - c) Java Virtual Machine
 - d) Java Vendor Model
- 5] Which keyword is used to inherit a class in Java?
 - a) implement
 - b) extends
 - c) inherits
 - d) override
- 6] Which of these is used to handle exceptions in Java?
 - a) include
 - b) import
 - c) throw
 - d) define
- 7] Java source code is compiled into:

- a) Assembly code
- b) Bytecode
- c) Machine code
- d) Source code

8] What is the default value of an int variable in Java?

- a) 0
- b) 1
- c) -1
- d) null

9] Which method is automatically called when an object is created?

- a) main()
- b) finalize()
- c) constructor
- d) start()

10] Which class provides wrapper functionality for primitive data types?

- a) Abstract
- b) Integer
- c) Object
- d) Class

B] Give Reasons / Short Answer (*Attempt any two*) (10 Marks)

- 1] Why is Java called platform-independent?
- 2] What is the use of wrapper classes in Java?
- 3] Differentiate between throw and throws.

Q2) Describe inheritance in Java. How is polymorphism achieved through method overriding and interfaces? **[10]**

Q3) Explain the basic concepts of Object Oriented Programming. What are the advantages and applications of OOP? **[10]**

Q4) What is exception handling in Java? Explain try, catch, throw, throws, and finally with a suitable example. **[10]**

Q5) Write a Java program to demonstrate the use of constructors and method overloading. Explain the output. **[10]**

Q6) What are packages in Java? How are user-defined packages created and accessed? Illustrate with an example. **[10]**

Q7) Explain the different data types in Java. How are variables declared and initialized? **[10]**

Q8) Write short notes on (Any Four): – [4 x 5 = 20 Marks] **[20]**

- | | |
|---------------------------|---------------------------|
| a) Java Tokens | b) Command Line Arguments |
| c) Typecasting in Java | d) Loops used in Java |
| e) Multithreading in Java | f) Enumerated Types |

End Of Question Paper

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1] (12329) Bachelor Of Computer Application (NEP2.0) (109901) Object Oriented Programming Using Java Part 1 SEM 2

538997

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
12329 Bachelor of Computer Application(BCA Sci) NEP 2.0
Sub. Name: Operating System
Sub. Code: 109900

Day and Date: JUNE ,11-06-2025

Total Marks: 40

Time: 10:30 AM To 12:00 PM

Instructions: 1. Figures to the right indicate full marks

Special Inst.: 1. Que.1 and Que.6 are compulsory.

2. Attempt any TWO questions from Que.No.2 to Que.No.5.

Q1) Solve following MCQ.

[10]

- i. Which of the following is used in mutual exclusion?
 - A. Signals
 - B. Buffers
 - C. Semaphores
 - D. Page Tables
- ii. Demand paging is based on:
 - A. Loading all pages at once
 - B. Keeping pages locked in memory
 - C. Loading pages only when required
 - D. Swapping pages periodically
- iii. The **First-Come, First-Served (FCFS)** scheduling algorithm is:
 - A. Preemptive
 - B. Non-preemptive
 - C. Round-based
 - D. Random
- iv. The primary goal of an operating system is to:
 - A. Provide user interface
 - B. Execute user applications
 - C. Manage system resources efficiently
 - D. Run in the background
- v. A process control block (PCB) does not contain:
 - A. Process state
 - B. Program counter
 - C. Register contents
 - D. Source code
- vi. Which of the following is NOT a scheduling criterion?

- A. CPU utilization
- B. Throughput
- C. Latency
- D. File size

vii. Which of the following is true about segmentation?

- A. Eliminates external fragmentation
- B. Uses fixed-size blocks
- C. Divides memory logically
- D. Uses a single contiguous memory area

viii. What is the purpose of system calls in an Operating System?

- A. Compiling programs
- B. Allowing user-level processes to request services from the OS
- C. Creating GUI
- D. Formatting storage

ix. Banker's algorithm is used for:

- A. CPU scheduling
- B. File handling
- C. Deadlock avoidance
- D. Interrupt handling

x. MFT and MVT are related to:

- A. CPU scheduling
- B. Memory allocation
- C. File system
- D. Deadlocks

Q2) What is Operating System? Explain any two types of Operating Systems. **[10]**

Q3) Describe the life cycle of a process in an operating system with suitable diagram. **[10]**

Q4) Describe the concept of virtual memory. How is it implemented using paging and segmentation? **[10]**

Q5) Explain the Banker's Algorithm for deadlock avoidance in detail. **[10]**

Q6) Write notes on (Any TWO out of FOUR) **[10]**

- a. Process Control Block
- b. System Calls
- c. Deadlock Detection and Recovery
- d. Swapping

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

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सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (12329) Bachelor Of Computer Application (NEP2.0) (109900) Operating System Part 1 SEM 2

945131

Seat No.

MAR_APR 2025 SUMMER EXAMINATION
11949 Bachelor of Computer Application(BCA) NEP 2.0
Sub. Name: Web Technology I
Sub. Code: 88351

Day and Date: MAY ,13-05-2025**Total Marks: 80****Time: 02:30 PM To 05:30 PM****Instructions: 1. Figures to the right indicate full marks****Special Inst.: 1) Que 1 and Que 8 are compulsory****2) Solve any three questions from Que 2 to Que 7****Q1) Multiple Choice questions (1 mark each)****[12]**

- i. What is the effect of the `<b>` tag?
 - A. It converts the text within it to a bold tag
 - B. It is used to write black-colored font
 - C. It is used to change the font size.
 - D. None of these
- ii. Which of the following tags doesn't require a closing tag?
 - A. `<br>`
 - B. `<hr>`
 - C. Both (a) and (b)
 - D. None of these
- iii. How many sizes of headers are available in HTML by default?
 - A. 5
 - B. 1
 - C. 3
 - D. 6
- iv. FTP stands for
 - A. Frame Transfer Protocol
 - B. File Transfer Protocol
 - C. Form Transfer Protocol
 - D. None of these
- v. Which HTML tag is used to create an ordered list in a webpage?
 - A. `<ol>`
 - B. `<ul>`
 - C. `<li>`
 - D. `<ol>` and `<ul>`
- vi. What application can one create even before the introduction of HTML5?

- A. Forms
 - B. Browser based games
 - C. Web applications
 - D. Mobile applications
- vii.** When is the body tag used?
- A. after FORM tag
 - B. after Title tag
 - C. after EM tag
 - D. after HEAD tag
- viii.** Which of the following is not a web component element?
- A. <shadow>
 - B. <menu>
 - C. <content>
 - D. <element>
- ix.** Which of the following is not associated with web socket communication?
- A. https
 - B. wss
 - C. http
 - D. ws
- x.** Identify the tag used to give paragraph
- A. <p>
 - B.

 - C. <marquee>
 - D. < pre>
- xi.** What is the function of the HTML style attribute?
- A. It is used to add styles to an HTML element.
 - B. It is used to uniquely identify some specific styles of some elements
 - C. Both (a) and (b)
 - D. None of these
- xii.** What is the purpose of JavaScript in web development?
- A. To define the structure and content of web pages
 - B. To add interactivity and behavior to web pages
 - C. To style and format web pages
 - D. To manage server-side data and databases

Q2) Discuss Web Development life cycle in detail. **[16]**

Q3) Write a HTML code to design a Web Page of your College. **[16]**

Q4) Explain different control structures in JAVA Script. **[16]**

Q5) [16]

- a. Discuss Event Handling in Java Script. [8]
- b. What is CSS? Explain different types of CSS. [8]

Q6) [16]

- a. What is HTML5? Explain difference between HTML and HTML5. [8]
- b. Explain Document Object Model in detail [8]

Q7) What is meant by WWW? Explain different types of Web sites. [16]

Q8) Write short notes on following (Any four) [20]

- a. Internet Protocol [5]
- b. Web Hosting [5]
- c. CSS Properties [5]
- d. HTML Frameset [5]
- e. Dialog Boxes [5]
- f. Web Servers [5]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -

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सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (7824) Bachelor of Computer Application (CBCS)NEP (88351) Web Technology I Part 1 SEM 2

Seat No.	
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SO-384

Total No. of Pages : 3

B. C. A. (Part-I) (Semester-II) NEP-2020
Examination, 2025
Mathematics Foundations to Computer Science-II
Subject Code: 109898

Day and Date : Monday, 09-06-2025

Total Marks : 80

Time : 10.30 a.m. to 1.30 p.m.

Instructions:

- 1) Que. 1 and Que. 8 are compulsory
- 2) Attempt any FOUR questions from Que. No. 2 to Que. No. 7.
- 3) Figures to the right indicate full marks.
- 4) Use of Scientific calculator is allowed.

Q.1 A. Select the correct alternatives for each of the following:**[10]**

i) Newton-Raphson method is also called -----

- a) Method of tangent
- b) Method of chord
- c) Interval halving method
- d) False position method

ii) In LPP when does feasibility change

- a) addition of variable
- b) change in objective functions coefficient
- c) change in right hand side of feasible region
- d) feasibility does not change

iii) The negation of the statement $5 \times 3 = 15$ or $7 + 5 = 12$ is -----

- | | |
|---|--|
| a) $5 \times 3 = 15$ or $7 + 5 = 12$ | c) $5 \times 3 = 15$ or $7 + 5 \neq 12$ |
| b) $5 \times 3 \neq 15$ and $7 + 5 \neq 12$ | d) $5 \times 3 \neq 15$ or $7 + 5 \neq 12$ |

iv) If G is a group and $a \in G$, then the subset $\{x \in G \mid xa = ax\}$ is called ...

- | | |
|----------------------------|-----------------------------|
| a) Normalizer of $a \in G$ | c) digit coset of $a \in G$ |
| b) Centre of G | d) none of these |

v) The value of $\Delta y_0 =$ -----

- | | | | |
|----------------|----------------|----------------|----------------|
| a) $y_0 - y_1$ | b) $y_1 - y_0$ | c) $y_2 - y_1$ | d) $y_1 - y_2$ |
|----------------|----------------|----------------|----------------|

vi) How many occupied cells must be a transportation matrix with 8 rows and 7 columns have so that it does not degenerate

- | | | | |
|-------|-------|-------|-------|
| a) 15 | b) 55 | c) 56 | d) 14 |
|-------|-------|-------|-------|

vii) Which of the following is not a proposition?

- a) Is mathematical boring? c) Diamond is harder than graphite
b) Man landed on the sun last year d) He finished his work and went away

viii) In a group $G = \{\pm 1, \pm i\}$ the inverse of element i is ...

- a) 1 b) i c) $-i$ d) -1

ix) What is the negation of the statement "There exists a city where it rains every day"?

- a) "There exists no city where it rains every day"
b) "There does not exist any city where it rains every day"
c) "It rains every day in all cities"
d) "It does not rain every day in all cities"

x) Which of the following is not a group?

- a) $(Z, -)$ b) $(R, +)$ c) $(N, .)$ d) $(N, +)$

B. Attempt any two of the following:

[10]

i) Find an initial basic feasible solution to the following Transportation Problem using the stepping stone method.

		Destination				
Origin		D1	D2	D3	D4	Supply
	O1	6	4	1	5	14
	O2	8	9	2	7	16
	O3	4	3	6	2	5
	Demand	6	10	15	4	35

ii) Determine whether the statement $\sim(p \wedge q) \vee r$ is a tautology, contradiction, or contingency.

iii) Use the graphical method to solve the following LP problem Maximize $z = 5x + 3y$, subject to the constraints $3x + 5y \leq 15$, $5x + 2y \leq 10$, $x, y \geq 0$.

Q. 2. Using Newton's backward interpolation formula, find y at $x = 6$ from following table

[10]

x:	1	3	5	7
y:	24	120	336	720

Q. 3. Translate into symbolic form and test the validity of the following argument: If 6 is even,

[10]

then 2 does not divide 7. Either 5 is not prime or 2 divides 7. But 5 is prime. Therefore, 6 is not even.

Q. 4. Find by Newton's method, a root of the equation $x^3 - 5x + 3 = 0$ correct to 3 decimal places.

[10]

Q. 5. Show that a) $(p \rightarrow q) \vee (\sim p \wedge \sim q)$ is a tautology.

[10]

b) $\sim(p \vee q) \wedge (p \vee q)$ is a contradiction.

Q. 6. Define cyclic group. Show that the group $G = \{1, -1, i, -i\}$ under multiplication operation is a cyclic group.

[10]

Q. 7. Determine the initial basic feasible solution of the following transportation problem by Vogel's [10]
approximation method.

Origins		Destinations					
		D1	D2	D3	D4	Supply	
		O1	1	2	1	4	30
		O2	3	3	2	1	50
		O3	4	2	5	9	20
		Demand	20	40	30	10	

Q. 8. Attempt any **four** of the following:

[20]

- Let $G = \{\pm 1, \pm i, \pm j, \pm k\}$ be group of quaternions. Find normalizer of each element of G .
- Verify the equivalence using truth table: $p \leftrightarrow q \equiv (p \rightarrow q) \wedge (q \rightarrow p)$.
- Evaluate $\int_0^1 \frac{1}{1+x} dx$ using trapezoidal rule by taking $h=0.2$.
- Obtain an initial basic feasible solution to the following Transportation Problem using the matrix minima method.

	Factories					
Warehouse		D1	D2	D3	D4	Supply
	O1	6	3	5	4	22
	O2	5	9	2	7	15
	O3	5	7	8	6	8
	Demand	7	12	17	9	

- Show that the set $N = \{0, 1, 2, 3, \dots\}$ is not group with respect to the operation of addition of integers.
- Convert the following L. P. P. in standard form
Maximize $z = 3x + 2y$ subject to, $x - y \geq 1$, $x + y \geq 3$, $x, y \geq 0$.

□□□