(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER 2025-JANUARY 2026

Paper Code: BCA105 **Subject: Fundamental of Computers and IT**

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt five questions in all including Q.No. 1 which is compulsory. Select one question from each unit.

Q1 Write short notes on the following **(Any Five):** **(4x5=20)**

a) Explain the block diagram of computer with all functional units.
b) What is the need for software on a computer? Explain.
c) What is the difference between data and information?
d) How a compiler differs from an interpreter?
e) Explain the TCP/IP model.
f) Describe the difference between Serial and Random access.
g) What is an IP address? How internet connection is setup?
h) What are advantages of floating point representation of numbers?

UNIT-I

Q2 a) Draw a block diagram of the structure of a digital computer and the interconnection of various units. Explain the functions of various units briefly. **(5)**

b) What are the various types of computers? Compare in terms of their capabilities. **(5)**

Q3 a) Describe the following: **(5)**

i) Generation of Programming Languages
ii) Error detecting codes
iii) Uses of two's complement representation of numbers

b) Differentiate between DOS, Linux and Windows Operating System in detail with their relative merits and demerits. **(5)**

UNIT–II

Q4 Write short notes on the following: **(2.5x4=10)**

a) Machine language
b) Assembly language
c) High level language
d) 4 GL

Q5 How computers can be classified based on the generation of the computers? Explain the technology used in each of the generation. **(10)**

UNIT–III

Q6 a) What are the various features of Vi editor? Explain with example. **(5)**

b) Explain the following commands of UNIX:- **(1.25x4=5)**

(i) pwd (ii) ls (iii) cp (iv) mv

Q7 Describe file management system (FMS) and DBMS. What are the advantages of DBMS over FMS? **(10)**

UNIT – IV

Q8 Describe various network topologies. Also mention their advantages and disadvantages. **(10)**

Q9 What is an Internet? What are the services provided by an internet? **(10)**

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END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER 2025-JANUARY 2026

Paper Code: BCA-103 **Subject: Programming Using 'C' Language**

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Attempt **any Four** of the following questions: **(4x5=20)**

a) What do you mean by pre-increment and post-increment operator? Explain with Example.
b) Distinguish between formal and actual parameters with example.
c) Differentiate between Structure and Union.
d) Differentiate function declaration and definition with suitable example.
e) What are preprocessor directives? From which symbol do they start?
f) Differentiate Break and Continue statement.
g) What is the purpose of file handling?
h) Write the properties of command line arguments in C.

Q2 Explain various types of operators used in C with examples. Write a program using ternary operator to find greatest among three numbers. **(10)**

OR

Q3 Explain various looping statements in C with the help of suitable examples. Write a program to find the product of digits of a number entered by the user. **(10)**

Q4 Explain the storage Classes in C with the help pf examples. **(10)**

OR

Q5 Write the syntax of declaring Arrays in C language with examples. Write a C program to find the largest Element of an Array in C using Loops. **(10)**

Q6 Explain structures. Write a C program to store the information of 10 employees (Ename, EID, dept, salary) using structures. Find who has the highest salary. **(10)**

OR **(2x5=10)**

Q7 Write short notes on:

a) File input-output operations
b) File Access modes

Q8 What are standard libraries in C? Give examples of functions in libraries stdio.h, math.h, and string.h. Write a C program to compare the length of two strings using string inbuild function. **(10)**

OR

Q9 Explain the structure of C program with the help of suitable example. Write a program to find the largest and smallest word in a string. **(10)**

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P-1/1

BCA-103

(Please write your Exam Roll No.)

END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER 2025-JANUARY 2026

Paper Code: BCA109 **Subject: Technical Communication**

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Write short notes on ***any four*** of the following: - **(4x5=20)**

a) Need and importance of communication
b) Discuss the seven Cs of communication
c) Guidelines for using Visual Aids
d) Types of Interviews
e) Guidelines for Sentence Construction

Q2 Communication is a two-way process". Explain the elements of the communication process in this context with a suitable diagram. **(10)**

OR

Q3 What are the factors responsible for the growing importance of communication? **(10)**

Q4 Discuss various types of meetings. Explain the planning and organization of a meeting. **(10)**

OR

Q5 a) What are the principles of effective oral communication? **(5)**

b) Discuss the technique of conducting Group Discussions and JAM sessions. **(5)**

Q6 Write a job application and draft your resume for the post of sales manager in an MNC. **(10)**

OR

Q7 What is the importance of Report writing? Explain elements of a formal report writing in detail. **(10)**

Q8 Explain Kinesics and Proxemics, Paralanguage, and Interpersonal Skills with examples. **(10)**

OR

Q9 What are the basic rules of business etiquette? Explain cubicles in detail. **(10)**

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END TERM EXAMINATION

First Semester [BCA] December 2025-January 2026

Paper Code: BCA101 ***Subject: Discrete Mathematics***

Time: 3 Hours ***Maximum Marks: 60***

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Attempt ***Any five*** of the following: **(4x5=20)**

a) What are proper and improper subsets?

b) Let R be the relation in the natural number N defined by the open " (x – y) is divisible by 5", prove that R is an equivalence relation.

c) Write the truth table for the formula
$(p \wedge q) \vee (\neg p \wedge \neg q)$

d) Consider $(A, \supseteq)$ where A = {{1,}, {2}, {3}, {4}, {1,2}, {1, 3} , {1,4} , {2,3}, {2, 4}, {3,4}}. Draw the hasse diagram of A.

e) Draw the complete bipartite graph of K24 and K33.

f) Define tautology and contradiction.

g) In a survey of 30 students 15 have taken economics, 10 have taken economics but not history. Find the number of students who have taken economics and history. Also find who have taken history but not economics.

Q2 a) Prove that $(A - B) \cup (B - A) = (A \cup B) - (A \cap B)$ **(5)**

b) Let U = { a, b, c, d, e} A = { a, b, d} and B = {b, d, e}
Find (1) $A \cup B$ (2) $B \cap A$ (3) $B - A$ (4) $A^c \cap B$ (5) $B^c - A^c$ **(5)**

OR

Q3 a) Write the contra positive, converse, and inverse of the conditional statement "The Indian Cricket wins when Sachin Tendulkar Scores 100" **(5)**

b) Obtain PCNF of $(\neg p \rightarrow r) \wedge (q \leftrightarrow p)$. and hence obtain its PDNF. **(5)**

Q4 a) Prove that every chain is a distributive lattice. **(5)**

b) Draw a Hasse diagram of $(X, \leq)$ where X = {1,2,3,4,6,8,12,24}and R be a division relation. Find the Hasse diagram of the poset **(5)**

OR

Q5 a) Let D30 = {1,2,3,5,6,10,15,30} and Let the relation R be divisor on D30. Find **(5)**
1. All lower bounds of 10 and 15. 2. The GLB of 10 and 15,
3. All upper bounds of 10 and 15 4. LUB of 10 and 15
5. Draw the Hasse Diagram.

b) Draw the Hasse diagram representing the partial ordering $\{(A, B) | A \subseteq B\}$ on the power set P(S) where S = {a, b, c}. Find the maximal, minimal, greatest and least elements of this partially ordered set. Is it complemented Lattice? Justify your answer. **(5)**

Q6 a) Find the number of integers between 1 and 250 that are divisible by any of the integers 2, 3, 5, and 7. **(5)**

b) There are six men and five women in a room. Find the number of ways four persons can be drawn from the room if (1) If they can be male or female, (2) two must be men and two females (3) they must all of the same sex. **(5)**

P.T.O

P-1/2

OR

Q7 a) Solve recurrence relation $S(n) - 3S(n-1) = 5(3^n)$ with $S(0) = 2$. **(5)**

b) There are three files of identical red, blue and green balls, where each file contains at least 10 balls. In how many ways can 10 balls be selected? (1) If there is no restriction. (2) If at least 1 red ball must be selected. (3) If at least 1 red, at least 2 blue, and at least 3 green balls must be selected (4) If at most 1 red ball is selected. **(5)**

Q8 a) Draw the complete graph K5 with vertices A, B, C, D, E. Draw all complete subgroups of K5 with 4 vertices. **(5)**

b) Prove that a connected graph G is Euler graph if and only if every vertex of G is of even degree. **(5)**

OR

Q9 a) If G is a connected simple graph with n vertices with $n \geq 3$, such that the degree of every vertex in G is atleast $\frac{n}{2}$, then prove that G is a Hamilton cycle. **(5)**

b) Let $\delta(G) \Delta (G)$ denotes minimum and maximum degrees of all the vertices of G respectively. Then show that for a non-directed graph G, $\delta(G) \leq 2|E| \ |V| \leq \Delta(G)$. **(5)**

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P-2/2

END TERM EXAMINATION

FIRST SEMESTER [BCA] DECEMBER 2025-JANUARY 2026

Paper Code: BCA107 **Subject: Web Technologies**

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Attempt **any Four** of the following questions **(4x5=20)**

a) Differentiate between client-side scripting and server-side scripting

b) Define Protocols and list the types of protocols that can be used for the security of a website.

c) Differentiate between While and Do while loop using the example of the Java script

d) Write the functionalities of CSS which are different from HTML in implementation.

e) Write a code in CSS using id selector and specified class selector.

f) List down the various types of listing tags along with their usage and syntax

g) Write a short note on Web Publishing

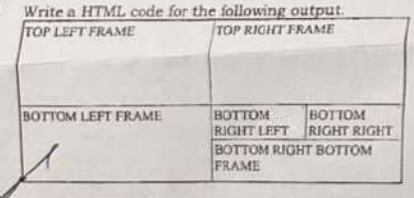
h) Write Syntax for the following

i. Container-fluid class
ii. Grid in bootstrap
iii. Style tag in css
iv. <thead>

Q2 Write a HTML code to create a feedback form using two radio buttons, dropdown menu, checkbox, text area and submit and reset buttons also post the form to an email. Also, there should be a thank you message with an alert button **(10)**

OR

Q3 Write a HTML code for the following output **(10)**



Q4 Write the CSS code using a pseudo class for mover, hover, visited and unvisited link using different colours **(10)**

OR

Q5 Differentiate between the different types of CSS using a code for each type **(10)**

Q6 Write a java script program for **(10)**

a) To find factorial of a number

b) To display 10 multiples of a number inserted by a user

P.T.O

OR

Q7 Differentiate between the built in and user defined functions of JavaScript with example. **(10)**

Q8 a) What is XML? Write its important features. **(5)**

b) Differentiate between XML and HTML **(5)**

OR

Q9 Define the concept of domain and how virtual domain is different from Web domain. **(10)**

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