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VI—20—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper-BCA-104A

(Element of Statistics)

(Tuesday, 3-12-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

(iv) Only non-programmable calculator is allowed.

1. Attempt any *five* of the following (3 marks each) :

15

(a) Describe scope of statistics in industry.

(b) Explain data.

(c) Write the merits and demerits of means.

(d) Define positive and negative correlation.

P.T.O.

- (e) Explain Variation.
- (f) Write drawback of statistics.
- (g) What is the probability of occurring 53 Sundays in a non-leap year ?

2. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain importance of statistics.
- (b) Write a limitation of statistics.
- (c) Write the scope of Statistics of computer science.
- (d) Calculate median for the following data.

Marks	0–20	20–40	40–60	60–80	80–100
No. of Students	1	9	32	16	7

- (e) One card is drawn from a well-shuffled pack of 52 cards. Find the probability of getting :
 - (i) A Red face card.
 - (ii) The jack of heart.

3. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain different measures of central tendency.
- (b) Write the merits and demerits of Medians.

WT

(3)

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- (c) Describe the variation in detail.
- (d) Calculate variance and standard deviation for the following data :

Xi	Fi
2	6
4	10
6	20
8	24
10	12
12	7

- (e) Find the Co-efficient of variance for the following data :

Class Interval	No. of Students (fi)
70–80	6
80–90	7
90–100	12
100–110	19
110–120	21
120–130	18
130–140	11
140–150	6

P.T.O.

4. Attempt any *three* of the following (5 marks each) : 15

- (a) Describe scatter diagram method of correlation.
- (b) Write a note on regression.
- (c) Write merits and demerits of Mode.
- (d) Explain Karl Pearson's coefficient of correlation.
- (e) Two random variables have the regression equation :

$$3x + 2y - 26 = 0$$

$$6x + y - 31 = 0$$

find the mean values.

5. Attempt any *three* of the following (5 marks each) : 15

- (a) Describe permutation and combination.
- (b) Explain event in detail.
- (c) If A and B are mutually exclusive events, then prove that

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

- (d) If one card is drawn from a pack of 52 cards, then what is the probability that it is ace or jack.

(e) Calculate Co-efficient of correlation from the following data :

Export (x)	Import (y)
10	9
6	4
9	6
10	9
12	11
13	13
11	8
9	4

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VI—01—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(Revised/CBCS Pattern)

COMPUTER APPLICATION

Paper-BCA-101

(Fundamentals of Computer Science and Information Technology)

(Tuesday, 26-11-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. Attempt any *five* of the following (3 marks each) :

15

(a) Definition of computer

(b) Cache memory

(c) USB flash drive

(d) Biometric devices

P.T.O.

- (e) Mainframe computer
- (f) Software and hardware
- (g) Light pen

2. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain basic organization of computer.
- (b) Explain email in detail.
- (c) Explain Hard disk drive.
- (d) Explain output device monitor with its type.
- (e) Explain compact disk in detail.

3. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain generation of computer.
- (b) Define file transfer protocol.
- (c) Explain Linux operating system.
- (d) Explain characteristics of computer in detail.
- (e) Explain computer memory in detail.

4. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain types of computer in detail.
- (b) Explain Digital versatile disk.

- (c) Define computer network with its type.
- (d) Explain DOS in detail.
- (e) Explain input devices.

5. Attempt any *three* of the following (5 marks each) :

15

- (a) Explain types of web browser.
- (b) Explain output device in detail.
- (c) Explain OSI model in detail.
- (d) Explain types of operating system.
- (e) Explain memory card.

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VI—21—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

MATHEMATICAL TECHNIQUES IN COMPUTER SCIENCE

(Tuesday, 3-12-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if required.

(iv) Each question carries equal marks.

1. Attempt any *five* of the following :

15

(a) Describe transpose of matrix.

(b) Explain determinant of a matrix.

(c) State divisibility test of 2 and 3.

(d) Describe simple and multiple graphs.

(e) Write a note on intersection of two sets.

(f) Write a note on union of two sets.

(g) Find L.C.M. of 12, 15 and 30

P.T.O.

2. Attempt any *three* of the following : 15

- (a) State and verify two commutative properties of set with help of suitable example.
- (b) Explain representation of sets.
- (c) Write properties of set union and intersection.
- (d) Explain equal sets with example.
- (e) If set $A = \{2, 4, 6, 8, 10\}$, $B = \{1, 2, 3, 4, 5, 6, 7\}$ and $U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, then find :
 - (i) $A \cap B$
 - (ii) $A \cup B$
 - (iii) $A - B$
 - (iv) $B - A$
 - (v) $A^c \cup B$

3. Attempt any *three* of the following : 15

- (a) Explain arithmetic progressions.
- (b) A person runs 200 meters race in 24 seconds. His speed is in km/hr is how much ?
- (c) The H.C.F. of two numbers is 11 and their L.C.M. is 693. If one of the number is 77, then find other.

- (d) A does a work in 12 days and B does the same work in 13 days. In how many days they together will complete the same work.
- (e) Find H.C.F. and L.C.M. of $2^2 \times 3^6 \times 5^3 \times 9^4$; $1^3 \times 2^3 \times 3^2 \times 7^2$ and $2^3 \times 3^4 \times 5 \times 7^3$.

4. Answer any *three* of the following :

15

- (a) Explain matrix in detail.
- (b) Explain multiplication of the matrices.
- (c) Find the inverse of the matrix $A = \begin{bmatrix} 4 & 3 & -2 \\ 5 & 3 & 1 \\ -2 & 4 & 6 \end{bmatrix}$
- (d) If $A = \begin{bmatrix} 3 & -1 & 2 \\ 6 & 2 & -5 \\ 4 & 1 & 3 \end{bmatrix}$, then show that A^2 is a null matrix.
- (e) If $A = \begin{bmatrix} 5 & -3 \\ 2 & 1 \end{bmatrix}$, then show that $2A^2 - 3A - 5I = 0$

5. Attempt any *three* of the following :

15

- (a) Write a note on isomorphic graphs.
- (b) Explain degree of vertices.
- (c) Write a note on binary tree.
- (d) Describe path and circuit.
- (e) Prove that a tree with n vertices has $(n - 1)$ edges.

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VI—07—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER APPLICATION

Paper-BCA-102

(Office Automation)

(Thursday, 28-11-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. Attempt any *five* of the following (3 marks each) : 15

(a) How to open the Home Screen of MS-Word ?

(b) What is MS-Excel ? State its advantages.

(c) How to create a New Presentation Based on Templates in MS PowerPoint ?

(d) Write down the procedure to create Charts in MS-Excel.

P.T.O.

- (e) Explain Headers and Footers tool in MS-Word.
- (f) Explain the features of Style Tab in MS-Word.
- (g) How to open the Home Screen of MS Access ?

2. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain the Editing Options in MS-Word.
- (b) Explain Mail Merge in MS-Excel.
- (c) Explain the features of Home tab of MS-Word.
- (d) What is Goal Seek in MS-Excel ? Explain in detail.
- (e) What is Slide Transition ? Write the procedure to apply Slide Transition.

3. Attempt any *three* of the following (5 marks each) : 15

- (a) Explain the Splitting of Column in MS-Excel.
- (b) What is Custom Animation Effect in MS PowerPoint ? Write procedure to Apply the same.
- (c) What is Slideshow ? Explain how Slideshow improve Presentation ?
- (d) How to add Audio and Video on Slides in MS PowerPoint.
- (e) What is Data Validation in MS-Excel ?

4. Attempt any *three* of the following (5 marks each) : 15

- (a) Which are pre-set conditional formatting ? Explain in detail.
- (b) Write down the procedure to open Home Screen of MS PowerPoint.
- (c) How to adjust Row Height and Column Width in MS Excel ?
- (d) Explain different formatting option by using Format Cell option.
- (e) Explain printing option in MS-Word.

5. Write short notes on any *three* of the following (5 marks each) : 15

- (a) What are the advantages and disadvantages of MS-Access ?
- (b) Explain how to generate Database in MS-Access.
- (c) Explain how to perform Queries in MS-Access.
- (d) Explain how to generate Reports in MS-Access.
- (e) Explain how to create Form in MS-Access.

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VI—13—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper-BCA-103

(Programming in C)

(Saturday, 30-11-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if required.

1. Attempt any *five* of the following (3 marks each) : 15

(a) Explain the history of C.

(b) Explain the primary data types in C.

(c) Explain the Break and Continue statements.

(d) What is a function ?

(e) Explain the Array declaration and initialization.

P.T.O.

- (f) Explain the Unions.
- (g) Explain the Bit-Wise operator in 'C'.
2. Attempt any *three* of the following (5 marks each) : 15
- (a) Explain in detail structure of a C program.
- (b) Explain in detail keyword and variables.
- (c) Explain in detail printf() and scanf().
- (d) WAP in C to read two integer number and swap it without using third variable.
- (e) WAP in C to read name of student, exam no. and marks in three subject. Find the print total marks and average marks.
3. Attempt any *three* of the following (5 marks each) : 15
- (a) Explain in detail if-else statement with example.
- (b) Explain in detail Switch statement with example.
- (c) Explain in detail For Loop with example.
- (d) WAP in C to read +ve integer no. and check prime or not.
- (e) WAP in C to read four digit number and print in reverse order.
4. Attempt any *three* of the following (5 marks each) : 15
- (a) Explain in detail recursion with example.

- (b) Explain in detail function declaration and definition.
- (c) Explain in detail Nested for loop with example.
- (d) WAP in C to read a +ve integer number and find cube using user defined function.
- (e) WAP in C to read a +ve integer number and find factorial using user defined function.

5. Attempt any *three* of the following (5 marks each) :

15

- (a) What is array ? Explain in detail one-dimensional array.
- (b) Explain in detail standard string library functions.
- (c) Explain in detail creating structures.
- (d) WAP in C to read book record and display on screen using structure.
- (e) WAP in C to read 10-array elements and sort in descending order.

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VI—01—2024

FACULTY OF SCIENCE AND TECHNOLOGY

BCA (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2024

(Revised/CBCS Pattern)

COMPUTER APPLICATION

Paper-BCA-101

(Fundamentals of Computer Science and Information Technology)

(Tuesday, 26-11-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—75

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1. Attempt any *five* of the following (3 marks each) :

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(a) Definition of computer

(b) Cache memory

(c) USB flash drive

(d) Biometric devices

P.T.O.

- (e) Mainframe computer
- (f) Software and hardware
- (g) Light pen

2. Attempt any *three* of the following (5 marks each) : 15

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- (b) Explain email in detail.
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5. Attempt any *three* of the following (5 marks each) :

15

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