

Printing Pages :2

Paper Code: BCA-102/DCA-101

B (SVSU:2023-24/R)

Enrollment No.														
----------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BCA/DCA

Ith YEAR 1st SEM. EXAMINATION

Computer Fundamental & Office Automation

Subject Code- BCA-102/DCA-101

[Time : 03:00 Hours]

[Max. Marks : 70]

Note: Attempt all the questions as per given instructions.

I. Multiple Choice Questions (MCQs) [01×15=15]

- I Which of the following is NOT an anti-virus software?
A) Avast B) Linux C) Norton D) Kaspersky
- II What is the full form of PROM?
A) Program read-only memory B) Primary read-only memory
C) Programmable read-only memory D) Program read-output memory
- III In the context of computing, a byte is equal to _____ bits ?
A) 4 B) 16 C) 24 D) 8
- IV Which type of computers is used to control air traffic and radar of national defence ?
A) Personal computers B) Analogue computers
C) Hybrid computers D) Digital computers
- V Third generation computers used: ?
A) vacuum tubes B) integrated circuits
C) Transistors D) VLSI technique
- VI Which of the following is NOT a portable device?
A) iPods B) Laptops C) Desktop computers D) Thumb drives
- VII In the field of computing, what does ENIAC stand for?
A) Electronic Numerical Integrator and Computer
B) Electronic Numerical Integrated Advanced Computer
C) Electronic Numerals Integration and Computing
D) Electronic Numbers Integration and Computer
- VIII The speed of the Central Processing Unit (CPU) is measured in _____, which represents a CPU cycle ?
A) Gigabyte (GB) B) Hertz (Hz)
C) Terabyte (TB) D) Kilobyte (KB)
- IX Desktop Computers, Laptop Computers, tablets and smartphones are different types of _____ ?
A) Supercomputers B) Mainframe Computers
C) Microcomputers D) Minicomputers

- X In computing, _____ is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules. ?
A) cookie B) spyware C) spam D) firewall
- XI Linux is _____ ?
A) an interpreter B) an operating system
C) an assembly language D) a high level language
- XII In the context of memory size in computer data storage, one gigabyte is equal to how many megabytes ?
A) 32 MB B) 1012 MB C) 64 MB D) 1024 MB
- XIII Which of the following is a type of memory and is similar to RAM? It is used by computers to move data between the RAM and the CPU?
A) Hypertext Link B) ROM C) Cache D) I Beam
- XIV Which of the following is not a softcopy devices?
A) Plotter B) Projector C) Monitor D) Speaker
- XV What does HLL stand for in computing?
A) High Low Language B) Hyper Level Language
C) High Level List D) High Level Language
2. **Answer in long (any three)** [10×3=30]
- I Elaborate the various Input and Output Devices?
- II Explain 2nd and 3rd generations of computer? Also explain characteristics of computer?
- III Define computer. Explain the characteristics briefly?
- IV Explain the fundamental units of a computer with a block diagram?
3. **Answer in short (any five)** [5×5=25]
- I Draw a flow chart to check whether a given number is even or odd.
- II . Write an algorithm to check largest number out of given three numbers.
- III Differentiate between interpreter and compiler.
- IV Define computer memory. Explain different types of computer memory.
- V Explain different feature of MS-DOS? Explain any five MS-DOS commands?
- VI What is a Flowchart? Explain its disadvantages?
- VII Explain different generations of Operating System?

[illegible]

BCA

1st YEAR 1st SEM. EXAMINATION
Mathematics I (BCA -101)

[Time : 3:00 Hours]

[Max. Marks : 70]

1. Objectives Question: Answer All Question| 15×1=15 |

1. The number of elements in the Power set $P(S)$ of the set $S = \{ \emptyset, 1, \{2, 3\} \}$ is
A. 2 B. 4 C. 8 D. None of These
2. The set of positive integers is
a) Infinite b) Finite c) Subset d) Empty
3. The number of elements in the power set of the set $\{ \{a, b\}, c \}$ is
A. 8 B. 4 C. 3 D. 7
4. What is the Cartesian product of $A = \{1, 2\}$ and $B = \{a, b\}$?
a) $\{(1, a), (1, b), (2, a), (2, b)\}$ b) $\{(1, 1), (2, 2), (a, a), (b, b)\}$
c) $\{(1, a), (2, a), (1, b), (2, b)\}$ d) $\{(1, 1), (a, a), (2, a), (1, b)\}$
5. The determinant of identity matrix is?
a) 1 b) 0 c) Depends on the matrix d) None of the mentioned
6. What is the order of a matrix?
a) number of rows X number of columns
b) number of columns X number of rows
c) number of rows X number of rows
d) number of columns X number of columns
7. If O be the origin and $\vec{OP} = 2\hat{i} + 3\hat{j} - 4\hat{k}$ and $\vec{OQ} = 5\hat{i} + 4\hat{j} - 3\hat{k}$, then $\vec{PQ}$ is equal to
(a) $7\hat{i} + 7\hat{j} - 7\hat{k}$ (b) $-3\hat{i} + \hat{j} - \hat{k}$
(c) $-7\hat{i} - 7\hat{j} + 7\hat{k}$ (d) $3\hat{i} + \hat{j} + \hat{k}$
8. The scalar product of $5\hat{i} + \hat{j} - 3\hat{k}$ and $3\hat{i} - 4\hat{j} + 7\hat{k}$ is
(a) 10 (b) -10 (c) 15 (d) -15
9. $\vec{k} \times \vec{j} =$ (a) 0 (b) 1 (c) $\vec{i}$ (d) $-\vec{i}$
10. $\vec{a} \cdot \vec{a} =$ (a) 0 (b) 1 (c) $|\vec{a}|^2$ (d) $|\vec{a}|$
11. if $\vec{a} = \vec{i} - \vec{j} + 2\vec{k}$ and $\vec{b} = 3\vec{i} + 2\vec{j} - \vec{k}$ then the value of $(\vec{a} + 3\vec{b})(2\vec{a} - \vec{b}) =$
(a) 15 (b) -15 (c) 18 (d) -18
12. if $\vec{a} = \vec{i} + 2\vec{j} + 3\vec{k}$ and $\vec{b} = 3\vec{i} + 2\vec{j} + \vec{k}$, then $\cos \theta =$
(a) $6/7$ (b) $5/7$ (c) $4/7$ (d) $1/2$
13. The definition of the first derivative of a function $f(x)$ is
a) $f(x) = \lim_{h \rightarrow \infty} \frac{f(x+h) - f(x)}{h}$ b) $f(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$
c) $f(x) = \lim_{h \rightarrow \infty} \frac{f(x-h) + f(x)}{h}$ d) $f(x) = \lim_{h \rightarrow 0} \frac{f(x-h) + f(x)}{h}$
14. Given: $y = 5e^{3x} + \sin x$, then $\frac{dy}{dx}$ is
a) $5e^{3x} + \cos x$ b) $5e^{3x} - \cos x$
c) $15e^{3x} + \sin x$ d) $15e^{3x} + \cos x$

P.T.O.

15. Given $y = \sin 2x$, $\frac{dy}{dx}$ at $x = 0$ is

- a. 0 b. 1 c. 2 d. -1

II Long Question : Answer Any Three

[10×3=30]

1. Verify Cayley Hamilton theorem

$$A = \begin{bmatrix} 0 & 0 & 1 \\ 3 & 1 & 0 \\ -2 & 1 & 4 \end{bmatrix}$$

Also find A^{-1}

2. For what values of a and b do the equation $x + 2y + 3z = 6$, $x + 3y + 5z = 9$ and $2x + 5y + az = b$ have

- i) No Solution ii) Unique Solution iii) More than one Solution

3. Find the differentiation of

- i) $\cos x$ ii) x^n

By using the first principal.

4. State the principal of Induction and show that

$$\sum_{k=1}^n (2k - 1) = n^2$$

$$\sum_{k=1}^n k = \frac{n(n+1)}{2}$$

5.

Prove that $\int_0^{\pi/2} \frac{\sin x}{\sin x + \cos x} dx = \frac{\pi}{4}$

III Short Question: Answer any Five

[5×5=25]

1. If $A = \begin{bmatrix} 1 & -1 & 2 \\ 3 & 1 & 4 \\ 1 & 1 & 1 \end{bmatrix}$

find the eigenvalues and eigenvectors of matrix A.

2. Define the vector in 3-dimensions with example.

3. Define symmetric and skew symmetric Matrix. Give an example.

4. Show that

$A = \begin{bmatrix} 1 & 1-i & 2 \\ 1+i & 3 & i \\ 2 & -i & 1 \end{bmatrix}$ is Hermitian.

5. Let $A = \{3, 6, 12, 15, 18, 21\}$, $B = \{4, 8, 12, 16, 20\}$. Find $(A - B) \cup (B - A)$.

6. Draw the venn Diagrams of the following

i) $A \cup (B \cap C)$ ii) $\frac{A'}{B}$

7. State the Division Algorithm Formula and Divide the polynomial $5x^3 + 3x + 8$ by polynomial $x + 2$.

8. What is the Euclidean algorithm for finding the greatest common divisor? Find the gcd(12173, 33182)

9. If $A = \{2, 3, 4, 5, 6, 7\}$, $B = \{3, 5, 7, 9, 11, 13\}$ then find $A \Delta B$.

10. Solve the equation by cramer's rule :

$x + 2y + 3z = 6, 2x + 4y + z = 17, 3x + 2y + 9z = 2.$

Printing Pages :2

Paper Code: AEC-01 A (SVSU:2023-24/R)

Enrollment No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Program Name: BCA/B.Com/MBA

1stSemester / I Year Examination

Subject Code: AEC-01

Subject Name: English Communication

[Time: 02:00 Hours]

[Max. Marks: 35]

Note: 1. Attempt all the questions as per given instructions.

1. Multiple Choice Questions (MCQs)

[01×10=10]

- I Communication means
(a) sharing (b) interacting (c) understanding the meaning (d) All
- II Noise in communication can be called _____
(a) Support (b) Barrier (c) Both (d) None
- III We, they him, I, you, me, she... are examples of which part of speech?
(a) noun (b) conjunction (c) verb (d) pronoun
- IV Understanding _____ parts of speech forms the base of the grammar.
(a) 3 (b) 6 (c) 7 (d) 8
- V Letter to which of the following is formal type?
(a) Mother (b) Friend (c) The Editor (d) Son
- VI "She has six mangoes." is an example of _____
(a) Exclamatory (b) Declarative (c) Imperative (d) Interrogative
- VII "How are you?" is an example of _____
(a) Interrogative (b) Imperative (c) Declarative (d) Exclamatory
- VIII The technical term for body language is _____
(a) paralanguage (b) kinesics (c) proxemics (d) None
- IX He bought a house.' is an example of _____
(a) Transitive verb (b) Intransitive verb (c) both (d) none
- X Which is the correct style?
a) Your's obediently (b) Your obediently
c) Yours obediently (d) Your's obediently

2. Answer in long (any three)

[3×5=15]

- I Write a letter to the Editor of Times of India, New Delhi about the need to check noise pollution.
- II Draft a suitable Resume for a multinational company for the post of Sales Manager, with necessary focus on your professional expertise.

III Today, most of the countries use bills and coins for money. However, over the centuries, a wide variety of objects have been used as money. For example, shells have been used as money. They are in fact, one of the oldest forms of money. They were used by Africans and also by American Indians. Some ancient people used grain. The ancient Egyptians used papyri, plants that could be used to make paper. Some countries have used stones so large that they had to be carried on poles. Even today, cattle and shells are used as money in some countries. Those objects have been used as money because people agreed on their value.

- a. What do most countries use for money?
- b. What is one of the oldest forms of money?
- c. What did ancient Egyptians use?
- d. What is used today in some countries?
- e. Why could these objects be used as money?

IV Your uncle has sent a birthday gift for you. Write a letter to him thanking for the gift.

V Write a paragraph on "Pollution due to Urbanization."

3. Answer in short (any five) [3x5=10]

I What are the advantages and disadvantages of a group discussion?

II What do you mean by personal grooming?

III Write a short note on your strengths and weaknesses.

IV Fill in the blanks with a suitable article.

a. My brother is ___ singer.

b. ___ Sun shines brightly.

V Identify the underlined part of speech

a. I want an ice-cream.

b. The man in black coat looks upset.

VI Fill in the blank with correct form of verb given in the bracket.

a. He ___ (come) here everyday.

b. She ___ (live) here since 1990.

VII Convert the following sentences as per the instruction given in the bracket.

a. They are going to the market. (Past perfect tense)

b. She was playing with the doll. (Present Continuous tense)

26/12/2023

Printing Pages :2

Paper Code: BCA-103

A (SVSU:2023-24/R)

Enrollment No.

BCA

1st YEAR 1st SEM. EXAMINATION

Subject Code- BCA-103

Subject Name-Programming Principle & Algorithms

[Time : 3:00 Hours]

[Max. Marks : 70]

Note: . Attempt all the question as per given instruction.

1. Multiple Choice Questions (MCQs)

[01×15=15]

1. Objectives Question: Answer All Question

1. The format identifier '%f' is also used for _____ data type.
 A. Char B. Int C. Float D. Double

2. Who is father of C Language?

A. Bjarne Stroustrup B. James A. Gosling
 C. Dennis Ritchie D. Dr. E.F. Codd

3. For 16-bit compiler allowable range for integer constants is _____?
 A. -3.4e38 to 3.4e38 B. -32767 to 32768
 C. -32668 to 32667 D. -32768 to 32767

4. Name the loop that executes at least once.

a) For b) If c) While d) Do-While

5. How many main() function we can have in our program?

A. 1 B. 2 C. No Limit D. Depends on compiler

6. What is Keywords?

- a) Keywords have some predefine meanings and these meanings can be changed.
 b) Keywords have some unknown meanings and these meanings cannot be changed.
 c) Keywords have some predefined meanings and these meanings cannot be changed.
 d) None of the above

7. #include is called:

A. File Inclusion B. Selective Inclusion
 C. Conditional Compilation D. Pre-processor

8. What is the work of break keyword?

- a) Halt execution of program b) Restart execution of program
 c) Exit from loop or switch statement d) None of above

9. Which of the following is allowed in a C Arithmetic instruction?

a) [] b) {} c) () d) None of the above

10. Last step in process of problem solving is to.....?

- a. Design a solution b. Define a problem
 c. Practicing the solution d. Organizing the data

P.T.O.

11. C Language is a successor to which language?
 - a) FORTRAN
 - b) D Language
 - c) Basic
 - d) CPL and BCPL
12. C is _____ type of programming language?
 - a) Object Oriented
 - b) Procedural
 - c) Bit level language
 - d) Functional
13. C language is used in the development of?
 - a) Databases
 - b) Graphic applications
 - c) Word Processors
 - d) All of the above
14. In the standard library of C programming language, which of the following header file is designed for basic mathematical operations?
 - a) math.h
 - b) conio.h
 - c) dos.h
 - d) stdio.h
15. The format identifier '%d' is also used for _____ data type
 - a) Char
 - b) Int
 - c) Float
 - d) Double

II Long Question : Answer Any Three [10×3=30]

1. What are the data types? Explain all the types of data types in c-programming.
2. What are the operators? Explain Arithmetic, Relational, Conditional operators in details.
3. Write a program to calculate wheatear and enter number is palindrome number or not.
4. What do you mean by function? Explain function declaration, function calling and function definition?

III. Short Question: Answer any Five [5×5=25]

1. Write a short note on translators.
2. What are the variables? Explain the rules of defining variables.
3. Write a program to check whether an enter number is even or odd.
4. What do you mean by goto statement? Explain with programming example.
5. Write a short note on call by value or call by reference.
6. Write a program to check whether an entered number is prime number or not prime?
7. Explain all the types of computer languages?