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B.C.A (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
ENGLISH (Compulsory)
Literary Voyage

Day & Date: Monday, 23-01-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Rewrite the following sentence by choosing the correct alternatives: 08

- 1) Who wanted an autograph of Gandhi?
 - a) students from Cambridge
 - b) students from Oxford
 - c) students from Harvard
 - d) students from Stanford

- 2) What did the grandmother desire to do on her deathbed?
 - a) Talk and comfort the family
 - b) Pray God and tell her beads
 - c) Dream of bygone days
 - d) Spent her time talking to her grandson

- 3) Dangers and difficulties are _____.
 - a) part and parcel of life
 - b) the things one must avoid
 - c) the things that one must escape from
 - d) the tests of your success or failure

- 4) Who sung praises for the flowers?

a) Bards	b) Oracles
c) Saints	d) Gods

- 5) Which flower won the competition?

a) Rose	b) Lily
c) Both	d) None of the two

- 6) The boy in the poem 'The Toys' is _____.

a) the speaker of the poem	b) a mother less child
c) an adamant child	d) a naughty little fellow

- 7) The government _____ (judged) the strength of the cyclone Amphan. (use suitable prefix)

a) mis	b) dis
c) un	d) semi

- 8) This is an interesting task. (Identify the underline word)

a) Adjective	b) Adverb
c) Pronoun	d) Conjunction

- Q.2 Write the answer of any 'Four' of the following. 12**
- a) How is untouchability related to the essay 'The Birth of Khadi'?
 - b) How did the grandmother take care of the author?
 - c) What are the qualities the poet discusses in "Let me not pray to be sheltered _____"?
 - d) Why did the poetess focus on the lotus flower in the poem?
 - e) Discuss the theme of guilt in the poem "The Toys"?
 - f) What are the different words used for staying away from alcohol in this essay 'The Birth of Khadi'?

- Q.3 What is communication? When would you say that your communication is successful? 10**

OR

What is formal communication? Write a note on the principles of effective communication.

- Q.4 What is intrapersonal communication? How to improve to it? 10**

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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
FUNDAMENTALS OF COMPUTER (Paper - I)**

Day & Date: Tuesday, 24-01-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternatives from the options. 08

- 1) _____ device is used in third generation.
 - a) IC
 - b) VLSI
 - c) ALSI
 - d) Vacuum tube
- 2) A hybrid computers is the one having combined properties of _____.
 - a) Micro and Mini computers
 - b) Mini and super computers
 - c) Main frame and super computers
 - d) Analog and Digital computers
- 3) _____ is output device designed to get soft copy output.
 - a) Scanner
 - b) Monitor
 - c) Printer
 - d) Plotter
- 4) Which of the following is a secondary memory device?
 - a) RAM
 - b) Hard Disk
 - c) ROM
 - d) None of the Above
- 5) In MICR commonly used font is _____.
 - a) F13D
 - b) E13D
 - c) E13B
 - d) F13B
- 6) Magnetic tape is a type of _____ access device.
 - a) Sequential
 - b) Direct access
 - c) Step
 - d) Indirect
- 7) Example of a good password is _____.
 - a) name of a partner or spouse
 - b) name of a child or pet
 - c) words contains multiple random digits
 - d) none of these
- 8) Backup of the source data can be created _____.
 - a) On the same device
 - b) On another device
 - c) At some other locate
 - d) All of these

Q.2 Answer the following questions. (Any Four) 08

- a) What is search engine?
- b) What is address bus?
- c) What is ROM?
- d) Give the List of computer applications.
- e) What is a volatile and non-volatile memory?
- f) Define Printer.

- Q.3 Write short notes. (Any Two)** **08**
- a) E-mail
 - b) CD
 - c) Assembly Language
- Q.4 Answer of the following questions. (Any Two)** **08**
- a) Write difference between Interpreter and Compiler.
 - b) Explain types of network.
 - c) What is input Device? Explain keyboard in details.
- Q.5 Answer of the following questions. (Any One)** **08**
- a) What is computer? Explain block diagram of computer.
 - b) What is Output Device? Explain monitor in detail.

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**B.C.A (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
OFFICE AUTOMATION (Paper - II)**

Day & Date: Wednesday, 25-01-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw necessary diagrams whenever necessary.
4) Use of logarithmic table and calculator is allowed.

Q.1 Choose the correct alternatives from the options.

08

- 1) What is the extension of word files?
 - a) .dot
 - b) .txt
 - c) .xlms
 - d) .doc
- 2) Bold, Italic, Regular are known as _____.
 - a) Text Effect
 - b) Font Effect
 - c) Font Style
 - d) Word Art
- 3) Formula in Excel start with _____.
 - a) %
 - b) =
 - c) +
 - d) -
- 4) What is the extension of Power Point File?
 - a) .pmt
 - b) .pnt
 - c) .ppt
 - d) .pdf
- 5) The Mail Server as defined in the text uses the _____ protocol.
 - a) HTTP
 - b) FTP
 - c) POP
 - d) SMTP
- 6) WWW Means _____.
 - a) World Wide WAN
 - b) World Wide Web
 - c) World WAN Web
 - d) World WAN WAN
- 7) Which of the following is not a font style?
 - a) Bold
 - b) Italics
 - c) Regular
 - d) Superscript
- 8) In Ms Excel _____ are text entries.
 - a) Labels
 - b) Tupple
 - c) Attributes
 - d) Character

Q.2 Answer the following questions. (Any Four)

08

- a) What is Power Point?
- b) List out the Main components of MS-Word.
- c) How can you add a new Excel work Sheet?
- d) What is the size limitation for on Access Database?
- e) What is short cut key for add a new file in MS-Word?

- Q.3 Write short notes. (Any Two) 08**
- a) Explain Recycle Bin.
 - b) How to insert slide number on presentation?
 - c) Explain features of MS-WORD.
- Q.4 Answer of the following questions. (Any Two) 08**
- a) Explain different parts of windows.
 - b) Explain any four short cut keys in MS-Word.
 - c) What is table? Explain different operations on table.
- Q.5 Answer of the following questions. (Any One) 08**
- a) What is window? Explain functions of windows
 - b) Explain creation of tables in MS-Word.

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**B.C.A (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
PROGRAMMING AND PROBLEM SOLVING USING 'C' (Paper – I)**

Day & Date: Tuesday, 27-01-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions: 1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.
3) Figures to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.
(At. Wts.:H=1, C=12, O=16, N=14, Na=23, Cl=35.5).

Q.1 Choose the correct alternatives from the options.

08

- 1) Enumeration is a _____ data type in c?
 - a) library
 - b) user defined
 - c) built-in
 - d) none of the above
- 2) An algorithm represented in the form of programming language is _____.
 - a) Flowchart
 - b) Pseudo Code
 - c) Program
 - d) None
- 3) Header files in C contain _____.
 - a) Compiler command
 - b) Library functions
 - c) Header information of c programs
 - d) Operators for files
- 4) The precedence of arithmetic operators is (from highest to lowest)?
 - a) %, *, /, +, -
 - b) %, +, /, *, -
 - c) +, -, %, *, /
 - d) %, +, -, *, /
- 5) Which is correct with respect to size of the datatypes?
 - a) char >int> float
 - b) int> char > float
 - c) char <int<double
 - d) double > char >int
- 6) Which of the following is true for variable names in C?
 - a) They can contain alphanumeric characters as well as special characters
 - b) It is not an error to declare a variable to be one of the keywords(like goto, static)
 - c) Variable names cannot start with a digit
 - d) Variable can be of any length
- 7) What is right way to initialize array?
 - a) intnum[6]={2, 4, 12, 5, 45, 5};
 - b) int n { } ={4, 12, 5, 45, 5};
 - c) intn {6}={2, 4, 12};
 - d) int n(6)={4, 12.5, 45, 5};

8) What will be the output following c code?

```
#include<stdio.h>
void main()
{
int k=0;
for(k<3: k++)
printf("Hello");
}
```

- a) Compile time error b) Hello is printed thrice
c) Nothing d) Varies

Q.2 Answer the following questions. (Any Four)

08

- a) What is algorithm?
b) Draw symbol for decision and process.
c) What is identifier?
d) Syntax of switch case.
e) What is two dimensional array?
f) What is loop?

Q.3 Write short notes. (Any Two)

08

- a) Pseudo code
b) Structure of c program
c) goto Statement

Q.4 Answer of the following questions. (Any Two)

08

- a) What is data type? Explain Primitive data types in details?
b) Write a C program to find out sum of digit of given number and reverse that number.
c) Write a C program to find out given number is prime or not.

Q.5 Answer of the following questions. (Any One)

08

- a) What is array? Explain one dimensional array with one example.
b) What is operator? Explain different operators used in c with example.

- Q.3 Write short notes. (Any Two)** **08**
- a) Table tag
 - b) DOCTYPE Element
 - c) Media tag
- Q.4 Answer the following questions. (Any Two)** **08**
- a) Explain CSS Properties details.
 - b) Explain GET and POST methods with example.
 - c) What is an Event? Explain with example.
- Q.5 Answer the following questions. (Any One)** **08**
- a) What is List tag? What are the types of List tag explain with example?
 - b) Explain the Form tag with input tag attributes.

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B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
BASICS OF MATHEMATICS (Paper - I)

Day & Date: Monday, 30-01-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw necessary diagrams whenever necessary.
 4) Non programmable calculators are allowed.

Q.1 Choose the correct alternatives from the options.

08

- 1) Disjunction of the statements p and q are false if both the statements are
 - a) True
 - b) False
 - c) True and false
 - d) True or false
- 2) If sets A & B are disjoint if _____.
 - a) $A \cup B = \phi$
 - b) $A \cap B = \phi$
 - c) $A \cup B = A$
 - d) $A \cap B = B$
- 3) A set having only one element is known as _____.
 - a) Singleton set
 - b) Binary set
 - c) Null set
 - d) Finite set
- 4) Let $A = \{a, b, c, d, e, f, g, h\}$ then cardinality of A is _____.
 - a) 8
 - b) 10
 - c) 9
 - d) 0
- 5) A relation R which is reflexive, symmetric and transitive is called as _____ relation.
 - a) Partial ordering
 - b) Equivalence
 - c) Void
 - d) Inverse
- 6) If XRY and YRX then the relation R is called _____ relation.
 - a) symmetric
 - b) asymmetric
 - c) antisymmetric
 - d) equivalence
- 7) For two sets A & B If $n(A \cup B) = 12, n(A) = 8, n(B) = 7$ then $n(A \cap B) =$ _____.
 - a) 3
 - b) 4
 - c) 5
 - d) 6
- 8) The order of row matrix is _____.
 - a) $n \times n$
 - b) $1 \times n$
 - c) $n \times 1$
 - d) 1×1

Q.2 Answer the following questions. (Any Four)

08

- a) Define square matrix with example.
- b) Prepare the truth table of $(p \vee \sim q)$
- c) Define transitive relation.
- d) Find the power set of $A = \{a, b, c\}$
- e) State Inclusive-exclusive principles for three sets.
- f) If $\begin{bmatrix} 5 & 7 \\ x & 1 \\ 2 & 6 \end{bmatrix} - \begin{bmatrix} 1 & 2 \\ -3 & 5 \\ 2 & y \end{bmatrix} = \begin{bmatrix} 4 & 5 \\ 4 & -4 \\ 0 & 4 \end{bmatrix}$ Then find x & y.

Q.3 Answer the following questions. (Any Two)

08

- a) Define symmetric matrix & skew symmetric matrix with example.
- b) In a city 20% of the population travels by car, 50% travels by bus and 10% travels by both car and bus. Then, find persons travelling by car or bus.
- c) Let $A = \{1, 2, 3\}$. Let R be the relation defined on the set A given by $R = \{(1,2), (1,3), (2,1), (2,2), (2,3), (3,3)\}$. Write matrix of relation R . Also draw digraph of relation R . & find in degree & out degree of each vertex.

Q.4 Answer of the following questions. (Any Two)

08

- a) Let X be the universal set, for the nonempty sets A and B , verify the De Morgan's laws.
- i) $(A \cup B)' = A' \cap B'$
- ii) $(A \cap B)' = A' \cup B'$
- Where $X = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{1, 2, 3, 4, 5\}$ $B = \{1, 2, 5, 6, 7\}$
- b) Using truth table prove that, $p \wedge (q \vee r) \equiv (p \wedge q) \vee (p \wedge r)$
- c) Find the number of integers between 1 to 700 which are divisible by 3 or 5, neither by 3 nor by 5.

Q.5 Answer of the following questions. (Any One)

08

- a) Define tautology, contradiction & contingency.
- b) If $A = \begin{bmatrix} 1 & 3 & 3 \\ 3 & 1 & 3 \\ 3 & 3 & 1 \end{bmatrix}$ prove that $A^2 - 5A$ is a scalar matrix.

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B.C.A (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
DESCRIPTIVE STATISTICS (Paper-II)

Day & Date: Tuesday, 31-01-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat diagrams and give equations whenever necessary.
 4) Use of logarithmic table and calculator is allowed.

Q.1 Choose the correct alternatives from the options.**08**

- 1) _____ is a classic example of primary data.
 - a) Population census
 - b) Central statistical organization report
 - c) Reserve Bank of India bulletin
 - d) National sample survey report
- 2) Sample is _____.
 - a) Subset of population
 - b) Part of Population
 - c) 5 % of population
 - d) at least 50% of population
- 3) The two regression lines intersect at _____.
 - a) (0,0)
 - b) (\bar{X}, \bar{Y})
 - c) (σ_x, σ_y)
 - d) none of these
- 4) The data of marks 35,45,55,40,47,50,56 of six students in Statistics will be called as _____.
 - a) an increasing series
 - b) an individual series
 - c) a decreasing series
 - d) a continuous series
- 5) A primary data is a data collected from _____.
 - a) Office records
 - b) Direct interviews
 - c) Bulletins
 - d) Annual reports
- 6) Which of the following is Positional average?
 - a) Arithmetic mean
 - b) Geometric mean
 - c) Harmonic mean
 - d) Median
- 7) Which one of the following relation between standard deviation (S.D) and variance $V(X)$ of a variable X is true?
 - a) $S.D = \sqrt{\text{Var}(X)}$
 - b) $(S.D)^2 = \text{Var}(X)$
 - c) $S.D = [\text{Var}(x)]^2$
 - d) None of these
- 8) If a constant value 10 is subtracted from each observation of a set the variance is _____.
 - a) increased by 100
 - b) decreased by 10
 - c) decreased by 100
 - d) not changed

- Q.2 Answer the following questions. (Any Four) 08**
- a) State merits and demerits of A.M
 - b) Define concept of statistical population with example.
 - c) Define concept of measures of dispersion.
 - d) Define continuous and discrete random variable with example.
 - e) Define absolute and relative measures of dispersion.
 - f) Find correlation between X and Y given $n = 5, \sum X = 75, \sum Y = 100, \sum XY = 325, \sum X^2 = 250, \sum Y^2 = 500$
- Q.3 Write short notes. (Any Two) 08**
- a) Explain the term Stratified random sampling with example.
 - b) Write objects of central tendency and criteria for good measures of central tendency.
 - c) Explain the term bivariate data with examples any two.
- Q.4 Answer of the following questions. (Any Two) 08**
- a) Define Correlation. its types with example.
 - b) Discuss the effect of change of origin and scale on Regression coefficient.
 - c) Define C.V and its merits and demerits.
- Q.5 Answer of the following questions. (Any One) 08**
- a) Explain term cummulative frequencies. Write construction of less and more ogive curvs.
 - b) Define Regression. Drive the expressions for regression line of X on Y.

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**B.C.A (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
Fundamentals of Electronics (Paper - I)**

Day & Date: Wednesday, 01-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw necessary diagrams whenever necessary.
4) Non Programmable calculators are allowed.

Q.1 Choose the correct alternatives from the options.

08

- 1) _____ material is used for infrared color LED.
 - a) GaAs
 - b) GaPs
 - c) Gas
 - d) GaAsP
- 2) SiO₂ is used as mask in _____ Process.
 - a) wafer
 - b) metallization
 - c) diffusion
 - d) photolithiographic
- 3) In epitaxial growth _____ material is used.
 - a) P
 - b) N
 - c) PN
 - d) NP
- 4) Bid type thermistor has 12.5 to _____ mm diameter.
 - a) 0.5
 - b) 0.10
 - c) 0.15
 - d) 0.20
- 5) Thickness of wafer in IC is _____ micrometer.
 - a) 2
 - b) 20
 - c) 200
 - d) 2000
- 6) _____ is used for insulation layer in IC.
 - a) SiO₂
 - b) CO₂
 - c) GeO₂
 - d) SiO
- 7) Thickness of LCD layer is _____ micrometer.
 - a) 10 to 20
 - b) 10 to 30
 - c) 10 to 40
 - d) 10 to 50
- 8) LCD uses _____ material.
 - a) IN₂O₂
 - b) IN₃O₂
 - c) IN₂O₃
 - d) INO₃

Q.2 Answer any four of the following.

08

- a) Write any four applications of LED.
- b) Define LCD?
- c) Define SMT and SMC.
- d) Define linear IC.
- e) Write application of IC.
- f) What is mean by wafer in IC.

- Q.3 Answer any two of the following. 08**
- a) Explain monolithic IC for diode.
 - b) Explain SMC and SMD.
 - c) Explain SMT and single layer PCB.
- Q.4 Answer any two of the following. 08**
- a) Explain the working of LCD.
 - b) Explain monolithic IC for transistor.
 - c) Explain Multilayer PCB.
- Q.5 Answer any one of the following. 08**
- a) Explain IC fabrication process in detail.
 - b) Explain Construction and working of seven segment LED Display.

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B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
Linear Electronics - II

Day & Date: Friday, 24-03-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat diagrams wherever necessary.
 4) Non programmable calculators are allowed.

Q.1 Choose the correct alternatives from the following.**08**

- 1) _____ is property of resistor.

a) Capacitance	b) Reactance
c) Resistance	d) Inductance
- 2) Paper capacitor is _____.

a) electrolyte	b) non electrolyte
c) insulator	d) conductor
- 3) In conductor VB and CB are _____.

a) far away	b) close
c) Separate	d) overlapped
- 4) _____ is used as dielectric in non electrolyte capacitors.

a) Glass	b) Aluminum
c) Gold	d) Silicon
- 5) In P type semiconductor _____ are majority carriers.

a) Protons	b) electrons
c) Holes	d) Charge
- 6) Diode becomes forward biased when anode is connected to _____.

a) positive	b) negative
c) supply	d) battery
- 7) Efficiency of Full wave rectifier is _____.

a) 81.6	b) 81.3
c) 81.5	d) 81.4
- 8) MOSFET has SiO₂ layer on _____ side.

a) drain	b) source
c) gate	d) Substrate

Q.2 Answer any four of the following**08**

- a) Define resistor.
- b) Define semiconductor.
- c) Draw diagram of n-type semiconductor.
- d) Define capacitance and write unit.
- e) Write a function of BJT terminals.
- f) Define power supply.

Q.3 Answer any two of the following.**08**

- a) Explain construction and Working of P-N-P transistor.
- b) Explain half wave rectifier.
- c) Explain carbon composition resistor.

Q.4 Answer any two of the following.

08

- a) Explain the construction potentiometer.
- b) Write a short note on p- types semiconductor.
- c) Define inductor. Explain its types.

Q.5 Answer any one of the following.

08

- a) Define power supply. Explain 3 pin IC regulator.
- b) Classify Materials on the basis of energy band diagram and explain n-type semiconductor.

- Q.3 Answer the following question. (Any one)** **10**
- a)** Write about the process of communication in detail.
 - b)** Write about the principles of effective communication.
- Q.4** Write a description about your memorable tour with your family members. **10**

- Q.3 Write short notes on any two of the following. 08**
- 1) Expansion slots
 - 2) OMR device
 - 3) Internet
- Q.4 Answer any Two of the following. 08**
- 1) Explain Magnetic tape with diagram.
 - 2) Explain mouse and its types.
 - 3) Explain block diagram of computer.
- Q.5 Answer any one of the following. 08**
- 1) What are the types of network? Explain in details.
 - 2) Explain generations of computer.

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**B.C.A. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2022
LOGIC DEVELOPMENT WITH 'C' PROGRAMMING (Paper – II)**

Day & Date: Wednesday, 25-01-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.
3) Use of logarithmic table and calculator is allowed.
4) Figures to the right indicate full marks.

Q.1 Choose the correct alternative from the following options.

08

- 1) Which is not a translator?

a) Assembler	b) Interpreter
c) Compiler	d) Linker
- 2) Which of the following is not a keyword of C?

a) register	b) void
c) main	d) goto
- 3) Which of the following 'C' expression is equivalent to the algebraic expression: $3x^2+3(4x+6)$

a) $3*x*x+3*(4x+6)$	b) $3*x*x+3(4x+6)$
c) $3*x*x+3(4*x+6)$	d) $3*x*x+3*(4*x+6)$
- 4) Find the output of the following program:


```
void main()
{
    printf("%d",32>>2);
}
```

a) 8	b) 30
c) 128	d) 64
- 5) _____ is true about nested if...else.

a) We can write if..else only inside if part
b) We can write if...else only inside else part
c) We can write if...else in both if and else part
d) We can write one if...else and after another if...else
- 6) Missing condition in for loop will generate _____.

a) Compiler error	b) Runtime error
c) Warning	d) Infinite loop
- 7) Which of the following are format specifiers in C?

i)%f ii) %c iii)%q iv)%z v)%u

a) i, ii, iv & v	b) ii, iii, iv & v
c) i, ii, v	d) i, ii, iii & v
- 8) _____ is used to access individual element of an array.

a) ()	b) []
c) {}	d) ->

- Q.2 Answer the following questions. (Any Four)** **08**
- a) What is flowchart? Which symbols are used in flowchart?
 - b) Write the structure of 'C' program.
 - c) Which data types are available in 'C'?
 - d) What is the use of 'typedef' ?
 - f) What is conditional operator?
 - g) Write a program to check the given number is even or odd.
- Q.3 Write short notes on any two of the following.** **08**
- a) Pseudo code
 - b) Type conversion
 - c) Escape sequence characters
- Q.4 Attempt any two of the following questions.** **08**
- a) Explain bitwise operators.
 - b) What is array? Explain types of array.
 - c) Draw the flowchart and write a program to print the factorial of given integer.
(Hint: if the given integer is 4 then the factorial will be $4*3*2*1 = 24$)
- Q.5 Attempt any one of the following questions.** **08**
- a) Explain different iterative statements in 'C'.
 - b) Draw the flowchart and write a program to print all the prime numbers between 1 and 100.

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B.C.A. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2022
BASICS OF WEB PROGRAMMING - I

Day & Date: Friday, 27-01-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternative from the following options. 08

- 1) CSS stands for _____.

a) Cascading style sheet	b) Color style sheet
c) Creative style sheet	d) Computer style sheet
- 2) Which of the tag is used to create table row in table

a) <td>	b) <tr>
c) <table>	d) <ts>
- 3) Which is singular tag _____.

a) <h1>	b) <p>
c) 	d) <o1>
- 4) HTML is a _____.

a) Programming language	b) Scripting language
c) Markup language	d) All of the above
- 5) If you want to merge two or more rows in a table which attribute you can use'?

a) rowmerge	b) rowspan
c) colmerge	d) colspan
- 6) How can you make a list that lists items with numbers?

a) OL	b) DL
c) UL	d) list
- 7) In what form the style rules represented.

a) Selector{property:value;}	b) Selector{value:property;}
c) Selector{property:value}	d) Selector{property=value:}
- 8) HTML5 documents may contain a _____ element. which is used to set the header section of a document.

a) Header	b) Footer
c) Section	d) None of above

Q.2 Answer the following questions. (Any Four) 08

- a) Explain singular and paired tags with example.
- b) Explain structure of HTML.
- c) Explain Requirement for internet.
- d) Explain need of HTML5.
- e) Explain any one media tag in HTML5.

Q.3 Write short notes. (Any Two) 08

- a) Explain any two input tag in HTML5 with example.
- b) Explain Use of CSS.
- c) Explain application of internet.

Q.4 Attempt any two of the following question.

08

- a) Explain following CSS properties.
 - 1) Opacity
 - 2) Table
- b) Write HTML code that shows image mapping.
- c) Explain graphics in HTML5.

Q.5 Attempt any one of the following questions.

08

- a) What is CSS? Explain the types of selectors.
- b) Explain 2D/3D transformations.

Seat No.	
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**B.C.A. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2022
SOFTWARE ENGINEERING - I (Paper – II)**

Day & Date: Saturday, 28-01-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternatives: 08

- 1) Which one of the following models is not suitable for accommodating any change?

a) Build & Fix Model	b) Prototyping Model
c) RAD Model	d) Waterfall Model
- 2) Which model can be selected if user is involved in all the phases of SDLC?

a) Waterfall Model	b) Prototyping Model
c) RAD Model	d) both a and b
- 3) Which of the feasibility is related to cost-benefit analysis aspects?

a) Economical	b) Technical
c) Operational	d) None of these
- 4) Weather forecasting is an example of _____ system.

a) Abstract	b) Deterministic
c) Closed	d) Probabilistic
- 5) Which one of the following is not a phase of Prototyping Model?

a) Quick Design	b) Coding
c) Prototype Refinement	d) Engineer Product
- 6) Problem identification is done during _____ phase.

a) System design	b) System analysis
c) System testing	d) All of the above
- 7) The inter-connections & interaction between the subsystems are called as _____.

a) Environment links	b) Connecting links
c) Interfaces	d) Control lines
- 8) The _____ is the element of system that involves in modifying the input.

a) Output	b) Interface
c) Processor	d) Control

Q.2 Answer any four of the following. 08

- a) What is system analysis?
- b) What are the various phases of SDLC?
- c) What is software engineering?
- d) How you can gather requirements?
- f) What is Natural and Man-made system?
- g) In software development process, what is the meaning of debugging?

Q.3 Write short notes on any two of the following: 08

- a) Elements of system.
- b) Open and closed system.
- c) RAD model.

Q.4 Answer any two of the following. **08**

- a) What is Feasibility study? Explain different feasibility studies in detail.
- b) What is System? What are the characteristics of system?
- c) Explain waterfall model of SDLC in details.

Q.5 Answer any one of the following. **08**

- a) Explain different fact finding techniques in detail.
- b) Who is System Analyst? Explain his/her different roles in SDLC.

Seat No.	
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B.C.A. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2022
BASICS OF MATHEMATICS – I (Paper – I)

Day & Date: Monday, 30-01-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Use of scientific calculator is allowed.

Q.1 Choose the correct alternative from the following options. 08

- 1) The order of product matrix $C = A \cdot B$ is _____.
 where $A = [a_{ij}]_{m \times n}$ and $B = [b_{ij}]_{n \times p}$
 - a) $m \times n$
 - b) $n \times m$
 - c) $m \times p$
 - d) $p \times m$
- 2) The set and its complement are _____.
 - a) never disjoint
 - b) always disjoint
 - c) always equal
 - d) None of these
- 3) If all the elements of matrix of relation R are 1 then relation R must be _____ relation.
 - a) universal
 - b) void
 - c) empty
 - d) ideal
- 4) The compound statement $p \leftrightarrow q$ is false if and only if _____.
 - a) both p and q are false
 - b) both p and q are true
 - c) one of p or q is false
 - d) None of these
- 5) A relation R defined on a set A is said to be _____ if R is reflexive, anti-symmetric and transitive.
 - a) partial ordering
 - b) equivalence
 - c) universal
 - d) trivial
- 6) A square matrix $A = [a_{ij}]_{n \times n}$ is said to be upper triangular matrix if _____.
 - a) $a_{ij} = 0$; for all $i < j$
 - b) $a_{ij} = 0$; for all $i \neq j$
 - c) $a_{ij} = 0$; for all $i > j$
 - d) $a_{ij} \neq 0$; for all $i > j$
- 7) $\sim(p \wedge q) \equiv$ _____.
 - a) $\sim p \wedge \sim q$
 - b) $\sim p \vee q$
 - c) $p \vee \sim q$
 - d) None of these
- 8) Let $A = \{x \mid x \text{ is an odd number divisible by } 2\}$ then cardinality of set A is _____.
 - a) infinity
 - b) \emptyset
 - c) 0
 - d) 2

Q.2 Answer the following questions. (Any Four) 08

- a) Draw digraph or relation
 $R = \{(a, a), (a, b), (b, b), (b, d), (b, a), (c, a), (c, d), (d, a), (d, c), (d, d)\}$ defined on set $A = \{a, b, c, d\}$.
- b) State DeMorgan's Laws in the set theory.
- c) Define tautology and contradiction.

- d) Define row matrix with suitable example.
- f) Define equivalence relation.
- g) Define complement of a set.

Q.3 Answer any two of the following.**08**

a) Let $A = \begin{bmatrix} -10 & 16 \\ 20 & -14 \end{bmatrix}_{2 \times 2}$ and $B = \begin{bmatrix} -6 & -14 \\ 0 & 7 \end{bmatrix}_{2 \times 2}$

Be the two matrices. Find the matrix $A + B$ and $A - B$.

- b) Prepare truth table for converse, inverse, contrapositive of the conditional statement $p \rightarrow q$.
- c) Let $A = \{1, 2, 3, 4, 5\}$. Let R be the relation defined on the set A by, xRy if and only if x divides y , $x, y \in A$. Write relation R . Write matrix of relation R . Also write in-degree and out-degree of every element in the set A .

Q.4 Answer any two of the following questions.**08**

- a) Let $A = \{a, b, c, d, e\}$, $B = \{b, c, d, f, g, h\}$ be the two sets. Find the sets $A \cup B$, $A \cap B$, $B - A$, $A \oplus B$. Also write their cardinalities.
- b) Check whether the following statement is logically equivalent or not.
 $(p \wedge q) \vee \sim(q \rightarrow p) \equiv \sim P$.
- c) Define transpose of a matrix and symmetric matrix with suitable example.

Q.5 Answer any one of the following questions.**08**

- a) Define transitive closure. Hence find transitive closure R^* of relation $R = \{(p, q), (p, s), (q, q), (q, r), (r, p), (r, q), (s, p), (s, q)\}$ defined on set $A = \{p, q, r, s\}$. Also draw digraph of transitive closure R^* .
- b) Test whether the following argument is valid or not.
 $\sim p \rightarrow q, \sim r, q \leftrightarrow r, \sim q \vee \sim P \vdash \sim(p \rightarrow \sim q)$

Q.2 Answer the following questions. (Any Four) 08

- a) State any two advantages of sampling method.
- b) The equation of line of regression Y on X is $5Y+3X=60$. Find regression coefficient Y on X.
- c) Define class frequency with illustration.
- d) Given $n = 10$, $\Sigma x = 25$, $\Sigma x^2 = 745$, find variance.
- f) Define correlation.
- g) The A.M. of observations 10, 15, x , 30, 50 is 26, find the value of x .

Q.3 Write short notes. 08

- a) Stratified Sampling Method
- b) Absolute & Relative measure of dispersion
- c) Positive & Negative Correlation

Q.4 Attempt any two of the following question. 08

- a) State any two merits & demerits of median.
- b) Find range θ it's coefficient from the following observations.
10, 12, 14, 18, 17, 21, 24, 6
- c) If $b_{xy} = 0.5$, $b_{yx} = 1.6$, $\bar{X} = 14$, $\bar{Y} = 10$
Estimate Y when $X=20$.

Q.5 Attempt any one of the following question. 08

- a) Draw Histogram to represent the following data & hence find mode.

Weight (in kg) :	40-45	45-50	50-55	55-60	60-65	65-70	70-75
No. of Students:	10	19	27	36	30	25	16
- b) Computer Karl Pearson's coefficient of correlation between X & Y. & hence comment on the result.

X	: 14	20	27	30	32
Y	: 19	27	36	30	25

Q.4 Attempt any two of the following question.

08

- a) Explain universal gate in details.
- b) Explain hexadecimal number system.
- c) What is multiplexer? Explain any two types of multiplexer.

Q.5 Attempt any one of the following questions.

08

- a) What is adder? Explain half adder and full adder in details.
- b) What is seven segment display? Explain segment decoder in details.

- Q.3 Write short notes. (Any Two)** **08**
- a) Write on Preparing for the Interview.
 - b) Formation of Attitude
 - c) Employers Expectations
- Q.4 Attempt any two of the following questions.** **08**
- a) Types of Interview
 - b) Types of Letters
 - c) Importance of Group discussion
- Q.5 Attempt any one of the following questions.** **08**
- a) Write short note on TCS
 - b) What is Resume? Write characteristics of a Good Resume.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
ENGLISH (Compulsory)
LITERARY VOYAGE

Day & Date: Tuesday, 07-02-2023
 Time: 12:00 PM To 03:00 PM

Max. Marks: 80

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

Q.1 A) Answer the following question by choosing correct option provided. 10

- 1) What is the honourable part of discourse?
 - a) To give opportunity
 - b) To Talk
 - c) To Listen
 - d) To Lead
- 2) Who regards the value of education as unquestionable?
 - a) Practical men
 - b) Educated men
 - c) Eminent men
 - d) Plutocrats
- 3) Whose cruelty is the ugliest in its ferocity?
 - a) Dictators
 - b) Racists
 - c) Conservatives
 - d) Cowards
- 4) What is described as septic daggers in the poem "Our Earth Will Not Die"?
 - a) Arsenic pollutants
 - b) Infected lakes
 - c) Infected rivers
 - d) Acid rain
- 5) What is the profession of the ideal man described in the poem?
 - a) Paster
 - b) Farmer
 - c) Cobbler
 - d) Teacher
- 6) What does the poet wish to hear from the lover in the poem "Remember"?
 - a) Marriage plans
 - b) His work
 - c) His family
 - d) Future plans
- 7) Identify the correct synonym from the given option. "Dark."
 - a) gloomy
 - b) ugly
 - c) dirty
 - d) None of the above
- 8) Fill in the blanks with the past tense forms of the verbs given within the brackets.
 "We _____(go) to Bhutan last year."
 - a) went
 - b) go
 - c) gone
 - d) None of the above
- 9) It is preferable that bullet points are _____.
 - a) Long sentences
 - b) Short phrases
 - c) Short paragraphs
 - d) None of the above

- 10) P.P.T. means _____.
- Power point presentation
 - Point power presentation
 - Presentation of power point
 - None of the above

B) Answer the following questions in one word/sentence. 06

- What is the main desire in a discourse?
- What are the common factors among men of eminence?
- What is the true sense of freedom?
- Who has lynched the lakes in the poem "Our Earth Will not Die?"
- What is the profession of the ideal man described in the poem?
- Who is the poet addressing to in the poem "Remember?"

Q.2 Answer the following questions in brief. (Any Eight) 16

- What is the relation between wit and discourse?
- What is the meaning of discretion of speech?
- What is the relation between education and virtue?
- What kind of people can achieve the true essence of freedom?
- What are the various effects of forcing people in an inelastic system and holding them fixed?
- What are the various images used by the poet to deliver his message in the poem "Our Earth Will Not Die?"
- Describe the theme of the poem "ode on solitude."
- Explain the true love of poet in the poem "Remember."
- Write down the process of bread making in the factory.
- What are the five part of power point presentation?
- Prepare a 5 minutes presentation of yourself for introduce in an interview.
- Explain the importance of soft skill, "Interpersonal intelligence."

Q.3 A) Write down the answers in briefly. (Any Two) 10

- Describe the Reaching process to college from home.
- Define the concept power point presentation & its use.
- Explain the difference between formal letter and informal letter.

B) Prepare a presentation on your favorite musician. 06

Q.4 A) Answer the following questions. (Any Two) 08

- Read the following advertisement and write a job application letter.
 "Indian Model School, Solapur
 Requires Teacher
 Educational qualification: B.A. B.ed
 Experience – min 1 year in teaching
 Interested candidates send CV and application at
Indiamodelschool@gmail.com
- Write down the job application letter for the post of "Assistant professor" in Lokmanya Tilak Vidyalaya, Sangola.
- Write down the describing process of cake. How to make cake within 15 minutes.

B) Prepare a presentation on your favorite cricketer. 08

Q.5 Answer the following questions. (Any Two)

- a)** State three (for each) such situations from your personal life when you have felt the following
- 1) Mad
 - 2) Sad
 - 3) Glad
- b)** Write down the process of making sugar in factory in your own language.
- c)** Write down the process of reaching vegetable market in your city from your home.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
ADVANCED PROGRAMMING IN C

Day & Date: Wednesday, 08-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternative from the following options. 08

- 1) Any C program _____.
 - a) Must contain at least one function
 - b) Need not contain any function
 - c) Needs input data
 - d) None of the above
- 2) What is #include <stdio.h>?
 - a) Preprocessor directive
 - b) Inclusion directive
 - c) File inclusion directive
 - d) None of the mentioned
- 3) Which of the following uses structure?
 - a) Array of structures
 - b) Linked Lists
 - c) Binary Tree
 - d) All of the mentioned
- 4) The size of a union is determined by the size of the _____.
 - a) First member in the union
 - b) Last member in the union
 - c) Biggest member in the union
 - d) Sum of the sizes of all members
- 5) Which of the following are themselves a collection of different data types?
 - a) String
 - b) Structures
 - c) Char
 - d) All of the mentioned
- 6) How many number of pointer (*) does C have against a pointer variable declaration?
 - a) 7
 - b) 127
 - c) 255
 - d) No limits
- 7) Stdout, stdin and stderr are _____.
 - a) File pointers
 - b) File descriptors
 - c) Streams
 - d) Structure
- 8) Comment on the following pointer declaration.
int *ptr, p;
 - a) ptr is a pointer to integer, p is not
 - b) ptr and p, both are pointers to integer
 - c) ptr is a pointer to integer, p may or may not be
 - d) ptr and p both are not pointers to integer

- Q.2 Answer the following questions. (Any Four) 08**
- a) What is union? With syntax.
 - b) Write the syntax of function Declaration.
 - c) Explain printf() and scanf.
 - d) Explain register storage class.
 - f) How to initialization pointer.
- Q.3 Write short notes on any two of the following. 08**
- a) Explain File opening modes in c.
 - b) Explain pointer of pointer with example.
 - c) Write a program that checks entered number is palindrome or not using function with argument without return value.
- Q.4 Attempt any two of the following question. 08**
- a) Write a difference between structure and union.
 - b) Write a program in C copy the content of one file in to another file.
 - c) What Preprocessor? Explain list of Preprocessor directives.
- Q.5 Attempt any one of the following question. 08**
- a) Write a program to print student details using structure (take attributes rollno, name, sub[5],calculate total, per)
 - b) What is function? Explain types of function depending on its signature.

Q.4 Attempt any two of the following question.**08**

- a) Consider the following example. Implement FCFS scheduling algorithm.

Process	Brust-Time
P1	8
P2	6
P3	3

- i) Draw the Gantt chart.
ii) Calculate the average waiting time.
iii) Calculate the average turnaround time.
- b) What is scheduling? Explain the scheduling criteria's.
c) Explain the components of operating system.

Q.5 Attempt any one of the following question.**08**

- a) What is operating system? Explain the types of operating system.
b) Explain the services provided by OS.

- Q.4 Attempt any two of the following question. 08**
- a) Differentiate between Client-side scripting & server-side Scripting.
 - b) Explain decision making Statements in JavaScript.
 - c) Explain Event Handling in JavaScript with example.
- Q.5 Attempt any one of the following question. 08**
- a) Explain jQuery Selectors with suitable example.
 - b) What are the effects methods used in jQuery?

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
OFFICE AUTOMATION

Day & Date: Saturday, 11-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Multiple Choice Question.

08

- 1) Which Word feature allows you to see the keyboard shortcuts to access commands from the Keyboard?
 - a) ToolTips
 - b) ScreenTips
 - c) Keyboard Shortcuts
 - d) Key Tips
- 2) The Wrap Text command in excel is used to _____.
 - a) To Place the content of a cell among the multiple cell
 - b) To Make the content of a cell centrally aligned
 - c) To make the lengthy content of a cell appear in multiple lines inside the same cell
 - d) To make the content of a cell bold
- 3) The save As ... dialog box can be used _____.
 - a) To save file by some alternative Name
 - b) To save file format other than word
 - c) For saving the file for first time
 - d) All the Above
- 4) Which character indicates start of formula in Ms-Excel?
 - a) %
 - b) =
 - c) !
 - d) \$
- 5) You can enlarge or shrink your document, using which feature of word Interface?
 - a) Zoom Controls
 - b) Mini Toolbar
 - c) Dialog Box Launchers
 - d) None of the Above
- 6) Word wrap means _____.
 - a) Aligning text with the right margin
 - b) Inserting spaces between words
 - c) Moving text automatically to the next line
 - d) None of the above
- 7) What is the shortcut key for "change case" the selected text?
 - a) Ctrl+F
 - b) Ctrl+Shift+C
 - c) Shift +F3
 - d) None of these
- 8) Which of the following is Page Orientation?
 - a) Landscape
 - b) Portrait
 - c) Both a & b
 - d) None of the above

- Q.2 Answer the following questions. (Any Four) 08**
- a) Explain the terms Hardware & Software.
 - b) Explain desktop Icon & its functions.
 - c) What is Recycle Bin?
 - d) What is Spread sheet?
 - e) What is Undo & Redo?
 - f) What is Splitting & Merging?
- Q.3 Write short on Any Two of the following. 08**
- a) Explain applications of computer.
 - b) Explain the steps to insert clip Art in word.
 - c) How to Convert files to different formats?
- Q.4 Attempt any two of the following question. 08**
- a) Explain steps for adding any one Graphics to the Presentation.
 - b) Explain the following terms:
 - 1) Database
 - 2) Table
 - 3) Form
 - 4) Reports
 - c) Explain different types of breaks in Ms-Word.
- Q.5 Attempt any one of the following question. 08**
- a) Explain steps for creating Table in Ms-word.
 - b) What is Computer? Explain characteristics of computer in detail.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov - 2022
BASIC OF MATHMATICS – II

Day & Date: Monday, 13-02-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

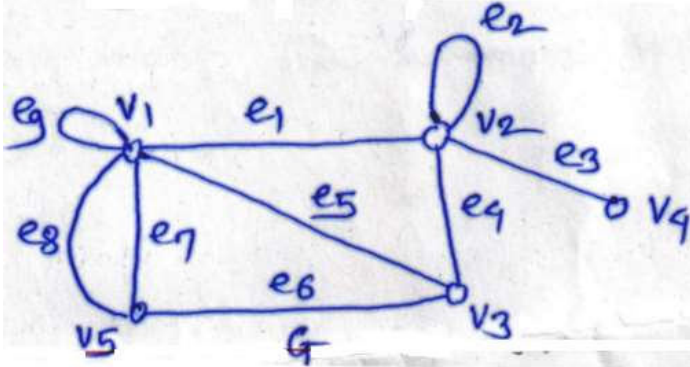
Instructions : 1) All questions are compulsory.
 2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative from the following options. 08

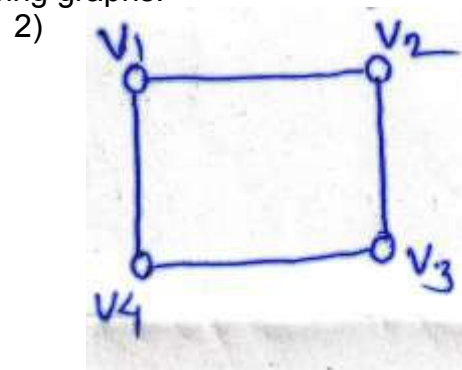
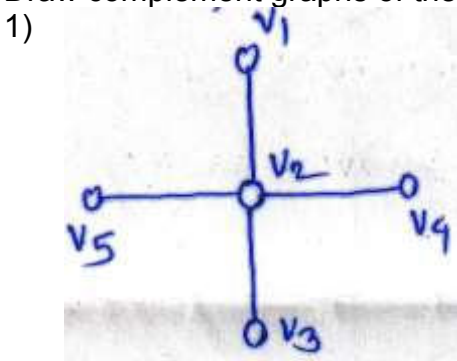
- 1) In the adjacency matrix of graph G, if all the diagonal elements are zero and all the non-diagonal elements are one the graph G is _____ graph.
 - a) pseudo
 - b) multi
 - c) bipartite
 - d) None of these
- 2) A walk in which _____ is repeated is called as path.
 - a) edge
 - b) vertex
 - c) no edge
 - d) no vertex
- 3) If a simple graph G has 5 vertices and 6 edges then its complement graph \bar{G} has _____ number of vertices and _____ number of edges respectively.
 - a) 6 and 5
 - b) 5 and 6
 - c) 5 and 4
 - d) 6 and 4
- 4) In a tree having 'n' number of vertices, there exists exactly _____ path between every pair of vertices.
 - a) at least one
 - b) n - 1
 - c) unique
 - d) n
- 5) Kruskal's algorithm is used to find _____.
 - a) Hamiltonian circuit
 - b) Shortest spanning tree
 - c) Eulerian circuit
 - d) Chinese postman problem's solution
- 6) If a graph G is a multi-graph then the graph $G \oplus G$ i.e. ringsum of graph G with itself is _____ graph.
 - a) multi
 - b) simple
 - c) null
 - d) none of these
- 7) Travelling salesman problem is a particular case of _____ graph.
 - a) Hamiltonian
 - b) Eulerian
 - c) Fleury's
 - d) Plane
- 8) A null graph having 5 vertices is _____ regular graph.
 - a) 5
 - b) 4
 - c) 0
 - d) 1

Q.2 Answer the following questions. (Any Four)

- a) Define tree with suitable example.
- b) Define Eulerian trail and Hamiltonian path.
- c) From the following graph G , draw the graph $G - v_3$ and $G - \{e_1, e_5, e_6\}$



- d) Draw the graph K_4 and N_4 .
- e) Define bipartite graph with suitable example.
- f) Draw complement graphs of the following graphs.

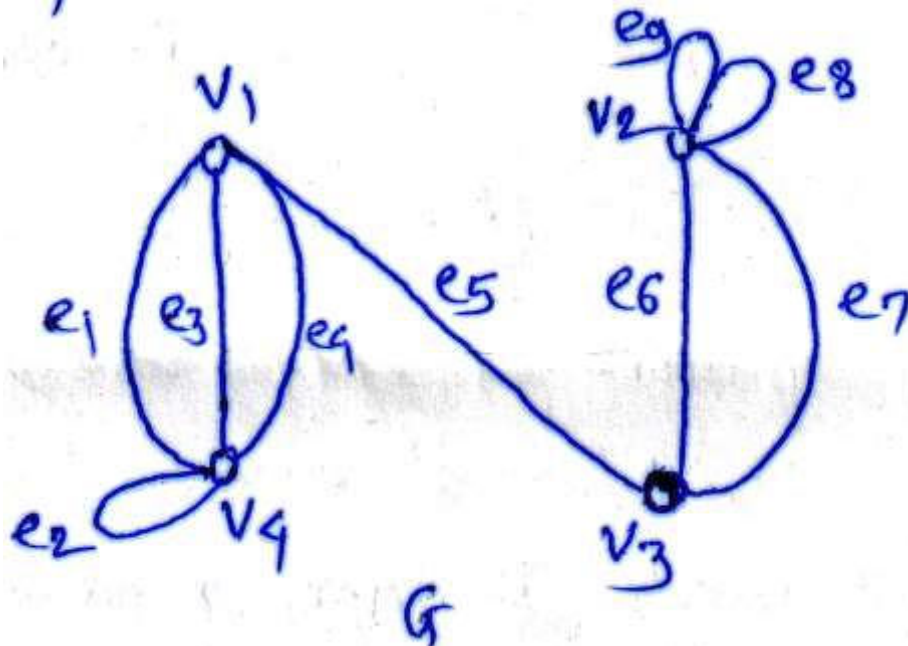


Q.3 Answer any two of the following questions.

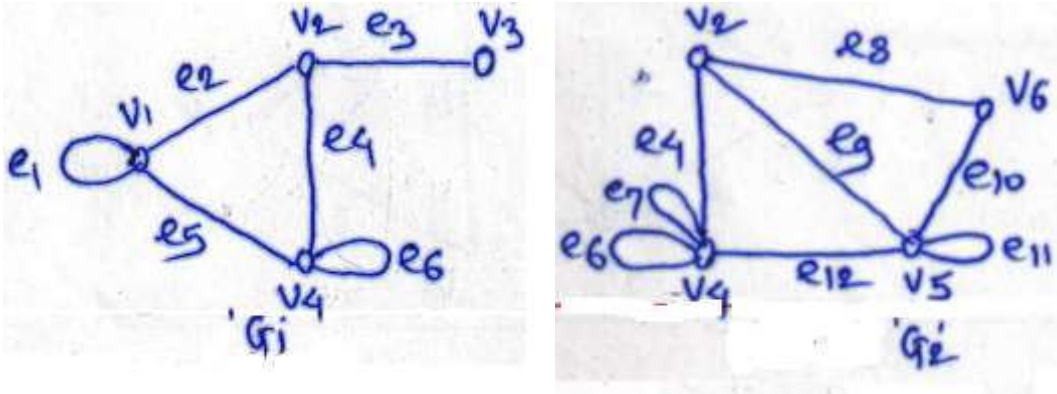
- a) Write a note on Travelling Salesman Problem.
- b) State and prove shaking hand lemma.
- c) Write Kruskal's algorithm to find shortest spanning tree.

Q.4 Attempt any two of the following question.

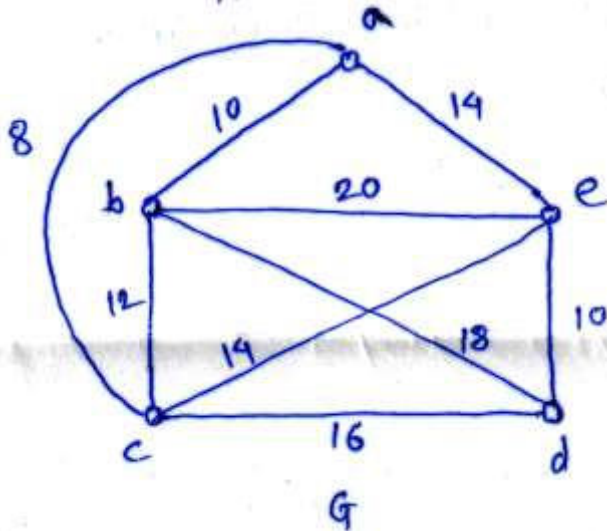
- a) Write adjacency matrix and incidence matrix for the following graph.



b) From the following graphs, draw the graphs $G_1 \cap G_2$ and $G_1 \oplus G_2$



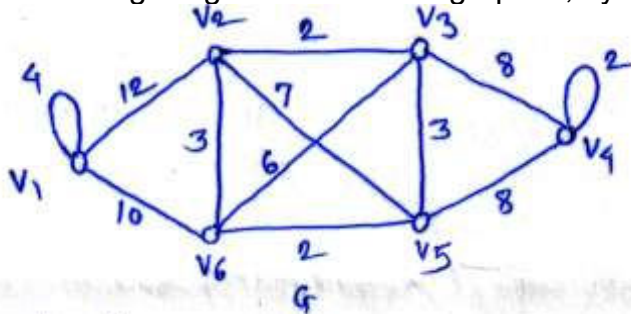
c) Solve the following Travelling Salesman Problem with head quarter at vertex a.



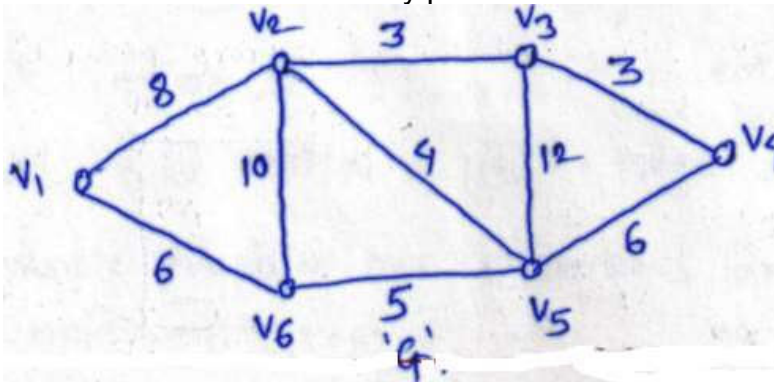
Q.5 Attempt any one of the following questions.

08

a) Define shortest spanning tree. Hence find shortest spanning tree and its weight for the following weighted connected graph G, by using Kruskal's algorithm.



b) Define Hamiltonian graph. Solve following Chinese Postman Problem and find total distance traveled by postman.



Q.2 Answer the following questions. (Any Four) 08

- a) Define permutation.
- b) Define mathematical definition of probability.
- c) Define probability mass function of discrete random variable.
- d) State mean & variance of Geometric distribution.
- e) If a continuous r.v. x having pdf, $f(x) = 3x^2; 0 < x < 1$ then find it's mean.
- f) If $X \sim U(5,7)$ then find the value of $E(x)$

Q.3 Write short notes. (Any Two) 08

- a) Principles of Counting
- b) Properties of Normal Distribution
- c) Conditional Probability

Q.4 Attempt any two of the following question. 08

- a) State addition and multiplication law of probability.
- b) If $X \sim B(n = 7, p = 0.3)$ then find.
 - 1) pmf of x
 - 2) $p(x = 3)$
- c) Verify whether following function is p.m.f. or not

$$p(x) = \begin{cases} \frac{1}{5} & ; x = 0,1,2,3,4 \\ 0 & ; \text{otherwise} \end{cases}$$

Q.5 Attempt any one of the following questions. 08

- a) State axioms of probability.
If \bar{A} is complement of an event A then prove that, $P(A) + P(\bar{A}) = 1$
- b) Define – Sample space.
If two dice are rolled simultaneously then write down the sample space & hence find probability of -
 - 1) Getting 6 on at least one die
 - 2) Getting sum of numbers on upper face is 9

Seat No.	
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B. C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
Introduction to Microprocessor

Day & Date: Wednesday, 15-02-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Multiple choice questions. 08

- 1) The circuits in the 8085A that provide the arithmetic and logic functions are called the:
 - a) CPU
 - b) ALU
 - c) I/O
 - d) None of these
- 2) Which, of the following is the 16bit register in 8085 processor?
 - a) Stack Pointer
 - b) Program Counter
 - c) Both A & B
 - d) None of these
- 3) It determines the number of operations per second.
 - a) Clock speed
 - b) Bandwidth
 - c) Word Length
 - d) None of these
- 4) An 8-bit microprocessor can process _____ data at a time.
 - a) 4 bit
 - b) 8 bit
 - c) 16 bit
 - d) All of these
- 5) Microprocessor understands a set of instructions called _____.
 - a) Program
 - b) Code
 - c) Instruction Set
 - d) All of these
- 6) Word length is depend on.
 - a) Internal bus width
 - b) Register
 - c) ALU
 - d) All of these
- 7) BIU Stands for
 - a) Bus Interface Unit
 - b) Bus Instruction Unit
 - c) Bus Internal Unit
 - d) None of these
- 8) The pin configuration of 8086 is available in the _____.
 - a) 40 pin
 - b) 50 pin
 - c) 30 pin
 - d) None of these

Q.2 Answer any four of the following. 08

- 1) Define microprocessor.
- 2) What is address bus?
- 3) What is data bus?
- 4) What are the limitations of 8 bit microprocessor?
- 5) What is T state?

Q.3 Write short notes on any two of the following 08

- 1) What are the applications of microprocessor?
- 2) What is instruction set?
- 3) What is Machine Cycle and Instruction Cycle?

Q.4 Answer any Two of the following**08**

- 1) What is interfacing in microprocessor?
- 2) Explain the concept of I/O mapping.
- 3) Explain the type of 8 bit microprocessor.

Q.5 Answer any one of the following**08**

- 1) Explain in detail internal architecture of 8085 microprocessor.
- 2) Explain pin function of 8085 microprocessor with diagram.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
Software Engineering – II

Day & Date: Thursday, 16-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Multiple Choice questions. 08

- 1) _____ refers to the collection of information pertinent to systems project.

a) Data gathering	b) Data Exporting
c) Data Embedding	d) Data importing
- 2) A physical DFD
 - a) has no means of showing material flow
 - b) does not concern itself with material flow
 - c) can show only stored material
 - d) can show the flow of material
- 3) A data flow can
 - a) only enter a data store
 - b) only leave a data store
 - c) enter or leave data store
 - d) either enter or leave a data store but not both
- 4) White box testing, a software testing technique is sometimes called?

a) Graph testing	b) Basic path
c) Glass box testing	d) Data flow
- 5) Which one of the following is NOT desired in a good software requirement specifications (SRS) document?

a) Non-Functional requirement	b) Goals of Implementation
c) Functional requirement	d) Algorithms for software
- 6) System testing is a

a) Black box testing	b) Grey box testing
c) White box testing	d) Both a and b
- 7) Test cases are designed during which of the following stages?

a) test recording	b) test configuration
c) test planning	d) test specification
- 8) Which of the following is not a test type?

a) Database Testing	b) Security Testing
c) Statement Testing	d) Functional Testing

Q.2 Answer the following questions. (Any Four) 08

- a) Define Decision Tree.
- b) What is Software Testing?
- c) Explain the Incremental approach.
- d) What are the guidelines for drawing DFD?
- f) What are CASE tools?
- g) What is structured design?

- Q.3 Write short notes. (Any Two)** **08**
- a) What is white box testing in detail?
 - b) Difference between System Analysis & System Design.
 - c) Design any 3 input screens for 'Library System'.
- Q.4 Attempt any two of the following question.** **08**
- a) What is flowchart? Explain symbols in detail.
 - b) What is Normalization? Explain upto 3 NF.
 - c) What is Black box testing in detail?
- Q.5 Attempt any one of the following questions.** **08**
- a) Draw first level DFD of Payroll System.
 - b) What is Decision table? Explain its types with example.

- Q.3 Write short notes (Any Two)** **08**
- a) What is the benefit of inline function in a C++ program? Give example.
 - b) How we can define member function inside and outside the class?
 - c) Which are the access specifiers used in C++? Explain with example
- Q.4 Attempt any two of the following questions.** **08**
- a) Differentiate between POP and OOP.
 - b) How we can pass object as a parameter to function? Give an example.
 - c) Explain type casting in C++ with examples.
- Q.5 Attempt any one of the following question.** **08**
- a) Define constructor. Explain types of constructor with example.
 - b) What is an operator overloading? Write a program to overload an unary operator.

Seat No.	
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B.C.A. (Semester – III) (New) (CBCS) Examination: Oct/Nov - 2022
Data Structures using 4.0 'C' – I

Day & Date: Wednesday, 22-02-2023
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

Q.1 Fill in the blanks by choosing correct alternatives given below. 08

- 1) Pick out the non-linear data structure
 - a) Array
 - b) Queue
 - c) Stack
 - d) None of these
- 2) The queue follow
 - a) LIFO
 - b) FIFO
 - c) LILO
 - d) None of above
- 3) In linked lists there are no NULL links in:
 - a) Single linked list
 - b) Linear doubly linked list
 - c) Circular linked list
 - d) None of the above
- 4) Which of these is a postfix expression?
 - a) a+b-c
 - b) +ab
 - c) abc*+de-+
 - d) a*b(c+d)
- 5) Which of the following is not the part of ADT description?
 - a) Data
 - b) Operations
 - c) Both of the above
 - d) None of the above
- 6) Process of removing an element from an empty stack is
 - a) removing
 - b) underflow
 - c) deleting
 - d) overflow
- 7) How is an array initialized in C language?
 - a) `int a[3] = {1,2,3};`
 - b) `int a = {1,2,3};`
 - c) `int a[] = new int[3];`
 - d) `int a(3) = [1,2,3];`
- 8) Which of the following data structures allow insertion and deletion from both ends?
 - a) stack
 - b) Deque
 - c) Queue
 - d) String

Q.2 Attempt any four of the following question 08

- a) Define the term a) time complexity b) space complexity
- b) Explain the role of a stack in recursion.
- c) What is priority queue?
- d) Differentiate between stack and queue
- e) Convert infix expression to postfix expression: $(A+B) * (C+D)$
- f) Define data structure.

- Q.3 Write short notes any two** **08**
- a) Divide and conquer algorithm
 - b) Differentiate between array and linked list
 - c) Types of queue
- Q.4 Attempt any two of the following questions.** **08**
- a) Define Algorithm. Explain characteristics of algorithm.
 - b) Explain ADT for stack.
 - c) Which operation we can perform on queue?
- Q.5 Answer any one of the following questions.** **08**
- a) What is stack? Write a program to implement stack using array.
 - b) Explain types of linked list? Write a program to implement singly linked list and perform the following operation on linked list.
 - a) insert at beginning
 - b) insert at end

Seat No.	
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B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov - 2022
Database Management System

Day & Date: Thursday, 23-02-2023
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

Q.1 Choose the correct alternatives from the options. 08

- 1) The _____ operation allows the combining of two relations by merging pairs of tuples, one from each relation, into a single tuple.
 - a) Select
 - b) Join
 - c) Union
 - d) Intersection
- 2) A schedule is _____ if it is conflict equivalent to a serial schedule.
 - a) Conflict serializable
 - b) Conflicting
 - c) Non serializable
 - d) None of the mentioned
- 3) In timestamp ordering protocol, suppose that the transaction T_i issues write (Q) and $TS(T_i) < W\text{-timestamp}(Q)$, then _____.
 - a) Read operation is executed
 - b) Read operation is rejected
 - c) Write operation is executed
 - d) Write operation is rejected
- 4) An entity in A is associated with at most one entity in B, and an entity in B associated with at most one entity in A) this is called as _____.
 - a) One-to-many
 - b) One-to-one
 - c) Many-to-many
 - d) Many-to-one
- 5) Which of the following can be a multivalued attribute?
 - a) Phone_number
 - b) Name
 - c) Date_of_birth
 - d) All of the mentioned
- 6) In the relational modes, cardinality is termed as _____.
 - a) Number of tuples
 - b) Number of attributes
 - c) Number of tables
 - d) Number of constraints
- 7) Shadow paging has
 - a) no redo
 - b) no undo
 - c) redo but no undo
 - d) neither redo or undo
- 8) The term attribute refers to a _____ of a table.
 - a) Record
 - b) Tuple
 - c) Column
 - d) Key

Q.2 Attempt any four of the following question. 08

- a) List of database users.
- b) Draw the state diagram of a transaction.
- c) Define the term: i) Tuple ii) Domain
- d) What is shadow based recovery?
- e) What is serializability?
- f) What are the advantages of DBMS?

- Q.3 Write short notes (any two) 08**
- a) Explain 2-tier and 3-tier architecture.
 - b) What is Transaction? Explain ACID properties with example.
 - c) What is data replication? Explain types of data replication.
- Q.4 Answer any two of the following questions. 08**
- a) Explain three problems of concurrency control with example.
 - b) Explain lock-based protocols and timestamp based protocol.
 - c) Explain Generalization, Specialization, and Aggregation.
- Q.5 Answer the following questions. (any one) 08**
- a) What is Distributed Database? Explain types of distributed system.
 - b) What is Join in DBMS? Explain types of Join with example.

Seat No.	
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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2022
Software Testing & Quality Assurance**

Day & Date: Friday, 24-02-2023
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagrams and give equations wherever necessary.

Q.1 Choose the correct alternatives from the options.

08

- 1) Which of the following term describes testing?
 - a) Finding broken code
 - b) Evaluating deliverable to find errors
 - c) A stage of all projects
 - d) None of the mentioned
- 2) White Box techniques are also classified as _____.
 - a) Design based testing
 - b) Structural testing
 - c) Error guessing technique
 - d) None of the mentioned
- 3) Which of the following is/are White box technique?
 - a) Statement Testing
 - b) Decision Testing
 - c) Condition Coverage
 - d) All of the mentioned
- 4) What are the various Testing Levels?
 - a) Unit Testing
 - b) System Testing
 - c) Integration Testing
 - d) All of the mentioned
- 5) Alpha testing is done at _____.
 - a) Developer's end
 - b) User's end
 - c) Developer's & User's end
 - d) None of the mentioned
- 6) Testing done without planning and Documentation is called _____.
 - a) Unit testing
 - b) Regression testing
 - c) Adhoc testing
 - d) None of the mentioned
- 7) Software mistakes during coding are known as _____.
 - a) Errors
 - b) Failures
 - c) Bugs
 - d) defects
- 8) Inspections and testing are what kinds of Quality Costs?
 - a) Prevention
 - b) Internal Failure
 - c) External Failure
 - d) Appraisal

Q.2 Attempt any four of the following question.

08

- a) Why testing is required?
- b) What are the phases of testing?
- c) What is use of performance testing?
- d) What are the advantages of WBT?
- f) What is test case template?
- g) When we can start testing?

- Q.3 Write short notes. (Any Two)** **08**
- a) Stress testing
 - b) Boundary value analysis
 - c) Loop testing
- Q.4 Attempt any two of the following question.** **08**
- a) Alpha and beta testing.
 - b) Explain smoke testing
 - c) What is review process? Explain.
- Q.5 Attempt any one of the following question.** **08**
- a) Explain the defect life cycle in detail.
 - b) Create review report for Gmail login account.

Seat
No.

B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2022
Web Development using PHP

Day & Date: Saturday, 25-02-2023
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

Q.1 Multiple Choice Questions.**08**

- 1) What does PHP stand for?

i) Personal Home Page	ii) Hypertext Preprocessor
iii) Pretext Hypertext Processor	iv) Preprocessor Home Page
a) Both i) and iii)	b) Both ii) and iv)
c) Only ii)	d) Both i) and ii)
- 2) PHP files have a default file extension of _____.

a) .html	b) .xml
c) .php	d) .ph
- 3) Which version of PHP introduced Try/catch Exception?

a) PHP 4	b) PHP 5
c) PHP 6	d) PHP 5 and later
- 4) Which of the following PHP statement/statements will store 111 in variable num?

i) int\$num=111	ii) int mum =111
iii) \$num=111	iv) 111=\$num
a) Both i) and ii)	b) i), ii), iii) and iv)
c) Only iii)	d) Only i)
- 5) What will be the output of the following PHP code?


```
<?php
$num=1;
$num 1=2;
print$num."+". $num 1;
?>
```

a) 3	b) 1+2
c) 1.+2	d) Error
- 6) What will be the output of the following PHP code?


```
<?php
$num="1";
$num 1="2";
print$num+$num 1;
?>
```

a) 3	b) 1+2
c) Error	d) 12
- 7) Which of the conditional statements is/are supported by PHP?

i) if statements	ii) if-else statements
iii) if-elseif statements	iv) switch statements
a) Only i)	b) i), ii) and iv)
c) ii), iii) and iv)	d) i), ii), iii) and iv)

- 8) Which of the looping statements is/are supported by PHP?
- | | |
|--------------------------|---------------------|
| i) for loop | ii) while loop |
| iii) do-while loop | iv) for each loop |
| a) i) and ii) | b) i), ii) and iii) |
| c) i), ii), iii) and iv) | d) Only iv) |

Q.2 Attempt any four of the following question. 08

- a) What is basic syntax of PHP?
- b) Require () function.
- c) History of MYSQL.
- d) List out different functions used for comparing string with example.
- f) MYSQL data types.
- g) History of PHP.

Q.3 Write short notes. (Any Two) 08

- a) Explain different operators used in PHP.
- b) What is function? Types of function.
- c) What is cookie?

Q.4 Attempt any two of the following question. 08

- a) What is validation?
- b) Explain different parameter passing technique used in PHP with example.
- c) Explain Global variable in PHP.

Q.5 Attempt any one of the following question. 08

- a) Design web page which insert, delete and update records.
- b) Explain MySQL Architecture in detail.

Seat No.	
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B.C.A. (Semester – III) (New) (CBCS) Examination: Oct/Nov-2022
Computer Networks - I

Day & Date: Monday, 27-02-2023
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagrams wherever necessary

Q.1 Multiple choice questions

08

- 1) which network topology requires a central controller or hub?
 - a) Star
 - b) Mesh
 - c) Ring
 - d) Bus
- 2) _____ is the multiplexing technique that shifts each signal to a different carrier frequency.
 - a) TDM
 - b) FDM
 - c) Both FDM & TDM
 - d) PDM
- 3) Communication channel is shared by all the machines on the network in
 - a) broadcast network
 - b) unicast network
 - c) multicast network
 - d) anycast network
- 4) The number of layers in ISO OSI reference model is _____.
 - a) 4
 - b) 5
 - c) 6
 - d) 7
- 5) The required resources for communication between end systems are reserved for the duration of the session between end systems in _____ switching method.
 - a) Packet
 - b) Line
 - c) Circuit
 - d) Frequency
- 6) Header of a frame generally contains _____.
 - a) synchronization bytes
 - b) addresses
 - c) frame identifier
 - d) all of the mentioned
- 7) Which of the following is the multiple access protocol for channel access control?
 - a) CSMA/CD
 - b) CSMA/CA
 - c) Both CSMA/CD & CSMA/CA
 - d) HDLC
- 8) A _____ is the physical path over which a message travels.
 - a) Path
 - b) Medium
 - c) Protocol
 - d) Route

Q.2 Answer any four of the following.

08

- a) Bridge
- b) Attenuation
- c) Serial transmission

- d) Networking Uses
- e) Single Bit Error
- f) ALOHA

Q.3 Write short notes on any two of the following. 08

- a) Data communication model
- b) Guided media
- c) TDM

Q.4 Answer any Two of the following. 08

- a) Write a note on Applications of Internet
- b) What is Pulse Code Modulation? Draw and explain the Encoding technique for it.
- c) Explain the Simplex and Stop & Wait protocols.

Q.5 Answer any one of the following. 08

- a) Draw and explain the TCP/IP reference model
- b) Explain the CRC error Control technique with example.

Seat No.	
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B.C.A. (Semester – III) (New) (CBCS) Examination: Oct/Nov-2022
Financial Accounting with Tally

Day & Date: Tuesday, 28-02-2023
Time: 09:00 AM To 12:00 PM

Max. Marks: 80

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.
3) Figures to right indicate full marks.
4) Use of log table and calculators is allowed.

Q.1 Answer the following question by choosing the correct option.

10

- 1) A _____ is an intangible.

a) Goodwill	b) Stock
c) Building	d) Cash
- 2) _____ Is the list of all ledger balances?

a) Balance sheet	b) Trial balance
c) Trading Account	d) Profit and Loss
- 3) Wages paid for installation of machinery should be debited to _____ Account.

a) Machinery	b) Wages
c) Trading	d) Profit and Loss
- 4) Prepaid expenses are shown on the _____ Side of the balance sheet.

a) Assets	b) Liability
c) Debit	d) credit
- 5) Trading account is prepaid on the basis of _____ Expenses.

a) Indirect	b) Direct
c) Revenue	d) Other
- 6) Income and Expenditure account is a _____.

a) Capital account	b) Real account
c) Personal account	d) Nominal account
- 7) Gradual and permanent decrease in the value of assets is known as _____.

a) Discount	b) Interest
c) Depreciation	d) Installment
- 8) _____ is an explanation of the journal entries passed.

a) Invoice	b) Voucher
c) Transaction	d) Narration
- 9) The journal is called a book of _____ Entry.

a) Original	b) Ledger
c) Real	d) Profit
- 10) Closing stock is valued at cost price or market price whichever is _____.

a) More	b) Less
c) Excess	d) God

- B) Solve the following. 06**
- 1) Define Voucher.
 - 2) What is meant by Account?
 - 3) What is meant by Drawings?
 - 4) What is meant by Bad debts?
 - 5) TDS stands for.
 - 6) Define goodwill.

- Q.2 Solve any Eight of the following. 16**
- 1) Define Book-Keeping.
 - 2) Explain Golden Rules of Account.
 - 3) What do you mean by Double Entry system of Book-Keeping?
 - 4) Define Depreciation.
 - 5) Types of Subsidiary Books.
 - 6) BRS Stands for.
 - 7) Drawings.
 - 8) Debit Note.
 - 9) Types of Voucher.
 - 10) Methods of Depreciation.

- Q.3 A) Attempt any Two of the following. 10**
- 1) What is double Entry system? Explain its merits and de-merits.
 - 2) Define Account and Explain its Types.
 - 3) Explain need and importance of depreciation.

- B) Accounting Concepts. 06**

- Q.4 A) Attempt any Two of the following. 08**
- 1) Subsidiary Books.
 - 2) Explain Trade discount and Cash discount.
 - 3) Difference between book-keeping and accountancy.

- B) XYZ limited purchase machinery of Rs. 50000 on 01/04/2007 company 08**
decided to charge depreciation @10% per annum using original cost
method (SLM) company close its book of account on 31st March every
year.
Shows Machinery Account for Three Year.

- Q.5 Attempt any Two of the following. 16**
- a) Bank Reconciliation Statement.
 - b) TDS in Tally.
 - c) How to create new company in Tally.

Seat No.	
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B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov - 2022
OOPS WITH C++ - II

Day & Date: Tuesday, 21-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions :**
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Draw neat diagrams and give equations wherever necessary.
 - 4) Use of logarithmic table and calculator is allowed.
- (At. Wts.: H=1, C=12, O=16, N= 14, Na =23, Cl = 35.5)

Q.1 Choose the correct alternative from the following options.

08

- 1) When the inheritance is private, the private methods in base class are _____ in the derived class.

a) Inaccessible	b) Accessible
c) Protected	d) Public
- 2) Inheritance allow in C++ Program?

a) Class Re-usability	b) Creating a hierarchy of classes
c) Extendibility	d) All of the above
- 3) If base class has constructor with arguments, then it is _____ for the derived class to have constructor and pass the arguments to base class constructor.

a) Optional	b) Mandatory
c) Compiler dependent	d) Error
- 4) A virtual function that has no definition within the base class is called _____.

a) Pure virtual function	b) Pure static function
c) Pure Const function	d) Friend function
- 5) Bv default, all the files in C++ are opened in _____ mode.

a) Text	b) Binary
c) ISCI	d) VTC
- 6) Which of the following is the default mode of the opening using the of stream class?

a) ios::in	b) ios::out
c) ios::app	d) ios::trunk
- 7) Which keyword is used to handle the expection?

a) Try	b) Throw
c) Catch	d) None of the above
- 8) Which keyword can be used in template?

a) class	b) typename
c) both class & typename	d) function

- Q.2 Answer the following questions. (Any Four) 08**
- a) What are the advantages of inheritance?
 - b) What is Base class?
 - c) Which header file is used for reading and writing to a file?
 - d) Which mode is used to open a file in binary mode?
 - e) How Exception handling is implemented in the C++ program?
 - f) What is the difference between error and exception?
- Q.3 Write short notes. (Any Two) 08**
- a) Command line Argument
 - b) Pointer to base class
 - c) Custom Exception
- Q.4 Attempt any two of the following question. 08**
- a) Explain virtual base class with suitable example.
 - b) Explain the following formatted member functions of 'ios' class.
width(), precision().
 - c) Explain 'Hierarchical inheritance' with one example.
- Q.5 Attempt any one of the following questions. 08**
- a) What is Templates in C++? Explain Types of Templates in C++ with example.
 - b) Write a C++ program which copies contents of one file to another.

Seat No.	
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B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov - 2022
Data Structures using 'C' - 4.0 II

Day & Date: Wednesday, 22-02-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat diagrams and give equations wherever necessary.

Q.1 Choose the correct alternative from the following options. 08

- 1) The number of edges from the node to the deepest leaf is called _____ of the tree.

a) Height	b) Depth
c) Length	d) Width
- 2) Which of the following sorting algorithms is the fastest?

a) Merge sort	b) Quick sort
c) Insertion sort	d) Shell sort
- 3) Which of the following statements for a simple graph is correct?
 - a) Every path is a trail
 - b) Every trail is a path
 - c) Every trail is a path as well as every path is a trail
 - d) None of the mentioned
- 4) What is a full binary tree?
 - a) Each node has exactly zero or two children
 - b) Each node has exactly two children
 - c) All the leaves are at the same level
 - d) Each node has exactly one or two children
- 5) Why is Shell sort called as a generalization of Insertion sort?
 - a) Shell sort allows an exchange of far items whereas insertion sort moves elements by one position
 - b) Improved lower bound analysis
 - c) Insertion is more efficient than any other algorithms
 - d) Shell sort performs internal sorting
- 6) The Data structure used in standard implementation of Breadth First Search is?

a) Stack	b) Queue
c) Linked list	d) Tree
- 7) Which of the following is a disadvantage of linear search?
 - a) Requires more space
 - b) Greater time complexities compared to other searching algorithms
 - c) Not easy to understand
 - d) Not easy to implement
- 8) Which of the following is not an exchange sort?

a) Bubble Sort	b) Quick Sort
c) Partition-exchange Sort	d) Insertion Sort

- Q.2 Answer the following questions. (Any Four) 08**
- a) What is a binary search tree?
 - b) Define Graph.
 - c) What is meant by Sorting? Why sorting is necessary?
 - d) Write any 4 applications of graph.
 - f) What is an AVL tree?
 - g) What is searching? Mention its types.
- Q.3 Write short notes. 08**
- a) Hashing & Hash function
 - b) Dijkstra's shortest path algorithm
 - c) Bubble Sort
- Q.4 Attempt any two of the following questions. 08**
- a) Explain different tree traversal methods.
 - b) Write a program to implement Binary Search.
 - c) Explain types of Binary Tree.
- Q.5 Attempt any one of the following questions. 08**
- a) Write an algorithm for searching an element in a binary search tree.
 - b) Explain Quick Sort with example.

Seat No.	
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B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov - 2022
MySQL

Day & Date: Thursday, 23-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternative from the following options.

08

- 1) DCL is used to _____.
 - a) Manage the changes made by DML statements
 - b) Control access to data stored in a database
 - c) Inserting, Deleting and Updating data
 - d) None of the above
- 2) Storing the same data in many places is called _____.
 - a) Iteration
 - b) Concurrency
 - c) Redundancy
 - d) Enumeration
- 3) Which of the following is used to delete an entire MYSQL database?
 - a) drop database dbname
 - b) drop entiredb dbname
 - c) drop db dbname
 - d) drop dbase dbname
- 4) Insert into instructor values (10211, 'Smith', 'Biology', 66000); What type of statement is this?
 - a) Query
 - b) DML
 - c) Relational
 - d) DDL
- 5) Which join refers to join records from the write table that have no matching key in the left table are include in the result set?
 - a) Left outer join
 - b) Full outer join
 - c) Right outer join
 - d) Half outer join
- 6) _____ command is used to enter data into the created table.
 - a) SELECT
 - b) LOAD
 - c) INSERT
 - d) UPDATE
- 7) Create table employee (name varchar, id integer) What type of statement is this?
 - a) DML
 - b) View
 - c) Integrity constraint
 - d) DDL
- 8) The "father" of MySQL is _____.
 - a) Michael Widenius
 - b) Bill Joy
 - c) Bill Gates
 - d) Stephanie Wall

Q.2 Answer any four of the following.

08

- a) Write a syntax of Create table command.
- b) How to set auto increments in MySQL?
- c) Explain any 4 aggregate functions.
- d) List out DDL commands.
- e) List out DML Commands.
- f) Explain Primary Key Constraint.

- Q.3 Write short notes on any two of the following.** **08**
- a) Explain any 4 Constraints with examples.
 - b) Explain MySQL Clauses.
 - c) Explain View with its uses.
- Q.4 Answer any two of the following.** **08**
- a) Explain set operations with example.
 - b) Explain subquery with example.
 - c) Explain cursors with types.
- Q.5 Answer any one of the following.** **08**
- a) Explain Join with its types with examples.
 - b) Explain Stored Procedure its types of parameters with example.

- Q.3 Write short notes on any two of the following. 08**
- a) Password Sniffing
 - b) Security Aspects
 - c) Penetration Testing
- Q.4 Answer any two of the following. 08**
- a) Explain the FUS Triangle.
 - b) What is phishing?
 - c) What is Newsgroup Spam?
- Q.5 Answer any one of the following. 08**
- a) What is security attacks? Explain the types of security attacks.
 - b) What is Foot Printing? What is Objective of Foot Printing?

- Q.2 Write short notes on any two of the following. 08**
- a) What are the uses of controllers in AngularJS?
 - b) What is routing in AngularJS?
 - c) Define Ng-repeat Directive.
 - d) List out the components of filters
 - e) Define Ng-bind Directive.
 - f) List the features of Angular JS.
- Q.3 Write short notes on any two of the following. 08**
- a) Write short notes on ng-disabled and ng-show Directive
 - b) Write a note on AngularJS Expressions.
 - c) Write short notes on AngularJS Modules.
- Q.4 Answer any Two of the following. 08**
- a) What is Controller? Explain Attaching properties and functions to scope.
 - b) Write a Sample "hello world" program using Angular JS.
 - c) What is SPA in AngularJS? Explain Pros and Cons of SPA.
- Q.5 Answer any one of the following. 08**
- a) What is scope? Explain Scope Lifecycle in details.
 - b) Write a program to create a Single Page Application in AngularJS.

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B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2022
Advance 4.0 d Computer Networks

Day & Date: Monday, 27-02-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat diagrams and give equations wherever necessary.

Q.1 Choose the correct alternative from the following options. 08

- 1) What are the common protocols associated with the network layer?
 - a) Address Resolution Protocol
 - b) Reverse Address Resolution Protocol
 - c) Internet protocol
 - d) Neighbour Discovery Protocol
- 2) Which of the following routing algorithms can be used for network layer design?
 - a) shortest path algorithm
 - b) distance vector routing
 - c) link state routing
 - d) all of the mentioned
- 3) Which one of the following algorithm is not used for congestion control?
 - a) traffic aware routing
 - b) admission control
 - c) load shedding
 - d) routing information protocol
- 4) Which layer is responsible for process to process delivery in a general network model?
 - a) network layer
 - b) transport layer
 - c) session layer
 - d) data link layer
- 5) An encryption technique with 2 keys is _____.
 - a) Monoalphabetic Cipher
 - b) Cryptography
 - c) Private key cryptography
 - d) Public key cryptography
- 6) The process of verifying the identity of a user _____.
 - a) Authentication
 - b) Identification
 - c) Validation
 - d) Verification
- 7) A digital signature is _____.
 - a) a bit string giving identity of a correspondent
 - b) a unique identification of a sender
 - c) an authentication of an electronic record by trying it uniquely to a key only a sender knows
 - d) an encrypted signature of sender
- 8) Which of the following methods is used to broadcast two packets on the medium at a time?
 - a) Collision
 - b) Synchronous
 - c) Asynchronous
 - d) None of the above

- Q.2 Answer the following questions. (Any Four) 08**
- a) Write full form of RARP, SMTP.
 - b) Define Optimality Principle.
 - c) What is Buffering?
 - d) What is Congestion?
 - e) What is Cryptography?
 - f) What is Broadcast Routing, Multicast Routing.
- Q.3 Write short notes. (Any Two) 08**
- a) Link State routing
 - b) Web Security
 - c) Elements of Transport Protocols
- Q.4 Attempt any two of the following question. 08**
- a) Explain Network layer Design issues.
 - b) Explain Domain Name System in detail.
 - c) Define Network security. Explain the network security techniques.
- Q.5 Attempt any one of the following questions. 08**
- a) Explain the different Congestion prevention policies.
 - b) Explain TCP/IP & UDP in detail.

Seat No.	
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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2022
Python Programming**

Day & Date: Tuesday, 28-02-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 80

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

Q.1 a) Choose correct alternative from the following. 10

- 1) Who developed Python Programming Language?
 - a) Wick van Rossum
 - b) Rasmus Lerdorf
 - c) Guido van Rossum
 - d) Niene Stom
- 2) Which type of Programming does Python support?
 - a) object-oriented programming
 - b) structured programming
 - c) functional programming
 - d) all of the mentioned
- 3) Which of the following is the correct extension of the Python file?
 - a) .python
 - b) .pl
 - c) .py
 - d) .p
- 4) All keywords in Python are in _____.
 - a) Capitalized
 - b) lower case
 - c) UPPER CASE
 - d) None of the mentioned
- 5) What will be the value of the following Python expression'?
4 + 3 % 5
 - a) 7
 - b) 2
 - c) 4
 - d) 1
- 6) Which of the following is used to define a block of code in Python language?
 - a) Indentation
 - b) Key
 - c) Brackets
 - d) All of the mentioned
- 7) Which of the following character is used to give single-line comments in Python?
 - a) //
 - b) #
 - c) !
 - d) /*
- 8) What will be the output of the following Python code?


```
i = 1
while True:
    if i%3 = 0:
        break
    print(i)
    i += 1
```

 - a) 1 2 3
 - b) error
 - c) 1 2
 - d) none of the mentioned

- 9) What is the order of precedence in python?
 - a) Exponential, Parentheses, Multiplication, Division, Addition, Subtraction
 - b) Exponential, Parentheses, Division, Multiplication, Addition, Subtraction
 - c) Parentheses, Exponential, Multiplication, Division, Subtraction, Addition
 - d) Parentheses, Exponential, Multiplication, Division, Addition, Subtraction
- 10) Which of the following is the truncation division operator in Python?

a)	b) //
c) /	d) %

b) Fill in the blank.

06

- 1) Python supports the creation of anonymous functions at runtime, using a construct called _____ .
- 2) Multi lined comment can be given inside _____ quotes.
- 3) How many except statements can a try-except block have _____.
- 4) _____ will be the output of the following Python code snippet?

```
for i in[1,2,3,4][::-1]:
print(i)
```
- 5) _____ represents an entity in the real world with its identity and behavior.
- 6) _____ is used to create an object.

Q.2 Solve any Eight of the following.

16

- 1) What is collection?
- 2) What is GUI?
- 3) Explain Global and local variable.
- 4) Define anonymous function.
- 5) Define dictionary with syntax.
- 6) What is Exception?
- 7) Write various mode of file.
- 8) What is the use of PVM?
- 9) Explain variable with syntax.
- 10) How to Select an Element from a List?

Q.3 a) Attempt any Two of the following.

10

- 1) Write a program to check given number is Armstrong or not.
- 2) What is String and explain any live methods of string with example.
- 3) Explain the features of python.

b) Write a Short note on manipulating of dictionaries.

06

Q.4 a) Attempt any Two of the following.

08

- 1) Write a program to insert employee information such eid, ename, salary, etc into employee Table.
- 2) Define module. Explain the importing module with example.
- 3) Write a program to check given number is prime or not.

b) What is exception? Explain types of exception.

08

Q.5 Attempt any Two of the following.

- a) Write a program to draw the following shapes on canvas:
 - i) circle
 - ii) square
 - iii) rectangle
 - iv) line
- b) What is String and explain any five methods of string with example.
- c) Explain regular expression with example.

Seat No.	
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Set P

**B.C.A. (Semester – V) (New) (CBCS) Examination: Oct/Nov-2022
ENGLISH (Business English)**

Day & Date: Friday, 27-01-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Answer the following question by choosing the correct option. 08

- 1) What did Jim sell to buy a gift for Della?
 - a) Wedding ring
 - b) Leather shoes
 - c) His heirloom watch
 - d) Car
- 2) What was Phatik's deepest desire?
 - a) To belong and be loved
 - b) To be a ringleader
 - c) To be a boatsman
 - d) To become a teacher.
- 3) William Wordsworth was born on _____.
 - a) 17th April 1970
 - b) 17th April 1770
 - c) 17th April 1870
 - d) None of the above
- 4) Who snatched the Queen's mirror in the poem the Queen's Rival?
 - a) Her daughter
 - b) The new bride
 - c) The King
 - d) None of the above
- 5) How did the pupils view the schoolmaster in the poem "The Village Schoolmaster"?
 - a) Silly and slow
 - b) Soft and essay
 - c) Sad and shrewd
 - d) Severe and stern
- 6) Where did the two roads diverge in the poem "The Road Not Taken"?
 - a) On the brown road
 - b) In the yellow wood
 - c) On the grey road
 - d) On the green road
- 7) Rajan broke the window (Change into the passive voice)
 - a) The window was broken by Rajan
 - b) The window was broke by Rajan
 - c) Rajan was broken the window
 - d) None of the above
- 8) Someone _____ my social media account and posted some objectionable content.
 - a) Back up
 - b) Hack into
 - c) Boot up
 - d) Log in

Q.2 Answer the following question in brief (Any Four) 12

- a) Discuss the relationship of Jim and Della.
- b) Why did Phatik's mother readily agree to the uncle's offer?
- c) What is the main theme of the poem 'The Solitary Reaper'?
- d) What does Queen Gulnar desire in the poem the Queen's Rival?
- e) Describe the character of village schoolmaster.
- f) What is the significance of the two roads in the poem "The Road Not Taken"?

Q.3 Answer the following question. (Any One) 10

a) Explain the concept "21st Century skills."

OR

b) Explain the following skills with suitable examples 'Leadership', Creativity and collaboration in community.

Q.4 Answer the following questions. (Any One) 10

a) Define the skill "Learning Skill" with example.

OR

b) Explain Life Skills and its importance.

Seat No.	
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**B.C.A. (Semester – V) (New) (CBCS) Examination: Oct/Nov-2022
CORE JAVA**

Day & Date: Saturday, 28-01-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

Q.1 Choose correct alternatives.

16

- 1) What is the original name of Java Programming language?
 - a) J++
 - b) C++
 - c) OAK
 - d) TEAK
- 2) What does JVM stands for?
 - a) Java Variable Machine
 - b) Java Virtual Machine
 - c) Java Virtual Mechanism
 - d) None of the above
- 3) Name of a Class, Variable, Method or an Interface in Java language is called?
 - a) Argument
 - b) Value
 - c) Identifier
 - d) None of the above
- 4) Choose the wrong statement about Java programming?
 - a) Java supports unsigned integers
 - b) Java supports signed integers
 - c) Java supports signed char
 - d) None of the above
- 5) Which among the following is not a Data Type in Java?
 - a) short
 - b) int
 - c) long double
 - d) byte
- 6) What is a Narrowing Type Conversion in Java?
 - a) Conversion of data from lower data type to higher data type
 - b) Conversion data from a higher data type to a lower data type
 - c) Conversion of data from any data type to any data type
 - d) None of the above
- 7) A SWITCH case statement in Java is a _____ control statement.
 - a) Iteration
 - b) Loop
 - c) Selection
 - d) Jump
- 8) What is the default value of boolean data type elements of an array in Java?
 - a) true
 - b) False
 - c) 1
 - d) 0
- 9) Which is the super class in Java that bundles all classes to deal with exceptions and errors?
 - a) Error
 - b) Exception
 - c) Throwable
 - d) Throw

- 10) _____ is the process of converting a primitive data to its equivalent Wrapper class type.
 - a) unboxing
 - b) boxing
 - c) type casting
 - d) All of these
- 11) Choose a correct statement about Java Interfaces?
 - a) Interface contains only abstract methods by default.
 - b) A Java class can implement multiple interfaces
 - c) An Interface can extend or inherit another Interface.
 - d) All the above
- 12) When a class extends the Thread class, it should override _____ method of Thread class to start that thread.
 - a) start()
 - b) run()
 - c) init()
 - d) go()
- 13) Which of these method is used to handle a keyboard event listener?
 - a) keyListener()
 - b) addListener()
 - c) addKeyListener()
 - d) eventKeyListener()
- 14) Which of these class is super class of all the events?
 - a) EventObject
 - b) EventClass
 - c) ActionEvent
 - d) ItemEvent
- 15) Which of the following is not a valid statement in JDBC?
 - a) Statement
 - b) PreparedStatement
 - c) QueryStatement
 - d) CallableStatement
- 16) The _____ object provides you with methods to access data from the table.
 - a) ResultSet
 - b) Parametrized
 - c) TableStatement
 - d) Condition

Q.2 Answer the following questions. (Any Eight)

16

- a) What is JDK?
- b) What is Event Delegation?
- c) Define Thread Life cycle?
- d) What is JRE?
- e) What is enum?
- f) What is recursion?
- g) What is package?
- h) What is API?
- i) What is Exception?
- j) Difference between AWT and swing.

Q.3 A) Answer the following questions. (Any Two)

10

- 1) Explain Data types with example.
- 2) Explain Simple java program Structure.
- 3) Write a program to check given number is prime or not.

B) Short note. Layout Manager.

06

Q.4 A) Answer the following questions. (Any Two)

08

- 1) What is Inheritance? Explain types of inheritance with example.
- 2) Explain JDBC Drivers with its example and merits and demerits.
- 3) Write a GUI program to handle mouse event.

B) What is swing? Explain any Eight swing components with example. **08**

Q.5 Answer the following questions. (Any Two) **16**

- a)** Explain serialization and de-serialization with suitable example.
- b)** Explain exception handling in java.
- c)** Explain Different type of JDBC Statements with example.

Seat No.	
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Set	P
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BCA. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2022
VISUAL PROGRAMMING

Day & Date: Monday, 30-01-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Neat diagrams must be drawn wherever necessary.

Q.1 A) Choose the correct alternatives from the options. 10

- 1) The .NET Framework Class Library (FCL) is also known as _____.
 - a) Base Class Library (BCL)
 - b) Common Class Library (CCL)
 - c) Global Class Library (GCL)
 - d) Public Class Library (PCL)

- 2) The _____ namespace includes classes and interfaces that define the various collections of objects such as lists, queues, hash tables, arrays, etc.
 - a) system. Collection b) system
 - c) system. Data d) system. Drawing

- 3) What is the correct syntax to declare a variable in C#?
 - a) typevariable Name = value;
 - b) typevariable Name;
 - c) variable Name as type = value;
 - d) Both a and b

- 4) What will be the output of the following C# code?
using System;
namespace MyApplication
{
class Program
{
 static void Main(string[] args)
 {
 double x = 10.25;
 Console. Write(Convert.ToInt32(x));
 }
}
}
 - a) 10.30 b) 10.25
 - c) 10 d) Error

- 5) _____ class of ADO.Net is used to execute stored procedure.
 - a) Connection b) Command
 - c) DataReader d) DataTable

- Q.3 A) Answer the followings (Any two):** **10**
- 1) Write short note on CheckBox and RadioButton control.
 - 2) Write a program where one class implements two interface.
 - 3) Explain console I/O stream with example.
- B) Explain following controls with example.** **06**
- 1) ColorDialog
 - 2) RichTextBox
 - 3) DateTimePicker
- Q.4 A) Answer the followings (Any two):** **08**
- 1) What is method overriding? Explain with suitable example.
 - 2) Differentiate Pass by value and Pass by reference using suitable example.
 - 3) What is array? Write a program to find the maximum array elements from 10 elements.
- B) What is ADO.Net? Explain Connection and Command object with example.** **08**
- Q.5 Answer the following (Any Two).** **16**
- a) Write a program to implementation of Hashtable.
 - b) What is inheritance? Explain multilevel inheritance with example.
 - c) Write a program to copy the contents of one file into another file.

Seat No.	
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**B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2022
COMPUTER GRAPHICS**

Day & Date: Tuesday, 31-01-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:**
- 1) All questions are compulsory.
 - 2) Draw neat labelled diagrams wherever necessary.
 - 3) Figures to right indicate full marks.
 - 4) Use of log table and calculators is allowed.

Q.1 A) Multiple choice questions.

10

- 1) Which of the following plane is used for 2D transformations?
 - a) Three-dimensional plane
 - b) Two-dimensional plane
 - c) One-dimensional plane
 - d) Four-dimensional Plane
- 2) Which of the following is a Computer Graphics Curve?
 - a) Bezier Curves
 - b) Implicit Curves
 - c) Explicit Curves
 - d) All of the above
- 3) Which of the following is the purpose for using clipping in computer graphics?
 - a) copying
 - b) zooming
 - c) adding graphics
 - d) removing objects and lines
- 4) The raster scan display systems that have 24 bits/pixel and a 1024×1024 screen resolution require a frame buffer size of:
 - a) 24 MegaBytes
 - b) 8 MegaBytes
 - c) 3 MegaBytes
 - d) 1 MegaByte
- 5) Curves in computer graphics is primarily used for which of the following function?
 - a) To draw different types of objects onto the screen
 - b) Zooming out a picture
 - c) Copying a picture
 - d) Zooming in a picture
- 6) In a graphical system, an array of pixels in the picture are stored in which of the following locations?
 - a) Frame buffer
 - b) Processor
 - c) Memory
 - d) All of the mentioned
- 7) Which of the following devices provides positional information to the graphics system?
 - a) Pointing devices
 - b) Both Input devices and Pointing devices
 - c) Output devices
 - d) Input devices
- 8) Which of the following is used in graphics workstations as input devices to accept voice commands?
 - a) Speech recognizers
 - b) Touch panels
 - c) None of the mentioned
 - d) All of the mentioned

- 9) Which of the following is defined as the process of elimination of parts of a scene outside a window or a viewport?
- a) Editing
 - b) Cutting
 - c) Plucking
 - d) Clipping
- 10) Which of the following operations can be used to zoom in or out around any axis on a three- dimensional object from its original position?
- a) Rotation
 - b) Shearing
 - c) Scaling
 - d) Translation

B) Fill in the blank.**06**

- 1) _____ is commonly known as frame buffer on a black and white system with one bit per pixel?
- 2) _____ is a correct abbreviation of DDA algorithm.
- 3) _____ algorithm can be used to clip a polygon in 3D space?
- 4) _____ is the line path on the polygon area for a 45% line.
- 5) In graphical system, the array of pixels in the picture are stored in _____.
- 6) _____ is a technique that is used to approximate the halftones without the reduction of spatial resolution.

Q.2 Solve any Eight of the following.**16**

- 1) Enlist types and subtypes of parallel projection.
- 2) List out graphical input devices.
- 3) Explain the LCD Panels.
- 4) List out polygon filling algorithms.
- 5) Explain the Plasma panel display.
- 6) List out application areas of computer graphics.
- 7) What do you mean by sharing?
- 8) Explain hard copy raster devices.
- 9) What are the different types of polygon?
- 10) Explain the graphical output devices.

Q.3 A) Attempt any Two of the following.**10**

- 1) Rotate a triangle defined by A(0,0),B(6,0),C(3,3) by 90° about origin in Anticlockwise direction.
- 2) What are the merits and demerits of DDA line drawing algorithm?
- 3) What is inside outside test?

B) Short note on.**06**

- 1) Plotters
- 2) DDA Algorithm

Q.4 A) Attempt any Two of the following.**08**

- 1) Explain the types of 3-D projections.
- 2) Explain cohen-sutherland line clipping algorithm.
- 3) Explain in detail polygon Edge fill algorithm.

B) Describe the following.**08**

- 1) Describe the solid area filling algorithm.
- 2) Explain the ordered edge list algorithm.

Q.5 Attempt any Two of the following.

- a) Explain in detail Random Scan Display and Raster Scan Display.
- b) Explain the steps in Bresenham's circle drawing algorithm with example.
- c) Translate the square ABCD whose co-ordinates are A (0,0), B (3,0), C(3,3) and D(0,3) by 2-units in both directions and then scale it By 1.5 units in x-direction and 0.5 units in y-direction.

- 9) What was Hadoop written in?
 - a) Java (software platform)
 - b) Perl
 - c) Java (programming language)
 - d) Lua (programming language)
- 10) Cloud computing is an abstraction based on the notion of pooling physical resources and presenting them as a _____resource.
 - a) real
 - b) virtual
 - c) cloud
 - d) none of the mentioned

Q.1 B) Fill in the Blanks. 06

- 1) _____ is one of the key data science skills.
- 2) Machine learning is an application of _____.
- 3) _____ license is Hadoop distributed under.
- 4) _____ characteristic of big data is relatively more concerned to data science.
- 5) _____ is the father of cloud computing.
- 6) _____ step is performed by data scientist after acquiring the data.

Q.2 Answer the followings (Any Eight): 16

- 1) What do you mean by Features in Machine learning?
- 2) What is Machine Learning?
- 3) What is Cloud Computing?
- 4) What is data science?
- 5) Define IOT.
- 6) Define Cloud cube model.
- 7) What is Green IT?
- 8) Attribute of Big Data.
- 9) What is Server Virtualization?
- 10) What are Green IT Standards and Eco-Labeling.

Q.3 A) Answer the followings (Any two): 10

- 1) Explain in details the role of a Data Scientist.
- 2) Discuss in brief about Cloud economics and benefits.
- 3) Write the notes on Statistical modeling and Probabilistic distribution in data science.

B) What is Machine Learning? Describe Training versus Testing in details.

Q.4 A) Answer the followings (Any two): 08

- 1) Write comparative notes on Hadoop vs Traditional systems.
- 2) What is Big Data and where it is produced?
- 3) What are the Core Components of Hadoop?

B) Explain in details the architecture of IOT and applications of IOT. 08

Q.5 Answer the following (Any Two).

- a) What are the Predictive and descriptive tasks in machine learning?
- b) What are the Environmental impacts of IT and explain the Holistic Approach to Greening IT.
- c) What do you mean by virtualization? Explain in details about Virtualization technologies and architectures.

Seat No.	
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B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2022
Linux and Shell Programming

Day & Date: Friday, 24-03-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagrams and give equations wherever necessary.

Q.1 A) Multiple choice questions.

10

- 1) Which combination of keys is used to exit from terminal?
 - a) Ctrl + t
 - b) Ctrl + z
 - c) Ctrl + d
 - d) Ctrl + e
- 2) Which command reads user input from the terminal and assign this value to a variable name?
 - a) read
 - b) Get
 - c) declare
 - d) Set
- 3) Which command is used to list all the files in your current directory (including hidden)?
 - a) ls-l
 - b) ls-t
 - c) ls-a
 - d) ls-i
- 4) How many links are created when we create a directory file?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
- 5) Which command is used to view compressed text file contents?
 - a) cat
 - b) type
 - c) zcat
 - d) print
- 6) What does the following command do?
\$ vi file001
 - a) open file named file001
 - b) edit file named file001
 - c) delete a file named file001
 - d) open file if it exists else creates a new file
- 7) Which option of the kill command sends the given signal name to the specified process?
 - a) -l
 - b) -n
 - c) -a
 - d) -s
- 8) Which command is used to set terminal I/O characteristics?
 - a) tty
 - b) stty
 - c) ctty
 - d) pty
- 9) Which variable contains last background job process id?
 - a) \$!
 - b) \$?
 - c) \$\$
 - d) \$0
- 10) Octal representation of rw- - w- rw - permission are _____.
 - a) 644
 - b) 646
 - c) 626
 - d) 654

B) Fill in the blanks. 06

- 1) _____ symbol matches all character in file name.
- 2) The _____ command removes text from the Work Buffer.
- 3) LDAP stands for _____.
- 4) _____ command is used for printing a file.
- 5) _____ is a superuser.
- 6) _____ command is used to change the permissions of a file.

Q.2 Solve any Eight of the following. 16

- a) List the functions of Kernel.
- b) What is the purpose of boot block?
- c) Give the advantages of shell scripts.
- d) Give the advantages of vi editor.
- e) What are the importance of /bin directory?
- f) Explain cat command.
- g) Explain chgrp and chown command.
- h) Explain kill and join command.
- i) Explain mounting command.
- j) Explain printing files.

Q.3 A) Attempt any Two of the following. 10

- 1) Write note on X-window.
- 2) Differentiate between Linux and Windows.
- 3) What is pipes? Give the Example and use of pipes command.

B) Write down role of system administrator. 06**Q.4 A) Attempt any Two of the following. 08**

- 1) Give command to Add user, Add group and delete user, delete group in Linux.
- 2) What does DHCP stand for? Explain how it works.
- 3) Write a program to display given number is Armstrong or not.

B) Explain 'ls' commands with different option. 08**Q.5 Attempt any Two of the following. 16**

- a) Write Menu driven Program to confirm Entered no. is odd / Even, also find factorial of no.
- b) Explain in detail different modes of vi editor.
- c) What is Redirection? Explain its types.

Q.3 Answer any one of the following questions. 10

a) Define the 21st Century Skills “Literacy Skills”.

OR

b) How can technology literacy skills help learners in the future?

Q.4 Answer any one of the following questions. 10

a) Define Initiative in your own words. Give an example of a situation in which you took initiative.

OR

b) Explain the 21st century skill “Media Literacy” and “Technology Literacy”.

Seat No.	
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**B.C.A. (Semester – VI) (New) (CBCS) Examination: Oct/Nov-2022
Advanced Java**

Day & Date: Monday, 27-03-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labeled diagrams wherever necessary.

Q.1 A) Multiple choice questions.

10

- 1) What are the different types of Bean injection?
 - a) constructor and setter
 - b) constructor and getter
 - c) getter and setter
 - d) setter, getter and constructor
- 2) In case of Table per Concrete class, there will be three tables in the database having no relations to each other. Which are the ways to map the table?
 - a) By union-subclass element
 - b) By self-creating the table for each class
 - c) Both A & B
 - d) None of the above
- 3) Application is instance of which class?
 - a) javax.servlet.Application
 - b) javax.servlet.HttpContext
 - c) javax.servlet.Context
 - d) javax.servlet.ServletContext
- 4) In JSP Action tags which tags are used for bean development?
 - a) jsp:useBean
 - b) jsp:setProperty
 - c) jsp:getProperty
 - d) All mentioned above
- 5) Abbreviate the term HQL?
 - a) Hibernate Queue Language
 - b) Hibernate Query Language
 - c) Higher Query Language
 - d) None of the above
- 6) In RequestDispatcher which method is used to send the same request and response objects to another servlet?
 - a) forward()
 - b) sendRedirect()
 - c) Both A & B
 - d) None of the above
- 7) Which of the following is an advantage of the statement - Separation of business logic from JSP?
 - a) Custom Tags in JSP
 - b) JSP Standard Tag Library
 - c) All the above
 - d) None of the above
- 8) Which cookie is valid for single session only; it is removed each time when user closes the browser?
 - a) Persistent cookie
 - b) Non-persistent cookie
 - c) Both A & B
 - d) None of the above

- 9) Which object of HttpSession can be used to view and manipulate information about a session, such as the?
- a) session identifier
 - b) creation time
 - c) last accessed time
 - d) All mentioned above
- 10) Hibernate is an?
- a) Open Source
 - b) Lightweight
 - c) ORM
 - d) All mentioned above

B) Fill in the blank.**06**

- 1) AOP stands for _____.
- 2) The valid scopes in JSP are _____.
- 3) _____ class can handle any type of request so that it is protocol-independent.
- 4) A JSP is transformed into _____.
- 5) ORM stands for _____.
- 6) The collection types in Hibernate are _____.

Q.2 Solve any Eight of the following.**16**

- 1) What are the three states of a Hibernate Persistence object can be?
- 2) What is Hibernate?
- 3) Write any two advantages of spring.
- 4) Write and explain two implicit objects in JSP.
- 5) Write any two differences between Session and Cookie.
- 6) List the JSTL SQL, tags.
- 7) What is an Internationalization and Locale? .
- 8) What is the use of ResultSetExtractor and RowMapper?
- 9) List the General purpose tags in JSP.
- 10) List the implicit objects in JSP.

Q.3 A) Attempt any Two of the following.**10**

- 1) Explain JSP life cycle with suitable example.
- 2) What is request dispatcher? Explain forward and include in request dispatcher with example.
- 3) Explain constructor dependency injection of Spring.

B) Explain various directives in jsp.**06****Q.4 A) Attempt any Two of the following.****08**

- 1) Write a JSP page to check given no is Armstrong or not.
- 2) Write the difference between CGI and Servlet.
- 3) What is ORM? Explain use of ORM in details.

B) Explain hibernate inheritance mapping without using annotations.**08****Q.5 Attempt any Two of the following.****16**

- a) What is Cookie? Write a program to add a cookie on client browser.
- b) Write a program to store Employee information such as eid, ename, salary, ect. Into emp table using Hibernate annotation.
- c) What is Spring framework? Explain it's components in detail.

Seat No.	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2022
DOT NET TECHNOLOGY**

Day & Date: Monday, 06-02-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:**
- 1) All questions are compulsory.
 - 2) Draw neat labeled diagrams wherever necessary.
 - 3) Figures to the right indicate full marks.
 - 4) Use of log table and calculators is allowed.

- Q.1 A) Choose the correct alternatives from the options. 10**
- 1) Ajax stands for Synchronous JavaScript and XML.
 - a) True
 - b) False
 - 2) The following group profile properties defined under a group name in Web.config file. How will you access Street property?


```
<properties> <group name="Address">
<add name='Street' />
<add name="City" />
</group></properties>
```

 - a) Profile.name.Street
 - b) Profile.Address.Street
 - c) Address.Street
 - d) None of the above
 - 3) _____ is an extension of the sitemap file.
 - a) .map
 - b) .sitemap
 - c) .site
 - d) None of these
 - 4) When a User's Session times out which event should you respond to?
 - a) Session_start
 - b) session_end
 - c) application_start
 - d) application_end
 - 5) What type of data can Cookies store?
 - a) String
 - b) Encrypt
 - c) DateTime
 - d) Int32
 - 6) Session technique is a client side state management technique _____.
 - a) True
 - b) False

- 7) _____ is a AJAX control in asp.net.
 - a) Timer
 - b) Upload
 - c) Manager
 - d) None of these
- 8) _____ is the extension of code behind page.
 - a) .aspx.vb
 - b) .aspx.cs
 - c) both a & b
 - d) None of these
- 9) _____ property is common for all validation control.
 - a) ControlToValidate
 - b) Type
 - c) Error
 - d) All of these
- 10) Which object data is included in bookmarks and e-mail URLs?
 - a) View State
 - b) Cookies
 - c) Query String
 - d) All of these

B) Fill in the blanks. 06

- 1) ASP stands for _____.
- 2) A module which is a collection of functions and data, designed to be used by another application is called _____.
- 3) _____ is the first method that is fired during the page load.
- 4) _____ control does not modify text at run time.
- 5) _____ validator is used to check an email address entered by the user.
- 6) _____ event is common for check box and radio button control.

Q.2 Answer the followings (Any Eight): 16

- 1) Write the features of ASP.Net
- 2) List the properties of Calendar control.
- 3) What is sitemap file.
- 4) Define web service.
- 5) Why need of master page?
- 6) What is WSDL?
- 7) What is IIS?
- 8) Explain Query String.
- 9) How to add AJAX control toolkit.
- 10) Write the event ordering of master page.

Q.3 A) Answer the followings (Any two): 10

- 1) What is Web service? Explain WSDL.
- 2) Explain how to create web user control.
- 3) What is cross page posting? Explain with example.

B) Short Note on state management technique. 06

- Q.4 A) Answer the followings (Any two):** **08**
- 1) What is navigation? Explain Tree View control with example.
 - 2) What is application folder? Explain App_Code folder.
 - 3) Explain Button control with properties and example.
- B) What is ADO.Net? Explain architecture of ADO.Net** **08**
- Q.5 Answer the following (Any Two).** **16**
- a) Explain ASP.Net page life cycle.
 - b) What is Personalization? Explain personalization model with <profile> tag.
 - c) What is master page? Explain nested master page with example.

Seat No.	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2022
DATA WAREHOUSE AND DATA MINING**

Day & Date: Tuesday, 07-02-2023

Max. Marks: 80

Time: 03:00 PM To 06:00 PM

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

Q.1 A) Choose the correct alternatives from the options. 10

- 1) Which of the following refers to the problem of finding abstracted patterns (or structures) in the unlabeled data?
 - a) Supervised learning
 - b) Unsupervised learning
 - c) Hybrid learning
 - d) Reinforcement learning
- 2) Which one of the following statements about the K-means clustering is incorrect?
 - a) The goal of the k-means clustering is to partition (n) observation into (k) clusters
 - b) K-means clustering can be defined as the method of quantization
 - c) The nearest neighbor is the same as the K-means
 - d) All of the above
- 3) Which one of the following correctly defines the term cluster?
 - a) Group of similar objects that differ significantly from other objects
 - b) Symbolic representation of facts or ideas from which information can potentially be extracted
 - c) Operations on a database to transform or simplify data in order to prepare it for a machine learning algorithm
 - d) All of the above
- 4) Euclidean distance measure is can also defined as _____.
 - a) The process of finding a solution for a problem simply by enumerating all possible solutions according to some predefined order and then testing them
 - b) The distance between two points as calculated using the Pythagoras theorem
 - c) A stage of the KDD process in which new data is added to the existing selection.
 - d) All of the above

- 5) The term "DMQL" stands for _____.
 - a) Data Marts Query Language
 - b) DBMiner Query Language
 - c) Data Mining Query Language
 - d) None of the above
- 6) Which of the following applied on warehouse?
 - a) write only
 - b) read only
 - c) both a & b
 - d) none of these
- 7) Data mining is defined as?
 - a) subject-oriented integrated time-variant non-volatile collection of data in support of management
 - b) The stage of selecting the right data for a K.DD process
 - c) The real discovery stage of a knowledge discovery process
 - d) None of these
- 8) How to define Classification accuracy?
 - a) A subdivision of a set of examples into a number of classes
 - b) The task of assigning a classification to a set of examples
 - c) Measure of the accuracy of the classification of a concept that is given by a certain theory
 - d) None of these
- 9) Which clustering technique requires a merging approach?
 - a) Partitional
 - b) Hierarchical
 - c) Naive Bayes
 - d) None of the mentioned
- 10) Small logical units where data warehouses hold large amounts of data is known as _____.
 - a) Data Layers
 - b) Data Marts
 - c) Data Storages
 - d) Data Miners

B) Answer in one sentence.

06

- 1) Define Testing Data set.
- 2) Euclidian Formula to calculate distance
- 3) Fact table
- 4) Outlier Records
- 5) Noisy Data
- 6) Pattern

Q.2 Answer the followings (Any Eight):

16

- 1) Binerisation
- 2) Classifier
- 3) Confidence
- 4) HDD
- 5) OLAP
- 6) ETL

- 7) Maximal Frequent Item set
- 8) Manhattan Formula
- 9) Over fitting in decision tree
- 10) Similarities

Q.3 A) Answer the followings (Any two): **10**

- 1) Define decision tree. Explain the algorithm to draw induction of Decision tree.
- 2) What is Dimension table? Explain snow flake schema with example.
- 3) Define Data Mining. Explain Web Mining.

B) Solve the following (Any one). **06**

- 1) Draw a FP growth tree for following data and find frequent Item Set.

TID	Items	TID	Items	TID	Items
A1	{z,x,y}	A4	{z.p,e}	A7	{z}
A2	{x,y,p}	A5	{z.x,y}	A8	{z.x,y}
A3	{z,y,p,e}	A6	{z.x,y,p}	A9	{z.x.p}

- 2) Define Clustering. Explain Types of Clustering in Details.

Q.4 A) Answer the followings (Any two): **08**

- 1) What is Classification? Explain Naive Bayes Classifier with example.
- 2) What is Knowledge? Explain the detailed process of KDD.
- 3) What is OLAP? Explain ROLAP architecture.

B) Describe the following. (Any Two). **08**

- 1) Define Medoid. Explain PAM Algorithm.
- 2) Define Data mining. Explain special data mining.
- 3) Explain K-mean algorithm with example.

Q.5 Answer the following (Any Two). **16**

- a) Define Market Basket Analysis. Explain Apriori Algorithm with proper example.
- b) What is Pre-processing? Explain different data Pre- processing Methods.
- c) Explain Data Warehouse architecture in detail.

Seat No.	
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B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2022
CRYPTOGRAPHY AND NETWORK SECURITY

Day & Date: Wednesday, 08-02-2023
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:**
- 1) All questions are compulsory.
 - 2) Draw neat labeled diagrams wherever necessary.
 - 3) Figures to the right indicate full marks.
 - 4) Use of log table and calculators is allowed.

Q.1 A) Choose the correct alternatives from the options. 10

- 1) An asymmetric-key (or public-key) cipher uses _____.

a) 1 key	b) 2 key
c) 3 key	d) 4 key

- 2) The man-in-the-middle attack can endanger the security of the diffie-hellman if two parties are not _____.

a) authenticated	b) joined
c) submit	d) separate

- 3) In cryptography, what is cipher?
 - a) algorithm for performing encryption and decryption
 - b) encrypted message
 - c) both algorithm for performing encryption and decryption and encrypted message
 - d) decrypted message

- 4) What is data encryption standard (DES)?

a) block cipher	b) stream cipher
c) bit cipher	d) byte cipher

- 5) The inverse of 7 module 26 is _____.

a) 12	b) 15
c) 20	d) 18

- 6) Elgamal encryption is _____.
 - a) symmetric key encryption algorithm
 - b) asymmetric key encryption algorithm
 - c) not an encryption algorithm
 - d) block cipher method

- 7) An attack in which the site is not capable of answering valid request is _____.

a) Smurfing	b) Denial of Service
c) Traffic analysis	d) E-mail bombing

- 8) The shift cipher is sometimes referred to as _____.
 - a) Caesar cipher
 - b) Cipher
 - c) Multiplicative cipher
 - d) cipher text
- 9) The DES Algorithm Cipher System consists of _____ rounds (iterations) each with a round key.
 - a) 12
 - b) 18
 - c) 9
 - d) 16
- 10) Which of the following is /are offered by the Hash functions?
 - a) Authentication
 - b) Non repudiation
 - c) Data Integrity
 - d) All of the above

- B) Answer the following questions. 06**
- 1) What is DES?
 - 2) Define Hash Functions.
 - 3) List the names of attacks threatened by integrity.
 - 4) Define Steganography.
 - 5) What is S/MIME?
 - 6) What do you mean by active attacks?

- Q.2 Answer the followings (Any Eight): 16**
- 1) What is encryption and decryption?
 - 2) Differentiate between cryptography and steganography.
 - 3) What is Trapdoor one-way function?
 - 4) Encrypt the message "Welcome" with key=5 using additive cipher.
 - 5) Explain any two security services.
 - 6) Define Digital Signature.
 - 7) What do you mean by honeypots?
 - 8) Define Cryptanalysis.
 - 9) List out applications of IPSec.
 - 10) What is Avalanche effect?

- Q.3 A) Answer the followings (Any two): 10**
- 1) Write a short note on Meet-in -the -middle attack.
 - 2) Explain different types of active and passive attacks.
 - 3) What is TLS? Explain.

- B) Explain with neat labeled diagram Kerberos. 06**

- Q.4 A) Answer the followings (Any two): 08**
- 1) Define firewalls? Explain its types.
 - 2) Encrypt the data "Life is full of surprises" using autokey cipher with $K_1=10$.
 - 3) Write a short note on Transposition ciphers.

- B) Explain general structure of AES. 08**

Q.5 Answer the following (Any Two).

- a)** Explain with neat labeled diagram RSA Cryptosystem.
- b)** Write a short note on PGP and S/MIME.
- c)** Explain security services- provided by digital signature.

- 8) How we import tkinter in python programmer?
 - a) import tkinter
 - b) import tkinter as t
 - c) from tkinter import *
 - d) All the above
- 9) Correct way to draw a line in canvas tkinter?
 - a) line()
 - b) canvas.create_line()
 - c) create line(canvas)
 - d) None of the above
- 10) How pack() function works on tkinter widget?
 - a) According to x,y coordinate
 - b) According to row and column wise
 - c) According to left, right, up,down
 - d) None of the above

B) One sentence answer/one word answer. 06

- 1) Essential thing to create a window screen, using tkinter python?
- 2) How we import a tkinter in python program?
- 3) Minimum number of argument we require to pass in a function to create a line?
- 4) Use of the angle attribute is on which widget?
- 5) To get the multiline user data which widget we use.
- 6) We can able to delete Button, Label & Frame using which function?

Q.2 Answer the followings (Any Eight): 16

- 1) What is an App in Django?
- 2) What is root window?
- 3) What Is a Web Framework?
- 4) Explain Tkinter.
- 5) What are widgets in python?
- 6) What are containers in python?
- 7) What is XML?
- 8) Explain Spinbox widget.
- 9) Explain any 4 properties of canvas.
- 10) Write a program to create simple window.

Q.3 A) Answer the followings (Any two): 10

- 1) Write a python program to draw arcs opposite to each other.
- 2) Write a simple XML program.
- 3) Write a python program to add Label & Entry.

B) Short note/Solve. 06

Write a short note on Layout Manager in detail with suitable example.

- Q.4 A) Answer the followings (Any two):** **08**
- 1) What is GUI programming? Explain advantages of GUI programming.
 - 2) Write a python program to display Message Box.
 - 3) Explain MVT design structure.
- B) Describe/Explain/Solve** **08**
- Explain Socket Programming in detail.
- OR**
- Explain Check Button & Radio Button widget in detail with example.
- Q.5 Answer the following (Any Two).** **16**
- a) Explain Containers in python in detail.
 - b) Explain XML with Parsing method in detail.
 - c) Write a python program to display following Menu:
Menu:-
 - 1) Sum of Two Numbers
 - 2) Square root of Number
 - 3) Exit

Seat No.	
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**B.C.A. (Semester - VI) (Old) (CBCS) Examination: Oct/Nov-2022
Advanced Java**

Day & Date: Tuesday, 28-03-2023
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Select the correct answer from the given alternatives. 14

- 1) Sessions is a part of the Session Tracking and it is for maintaining the client state at _____ side.
 - a) client
 - b) server
 - c) both a and b
 - d) none of the above
- 2) Clean up process in servlet is handled by _____ method.
 - a) start()
 - b) stop()
 - c) init()
 - d) destroy()
- 3) Cookies are stored at _____ side.
 - a) server
 - b) client
 - c) both a and b
 - d) none of these
- 4) Which JSTL tag catches any exception that occurs in a program body?
 - a) <c:catch>
 - b) <c:try>
 - c) <c:exception>
 - d) All of these
- 5) Which is / are true about Hibernate?
 - a) An open source
 - b) A light weight
 - c) Is a framework interact with database
 - d) All of these
- 6) In spring, AOP stands for Active Object Program.
 - a) True
 - b) False
- 7) Which of these packages contains Locale class?
 - a) java.lang
 - b) java.io
 - c) java.util
 - d) java.awt
- 8) Which of the inheritance strategy is used to sub-element <subclass> of element<class>?
 - a) TPH
 - b) TPC
 - c) TPS
 - d) None of these
- 9) What are different types of Bean injection in spring?
 - a) constructor
 - b) setter
 - c) setter and getter
 - d) both a) and b)
- 10) All Hibernate annotations are defined in _____ package.
 - a) javax.persistence.*
 - b) javax.hibernate.*
 - c) javax.hibernate.annotation.*
 - d) java.annotation.*
- 11) TLD stands for Tag Library Descriptor.
 - a) True
 - b) False

- 12)** config is instance of which class?
 a) javax.servlet.ServletContext b) javax.servlet.ServietConfig
 c) javax.servlet.Config d) javax.servlet.Application
- 13)** Which of the following class can be used to execute Sql queries in spring?
 a) JDBCHelper b) JdbcTemplate
 c) DBHelper d) DBTemplate
- 14)** Which class can handle any type of request so that it is protocol independent?
 a) GenericServlet b) HttpServlet
 c) HttpSession d) None of these

Q.2 A) Answer the following (Any Four) 08

- 1) What are the features of servlet?
- 2) What is collection mapping? List it's mapping ways.
- 3) What is internationalization and localization?
- 4) Write the steps to create the first application of HB.
- 5) What is JavaBean?

B) Write Notes on (Any Two) 06

- 1) Write the difference between GenericServlet and HttpServlet.
- 2) Explain Hibernate architecture.
- 3) Explain constructor injection in spring.

Q.3 A) Answer the following (Any Two) 08

- 1) What is the difference between doGet and doPost methods?
- 2) Explain any four JSP implicit object.
- 3) What is request dispatcher? Explain forward and include in request dispatcher with example.

B) Answer the following (Any One) 06

- 1) Explain JSP life cycle with example.
- 2) Explain prepared statement in Spring Jdbc Template with example.

Q.4 A) Answer the following (Any Two) 10

- 1) Explain JSP action tags in detail.
- 2) Explain Spring Architecture in detail.
- 3) Write a program to count how many times user has accessed the webpage using HttpSession.

B) Answer the following (Any One) 04

- 1) List the JSTL tags and explain only core tags.
- 2) Write a program to implements HTTP request POST method in servlet.

Q.5 Answer the following (Any two) 14

- a) List the types of inheritance in Hibernate. Explain one type with example.
- b) Write a program to store Employee information such as eid, ename, salary, ect. into emp table using Hibernate annotation. (oracle table)
- c) Explain the session tracking mechanism in detail.

Seat No.	
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**B.C.A. (Semester – VI) (Old) (CBCS) Examination: Oct/Nov-2022
Dot Net Technology**

Day & Date: Monday, 27-03-2023
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternatives.

14

- 1) What are the Command Object methods.?
 - a) ExecuteNonQuery
 - b) ExecuteReader
 - c) ExecuteScalar
 - d) All of the above
- 2) What is the file extension of web service in ASP.NET.?
 - a) .ascx
 - b) .asmx
 - c) .aspx
 - d) .docx
- 3) AJAX stands for _____.
 - a) Asynchronous Javascript and XML.
 - b) Abstract Java and XML
 - c) Another Java and XML
 - d) Another Java and X-Window.
- 4) Which is the first event of ASP.NET page, when user requests a web page.?
 - a) PreLoad
 - b) Load
 - c) Preinit
 - d) init
- 5) _____ is a property common in every validation control.
 - a) ValidataionExpression
 - b) InitialValue
 - c) ValueToCompare
 - d) ControlToValidate
- 6) Which web server control is used to display advertisements in ASP.NET a webpage.?
 - a) Image
 - b) ImageMap
 - c) Panel
 - d) AdRotator
- 7) What is/are the advantages of Master Page.?
 - a) It helps to display common content in multiple pages.
 - b) They allow you to centralize the common functionality of your pages so that you can make updates in just one place.
 - c) It helps to create a common page layout.
 - d) All of the above.
- 8) The heart of the new ASP.NET personalization service is the User Profile.
 - a) True
 - b) False
- 9) SiteMapPath control displays path from root to current page.
 - a) True
 - b) False
- 10) From the following which is not a valid State Management object.?
 - a) Querystate
 - b) Cookies
 - c) Application State
 - d) Hidden form fields

Seat No.	
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B.C.A. (Semester - VI) (Old) (CBCS) Examination: Oct/Nov-2022
RECENT TRENDS IN IT

Day & Date: Monday, 06-02-2023
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternative from the following options. 14

- 1) A _____ is an approach to Information Technology management that is concerned with viewing and treating a complex computer system as a single entity.

a) Holistic	b) Manual
c) Machine	d) System

- 2) _____ cloud allows the accessibility of systems and services within a specific an organization.

a) Distributed	b) Private
c) Community	d) Hybrid

- 3) Virtualization management is primarily done from a _____ application.

a) Virtual Machine Manager	b) Vital Management
c) Control Management	d) Base Management

- 4) _____ is the study and practice of designing, manufacturing and disposing of computers resource efficiently and effectively with minimal or no impact on the environment.

a) Environmental	b) Computer
c) Green IT	d) Traditional

- 5) The _____ is the network of devices, vehicles, and home appliances that contain electronics, software, actuators, and connectivity which allows these things to connect, interact and exchange data.

a) Internet of things	b) Information of things
c) Important of things	d) Impact of things

- 6) _____ is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed.

a) Machine learning	b) Language learning
c) Device learning	d) Computer learning

- 7) _____ is a paradigm of distributed computing to provide the customers on-demand, utility based computing service.

a) Remote Invocation	b) Cloud Computing
c) Remote Sensing	d) Sound Computing

- 8) Which of the following is component of Hadoop?

a) HDFS	b) YARN
c) Map Reduce	d) All of the above

- 9) Hadoop works in _____.

a) Master-Slave fashion	b) Master-Save fashion
c) Master-Saving fashion	d) Master-Seeing fashion

Seat No.	
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B.C.A. (Semester - VI) (Old) (CBCS) Examination: Oct/Nov-2022
CRYPTOGRAPHY AND NETWORK SECURITY

Day & Date: Tuesday, 07-02-2023
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternative from the following options. 14

- 1) In Cryptography, when text is treated at the bit level, each character is replaced by _____.
 - a) 4 Bites
 - c) 6 Bites
 - b) 8 Bites
 - d) 10 Bites
- 2) In Cryptography, the original message, before being transformed, is called _____.
 - a) Simple text
 - b) Plain text
 - c) Empty text
 - d) Filled text
- 3) The full form of SSL is _____.
 - a) Serial Session Layer
 - b) Secure Socket Layer
 - c) Session Secure Layer
 - d) Series Socket Layer
- 4) The process of transforming plain text to unreadable text _____.
 - a) Decryption
 - b) Encryption
 - c) Network Security
 - d) Information Hiding
- 5) We use Cryptography term to transforming messages to make them secure and immune to _____.
 - a) Change
 - b) Idle
 - c) Attacks
 - d) Defend
- 6) In symmetric key cryptography, the key used by the sender and the receiver is _____.
 - a) shared
 - b) different
 - c) two keys are used
 - d) none of these
- 7) An algorithm used in encryption is referred to as cipher _____.
 - a) True
 - b) False
- 8) The keys used in cryptography are _____.
 - a) secret key
 - b) private key
 - c) public key
 - d) All of above
- 9) The Advanced Encryption Standard (AES), has three different configurations with respect to the number of rounds and _____.
 - a) Data size
 - b) Round size
 - c) Key size
 - d) Encryption size
- 10) DES stands for _____.
 - a) Data Encryption Standard
 - b) Data Encryption Subscription
 - c) Data Encryption Solutions
 - d) Data Encryption Slots

- 11) The digest created by a hash function is normally called a _____.
 a) Modification detection code
 b) Modify authentication connection
 c) Message authentication control
 d) Message authentication cipher
- 12) _____ is not a block cipher.
 a) DES
 b) IDEA
 c) AES
 d) RSA
- 13) In monoalphabetic substitution, the relationship between a symbol in the plaintext to a symbol in the cipher text is always _____.
 a) one-to-many
 b) one-to-one
 c) many-to-one
 d) many-to-many
- 14) Digital signature cannot provide _____ for the message.
 a) integrity
 b) confidentiality
 c) nonrepudiation
 d) authentication

- Q.2 A) Answer the following questions. (Any two) 08**
 1) What is Cryptography?
 2) Write the Two security Protocols.
 3) What is mean by Email?
 4) What is Primality Testing?
 5) Define the term Attacks.
- B) Write Notes on. (Any Two) 06**
 1) Explain Attacks on Digital Signature.
 2) Explain the Asymmetric Key Cryptography.
 3) Security Goal.
- Q.3 A) Answer the following questions. (Any Two) 08**
 1) Explain the SSL Message Formats.
 2) Write the use of Stream Ciphers.
 3) Explain RSA Cryptosystem.
- B) Answer the following questions. (Any One) 06**
 1) What is meant by cipher? Explain the types of cipher.
 2) What is mean by SSL? Explain SSL Architecture.
- Q.4 A) Answer the following questions. (Any Two) 10**
 1) Explain services provided by IPSec.
 2) What is Additive Cipher? Use the additive cipher with key = 15 to encrypt the message "hello".
 3) Explain the Structure and Analysis of DES.
- B) Answer the following questions. (Any One) 04**
 1) Explain the Substitution Ciphers.
 2) Explain the security attacks.
- Q.5 Answer the following questions. (Any Two) 14**
 a) Explain the PGP and S/MIME in detail.
 b) Explain the Process and Services of the Digital Signature in detail.
 c) Explain the security services and mechanisms in detail.

Seat No.	
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B.C.A. (Semester - VI) (Old) (CBCS) Examination: Oct/Nov-2022
SYSTEM PROGRAMMING

Day & Date: Tuesday, 07-02-2023
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternative from the following options. 14

- 1) Assembler is a machine dependent, because of _____.
 - a) Argument list array(ALA)
 - b) Macro definition table (MDT)
 - c) Pseudo operation tablet (POT)
 - d) Mnemonics operation table (MOT)
- 2) Macro processor is an inbuilt function of _____.
 - a) Assembler
 - b) Loader
 - c) Linker
 - d) Editor
- 3) A processor is _____.
 - a) a sequence of instructions
 - b) the device where information is stored
 - c) a device that performs a sequence of operations specified by instructions in memory
 - d) none of these
- 4) A computer program that converts the whole program into machine language at a single time is called _____.
 - a) Compiler
 - b) Translator
 - c) Interpreter
 - d) All of the above
- 5) The _____ device can understand the difference data and programs.
 - a) ALU
 - b) Registers
 - c) Motherboard
 - d) Microprocessor
- 6) Compilers can check _____.
 - a) Syntax Error
 - b) Logical Error
 - c) Both Logical and Syntax Error
 - d) None of these
- 7) In an absolute loading scheme _____ loader function is accomplished by programmer.
 - a) Linking
 - b) Allocation
 - c) Both (a) and (b)
 - d) Reallocation
- 8) A compiler program written in a high level language is called _____.
 - a) object program
 - b) source program
 - c) machine language program
 - d) none of these
- 9) Advantage of using assembly language rather than machine language is _____.
 - a) it is mneomonic and easy to read
 - b) addresses any symbolic not absolute
 - c) introduction of data to program is easier
 - d) all of these

- 10) _____ of the following is a phase of a compilation process.
 a) Lexical analysis b) Code generation
 c) Both (a) and (b) d) None of these
- 11) A loader is a program that _____.
 a) Program that places programs into memory and prepares them for execution.
 b) Program that automates the translation of assembly language into machine language.
 c) Program that accepts a program written in a high level language and produces as object program.
 d) None of these
- 12) A system program that setup an executable program in main memory ready for execution is called as _____.
 a) loader b) linker
 c) Assembler d) load and go
- 13) A simple two-pass assembler does which of the following in the first pass?
 a) It allocates space for the literals
 b) It computes the total length of the program
 c) It builds the symbol table for the symbols and their values
 d) All of these
- 14) The _____ computer language generally translated to pseudocode.
 a) Pascal b) Machine
 c) Fortran d) Assembly

- Q.2 A) Answer the following questions. (Any Four) 08**
- 1) Give the name of general purpose register.
 - 2) What are the features of macro?
 - 3) Define loader and binder.
 - 4) Why symbol table is used?
 - 5) What are the problems in designing of assembler?
- B) Write Notes on (Any Two) 06**
- 1) What are the advantages of radix sort?
 - 2) Explain dynamic binders.
 - 3) State difference between compiler and interpreter.
- Q.3 A) Answer the following questions. (Any Two) 08**
- 1) Explain the general structure of assembly language program.
 - 2) State difference between bottom-up and top-down parser.
 - 3) Explain the code optimization phase?
- B) Answer the following questions. (Any One) 06**
- 1) Explain different parameter passing mechanisms in macro-processor.
 - 2) Explain shell sort with example.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) Explain binary search with example.
 - 2) Explain components of programming system.
 - 3) What is assembler? Explain general design procedure of assembler.
- B) Answer the following questions. (Any One) 04**
- 1) Explain absolute loader.
 - 2) Explain the conditional macro expansion the suitable example.

Q.5 Answer the following questions. (Any Two)

- 1)** What is compiler? Explain phase of compiler.
- 2)** What is sorting? Give comparison of sorting.
- 3)** What is macro? Explain types of macro.

Seat No.	
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B.C.A. (Semester - III) (CBCS) Examination: Oct/Nov-2022
Operations Research

Day & Date: Wednesday, 01-03-2023
Time: 09:00 AM To 11:30 AM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat diagrams and give equations wherever necessary.

Q.1 Multiple Choice questions. (2 marks each)

14

- 1) Feasible solution satisfies _____.
 - a) Only constraint
 - b) Only non-negative restriction
 - c) Both a and b
 - d) Both a, b and optimum solution

- 2) When total supply is equal to total demand in a transportation problem, the problem is said to be _____.
 - a) balanced
 - b) unbalanced
 - c) degenerate
 - d) non-degenerate

- 3) One disadvantage of using North-West Corner rule to find initial solution to the transportation problem is that _____.
 - a) it is complicated to use
 - b) it does not take into account cost of transportation
 - c) it leads to a degenerate initial solution
 - d) All of these

- 4) The solution to a transportation problem with ' m ' rows (supplies) & ' n ' columns (destination) is feasible if number of positive allocations are _____.
 - a) $m + n$
 - b) $m * n$
 - c) $m + n - 1$
 - d) $m + n + 1$

- 5) The application of assignment problems is to obtain _____.
 - a) only minimum cost
 - b) minimum cost or minimum cost
 - c) assign the jobs
 - d) none of these

- 6) Operations research is the application of _____ methods to arrive at the optimal Solutions to the problems.
 - a) economical
 - b) scientific
 - c) a and b both
 - d) artistic

- 7) Hungarian Method is used to solve _____.
 - a) A transportation problem
 - b) A travelling salesman problem
 - c) A LP problem
 - d) Both a & b

Q.2 A) Answer the following (Any Four) 08

- 1) Define objective function with example.
- 2) State the maximization in assignment problem.
- 3) Write rules for Northwest corner method.
- 4) Write the formula to find opportunity cost d_{ij} in MODI Method.
- 5) What are the basic and non-basic cells?

B) Answer the following (Any Two) 06

- 1) Describe the unbalanced assignment problem.
- 2) Write the following Linear Programming Problem in standard form,
 Maximize $Z = 55x + 29y$ subject to

$$3x + 7y \leq 10,$$

$$4x + y \geq 15,$$

$$y \leq 4,$$

$$x, y \geq 0$$
- 3) Write the scopes of operations research.

Q.3 A) Answer the following (Any Two) 08

- 1) Distinguish between assignment problem and Transportation problem.
- 2) Solve the assignment problem to minimize the cost.

	P	Q	R	S	T
A	8	4	2	6	1
B	0	9	5	5	4
C	3	8	9	2	6
D	4	3	1	0	3
E	9	5	8	9	5

- 3) Write a tabular form of Transportation problem with 4 factories and 4 warehouses.

B) Answer the following questions. (Any One) 06

- 1) Define
 - 1) Feasible solution &
 - 2) Decision variable of LPP.
 Write the tabular form of TP with 3 factories & 4 warehouses.
- 2) Solve the following AP for maximize the profit by Hungarian method.

	P	Q	R	S
A	35	27	28	37
B	28	34	29	40
C	35	24	32	33
D	24	32	25	82

Q.4 A) Answer the following questions. (Any Two) 10

- 1) Solve the following AP to minimize the cost.

	A	B	C	D
P	15	13	14	17
Q	11	12	15	13
R	13	12	10	11
S	15	17	14	16

- 2) Find IBFS of following TP by matrix minima method.

	W ₁	W ₂	W ₃	W ₄	a _i
F ₁	190	300	500	100	70
F ₂	700	300	400	600	90
F ₃	400	100	600	200	180
b _j	50	80	70	140	

3) Define canonical form of LPP. Give any example.

B) Answer the following questions. (Any One)

04

1) Find IBPS of following TP by north west corner method.

	W_1	W_2	W_3	W_4	a_i
F_1	30	25	40	20	100
F_2	20	26	35	40	250
F_3	31	33	37	30	150
b_j	90	160	200	50	500

2) Explain matrix minima method (least cost method) to find IBFS of TP.

Q.5 Answer the following (Any Two)

14

a) Solve the following Linear Programming Problem by graphical method.

Maximize $Z = 3x + 4y$ subject to,

$$5x + 4y \leq 200$$

$$3x + 5y \leq 150$$

$$5x + 4y \geq 100$$

$$8x + 4y \geq 80$$

$$\text{And } x, y \geq 0$$

b) Describe MODI's Method.

c) Explain the test for optimality using Hungarian method.

8. आदिवासी रोजंदारीवरील कामगार, मच्छिमार, बांधकाम मजूर यांचा समावेश भारताच्या ——— समूहांमध्ये होतो.
 अ) पुढारलेल्या ब) वंचित
 क) सत्ताधारी ड) यापैकी सर्व
9. प्रातिनिधिक लोकशाहीत ——— प्रक्रिया शासन आणि जनतेला जोडते.
 अ) भ्रष्टाचार ब) हुकूमशाही
 क) निवडणूक ड) अर्थशास्त्र
10. प्रत्यक्ष लोकशाही इसवी सन पूर्व तिसऱ्या शतकात ——— येथे सुरु झाली.
 अ) भारत ब) इंग्लंड
 क) अथेन्स ड) अमेरिकेची संयुक्त संस्थाने
11. खालीलपैकी कोणता अधिकार भारतीय राज्यघटनेमधील मूलभूत अधिकार आहे?
 अ) शिक्षणाचा अधिकार ब) संप करण्याचा अधिकार
 क) संपत्तीचा अधिकार ड) क्रांती करण्याचा अधिकार
12. ——— ही तळपातळीवरील संसदेची छोटी प्रतिकृती आहे.
 अ) लोकसभा ब) विधानपरिषद
 क) ग्रामसभा ड) राज्यसभा
13. सुशासनासाठी ——— हे आवश्यक आहे.
 अ) केंद्रीकरण ब) खाजगीकरण
 क) लोकसहभाग ड) दंगा नियंत्रक पोलीस
14. भारतीय मतदार ——— सदस्य प्रत्यक्षपणे निवडतात.
 अ) राज्यसभेचे ब) लोकसभेचे
 क) विधान परिषदेचे ड) निवडणूक आयोगाचे
15. 73 वी आणि 74 वी घटना दुरुस्ती ——— सरकारशी संबंधित आहेत.
 अ) केंद्र ब) राष्ट्रीय
 क) राज्य ड) स्थानिक
16. लोकशाहीला घटनात्मक शासन असेही म्हटले जाते, याचा अर्थ ——— राज्य असा होतो.
 अ) शक्तीचे ब) कायद्याचे
 क) सत्ताधारी शक्तीच्या लहरीप्रमाणे ड) हुकूमशाहाचे
17. सार्वजनिक उत्तरदायित्व म्हणजे प्रातिनिधीने लोकांना ——— असणे होय.
 अ) विरोधी ब) बेजबाबदार
 क) जबाबदार ड) यापैकी सर्व
18. स्वातंत्र्य, समता आणि बंधुता ही ——— लोकशाहीची मुख्य मूल्ये आहेत.
 अ) जुन्या ब) ग्रीक
 क) सामाजिक ड) परदेशी

41. प्रत्यक्ष लोकशाहीलाच ---- लोकशाही असेही म्हणतात.
 अ) सहभागी ब) प्रातिनिधीक
 क) नवीन ड) नकारात्मक
42. लोकशाहीमध्ये विधिमंडळ, मंत्रिमंडळ आणि इतर समितीमधील प्रश्न सोडविण्यासाठी ---- हे तत्व वापरतात.
 अ) अल्पमताचे नियम ब) बहुमताचा नियम
 क) नेतृत्व ड) हुकूमशाही
43. डॉ.आंबेडकर यांनी ---- लोकशाहीचा पुरस्कार केला.
 अ) प्रत्यक्ष ब) सामाजिक
 क) प्राचीन ड) आधुनिक
44. महाराष्ट्र गांधी राष्ट्रीय ग्रामीण रोजगार हमी कायदा हे ---- योजनेचे उदाहरण आहे.
 अ) राजकीय ब) सामाजिक कल्याण
 क) लोकप्रिय ड) निवडणूक
45. खालीलपैकी कोणते लोकशाहीचे तत्व नाही?
 अ) सहमतीने शासन ब) सार्वजनिक उत्तरदायित्व
 क) कायद्याचे राज्य ड) हुकूमशाही
46. भारतात खुल्या आणि न्यायपूर्ण निवडणूक सातत्याने घेतल्या गेल्या. याला ---- हे वर्ष अपवाद होते.
 अ) 2014
 ब) 1976
 क) 1967
 ड) 2000
47. बलवंतराय मेहता आणि अशोक मेहता समिती या भारतातील ---- या घटकाशी संबंधित आहेत.
 अ) जी.एस.टी ब) संसद
 क) राज्य सरकार ड) पंचायती राज्य संस्था
48. अर्थशास्त्र या प्राचीन भारतीय ग्रंथात सुशासनाची तत्वे सांगितली आहेत. अर्थशास्त्राचा लेखक कोण?
 अ) रामचंद्रन ब) कौटिल्य
 क) मंडन मिश्र ड) कालिदास
49. स्वातंत्र्य, समता आणि बंधुता हा ---- राज्यक्रांतीचा नारा होता.
 अ) इंडोनेशियन ब) फ्रेंच
 क) अमेरिकन ड) रशियन
50. ---- हे अधिकार पारदर्शकता आणि उत्तरदायित्वाचे उदाहरण आहे.
 अ) माहितीचा ब) संपत्तीचा
 क) एकत्र येण्याचा ड) धार्मिक

- 9) In representative democracy the process of _____ links the government and the people.
- | | | |
|---------------|-----------------|--------------------------|
| a) corruption | b) dictatorship | <input type="checkbox"/> |
| c) election | d) economics | |
- 10) Direct democracy was started in _____ in 3rd century B.C.
- | | | |
|-----------|------------|--------------------------|
| a) India | b) England | <input type="checkbox"/> |
| c) Athens | d) U.S.A. | |
- 11) Which one of the following is the fundamental right in Indian constitution?
- | | | |
|-----------------------|--------------------|--------------------------|
| a) Right to Education | b) Right to Strike | <input type="checkbox"/> |
| c) Right to Property | d) Right to Revolt | |
- 12) _____ is miniature of the Parliament of India at the grassroots level.
- | | | |
|--------------|-------------------|--------------------------|
| a) Loksabha | b) Vidhanparishad | <input type="checkbox"/> |
| c) Gramsabha | d) Rajysabha | |
- 13) _____ is necessary for the good governance.
- | | | |
|-------------------------|------------------------|--------------------------|
| a) Centralization | b) Privatization | <input type="checkbox"/> |
| c) Public Participation | d) Riot Control Police | |
- 14) Indian voters directly elect the members of _____
- | | | |
|--------------------|------------------------|--------------------------|
| a) Rajysabha | b) Loksabha | <input type="checkbox"/> |
| c) Vidhan Parishad | d) Election Commission | |
- 15) The 73th and 74th constitutional amendments are related to the _____ government.
- | | | |
|------------|-------------|--------------------------|
| a) central | b) national | <input type="checkbox"/> |
| c) state | d) local | |
- 16) Democracy is also considered as the constitutional government which means government by _____ rather than by men.
- | | | |
|-----------------------------------|-------------|--------------------------|
| a) force | b) law | <input type="checkbox"/> |
| c) whims and fancies of the ruler | d) dictator | |
- 17) Public Accountability means the representative must remain _____ to the people
- | | | |
|---------------|------------------|--------------------------|
| a) opposite | b) irresponsible | <input type="checkbox"/> |
| c) answerable | d) all of these | |
- 18) Freedom, equality and fraternity are the core values of _____ democracy.
- | | | |
|-----------|------------|--------------------------|
| a) Old | b) Greek | <input type="checkbox"/> |
| c) Social | d) Foreign | |
- 19) The political process by which the administrative authority and responsibilities are transferred from central government to the local government is known as _____
- | | |
|---------------------|--------------------------|
| a) Decentralization | <input type="checkbox"/> |
| b) Centralization | |
| c) Dictatorship | |
| d) Interference | |
- 20) Criminalization of politics is the basic _____ before the democracy in India.
- | | | |
|------------------|--------------|--------------------------|
| a) need | b) challenge | <input type="checkbox"/> |
| c) qualification | d) boon | |

- 21) The opportunities for political participation are minimal to _____ in India
a) women b) leaders
c) rich people d) none of these
- 22) Lok Sabha has _____ members which are directly elected by the people.
a) 555 b) 250
c) 288 d) 543
- 23) Solapur city comes under the jurisdiction of _____.
a) Municipal Corporation b) Village Panchayat
c) Municipal Council d) Panchayat Samiti
- 24) In the local governments of India one third of the seats are reserved for _____.
a) women b) fisher folks
c) migrated workers d) construction workers
- 25) There are _____ elected members in Maharashtra Vidhansabha.
a) 75 b) 200
c) 288 d) 388
- 26) There are _____ tiers of Indian government.
a) Four b) Three
c) Two d) Five
- 27) The principles of accountability and transparency are related to the _____.
a) bad governance b) old governance
c) mobocracy d) good governance
- 28) Indians can seek information from _____ under the Right to Information Act.
a) private companies b) government officials
c) multinational companies d) all of these
- 29) The Right to Education makes it mandatory for the state to ensure that all children of the _____ age group enroll themselves in schools.
a) 6 to 14 b) 1 to 5
c) 15 to 20 d) none of these
- 30) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is one step towards implementing the provision of _____.
a) Right to Information b) Right to Education
c) Right to Work d) Right to Liberty
- 31) The members of Maharashtra _____ are directly elected by the people.
a) Vidhansabha b) Rajyasabha
c) Vidhan Parishad d) Gramsabha
- 32) _____ is the example of rural local self government.
a) Village Panchayat b) Panchayat Samiti
c) Zilla Parishad d) All of these
- 33) Gram Sabha comprised of _____ in the village.
a) all the registered voters b) all the people
c) only male voters d) only female voters

- 34)** _____ by all the members of society is the basic feature of good governance.
- | | | |
|--------------------------|--------------------------|--------------------------|
| a) Unequal participation | b) violent participation | <input type="checkbox"/> |
| c) Equal participation | d) none of these | |
- 35)** The Right to Information was passed in India in the year _____.
- | | | |
|---------|---------|--------------------------|
| a) 2005 | b) 1947 | <input type="checkbox"/> |
| c) 1950 | d) 2020 | |
- 36)** Which of the following is not the fundamental right?
- | | |
|---------------------------------|--------------------------|
| a) Right to Freedom | <input type="checkbox"/> |
| b) Right to Property | |
| c) Right to Equality | |
| d) Right to Freedom of Religion | |
- 37)** According to _____ Democracy is government of the people, by the people and for the people
- | | | |
|------------------|-------------------|--------------------------|
| a) John Wood | b) Abraham Lincon | <input type="checkbox"/> |
| c) Mother Teresa | d) Donald Trump | |
- 38)** In _____ democracy, citizens participated in the affairs of the state directly and had a say in the governance of the city state
- | | | |
|-------------|------------------|--------------------------|
| a) Indirect | b) Direct | <input type="checkbox"/> |
| c) Indian | d) none of these | |
- 39)** The word democracy is derived from the Greek words Demos and Kratos. The meaning of Demos is _____ and Kratos means _____.
- | | | |
|--------------------|-------------------|--------------------------|
| a) people and rule | b) animal and God | <input type="checkbox"/> |
| c) God and Saints | d) none of these | |
- 40)** A system of welfare and redistribution aimed to narrow social inequalities is called _____.
- | | | |
|----------------|----------------|--------------------------|
| a) Bureaucracy | b) Aristocracy | <input type="checkbox"/> |
| c) Democracy | d) Technocracy | |
- 41)** Direct democracy is also known as _____ democracy.
- | | | |
|------------------|-------------------|--------------------------|
| a) Participatory | b) Representative | <input type="checkbox"/> |
| c) New | d) Negative | |
- 42)** In democracy all issues in legislature, cabinet, executive and other committees are resolved through the principle of _____.
- | | | |
|------------------|------------------|--------------------------|
| a) minority rule | b) majority rule | <input type="checkbox"/> |
| c) leadership | d) dictatorship | |
- 43)** Dr. Babasaheb Ambedkar strongly advocated _____ democracy.
- | | | |
|------------|-----------|--------------------------|
| a) Direct | b) Social | <input type="checkbox"/> |
| c) Ancient | d) Modern | |
- 44)** The Mahatma Gandhi National Rural Employment Guarantee Act is the example of the largest _____ scheme of its kind in the world.
- | | | |
|--------------|-------------------|--------------------------|
| a) political | b) social welfare | <input type="checkbox"/> |
| c) populist | d) election | |
- 45)** Which among the following is not the principle of democracy?
- | | | |
|--------------------------|--------------------------|--------------------------|
| a) Government by consent | b) Public Accountability | <input type="checkbox"/> |
| c) Rule of Law | d) Dictatorship | |

46) The free and fair elections were conducted, at regular interval, in India except in _____.

- a) 2014
- b) 1976
- c) 1967
- d) 2000

47) Balwantrai Mehta and Ashok Mehta committee are related to _____ in India.

- a) G.S.T.
- b) Parliament
- c) State Governments
- d) Panchayati Raj institutions

48) The ancient Indian book Arthshastra highlighted the principle of Good Governace. Who is the author of Arthshashtra?

- a) Ramchandran
- b) Kautilya
- c) Mandan Mishr
- d) Kalidas

49) "Freedom, Equality and Fraternity" was the battlecry of the _____ revolution.

- a) Indonesian
- b) French
- c) American
- d) Russian

50) The Right to _____ is the example of transparency and accountability.

- a) Information
- b) Property
- c) Assembly
- d) Religion

- प्र.2 खालीलपैकी कोणत्याही चार प्रश्नांची थोडक्यात उत्तरे लिहा. 08
- अ) पर्यावरण अभ्यासाची व्याख्या लिहा.
ब) वाळवंटी परिसंस्थेतील जैविक घटक
क) नैसर्गिक साधनसंपत्तीचे प्रकार लिहा.
ड) जैवविविधता संवर्धनाचे प्रकार लिहा.
इ) वायु प्रदूषणाचे कारणे लिहा.
ई) ओझोन क्षयाची कारणे लिहा.
- प्र.3 खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा. 08
- अ) पर्यावरण अभ्यासाचे महत्त्व लिहा.
ब) परिसंस्थेतील ऊर्जाप्रवाह
क) पूराची कारणे लिहा.
- प्र.4 खालीलपैकी कोणत्याही दोन प्रश्नांची उत्तरे लिहा. 08
- अ) जल प्रदूषणाची कारणे व परिणाम स्पष्ट करा.
ब) जैवविविधता म्हणजे काय? जैवविविधता प्रकाराचे वर्णन स्पष्ट करा.
क) वन्यजीव संरक्षण कायदा स्पष्ट करा.
- प्र.5 खालीलपैकी कोणत्याही एका प्रश्नाचे उत्तर लिहा. 08
- पर्यावरण अभ्यासाचे स्वरूप व व्याप्ती स्पष्ट करा.
किंवा
लोकसंख्या वाढीचा पर्यावरणावर होणारा परिणाम स्पष्ट करा.

Seat No.	
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**B.C.A. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2022
Environmental Studies**

Day & Date: Sunday, 12-02-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternatives from the options. 08

- 1) The word 'Environment' is derived from _____ language.
 - a) French
 - b) Roman
 - c) Latin
 - d) Greek
- 2) First World Environmental conference was held at _____.
 - a) Mumbai
 - b) Stockholm
 - c) London
 - d) Tokyo
- 3) Sahara is a example of _____ ecosystem.
 - a) Marine
 - b) Glassland
 - c) Forest
 - d) Desert
- 4) The primary source of energy is _____.
 - a) Hydal energy
 - b) Tidals
 - c) Sun
 - d) Wind
- 5) The 'Wildlife Protection Act' was passed in the year _____ in India.
 - a) 1971
 - b) 1972
 - c) 1974
 - d) 1976
- 6) Marine life is in danger due to _____ Pollution.
 - a) Land
 - b) Air
 - c) Water
 - d) Noise
- 7) In India _____ region is rich in biodiversity.
 - a) Western Himalaya – Aravali
 - b) Ajantha – Aravali
 - c) Eastern Himalaya -Western Ghat
 - d) Eastern Ghat – Koromandal
- 8) International Ozone Day is celebrated on _____ day.
 - a) 16th June
 - b) 16th July
 - c) 16th August
 - d) 16th September

Q.2 Attempt any four of the following questions. 08

- 1) Write a definition of environmental studies.
- 2) Biological components of desert ecosystems.
- 3) Write the types of natural resources.
- 4) Write the types of biodiversity conservation.
- 5) write the causes of air pollution.
- 6) Write the causes of ozone depletion.

- Q.3 Attempt any two of the following questions. 08**
- 1) Write the importance of environmental studies.
 - 2) Energy flow in the ecosystem
 - 3) Write down the reasons for the flood.
- Q.4 Attempt any two of the following questions. 08**
- 1) Explain the causes and effects of water pollution.
 - 2) What is biodiversity? Explain the type of biodiversity.
 - 3) Explain the Wildlife Conservation Act.
- Q.5 Attempt any one of the following questions. 08**
- 1) Explain the nature and scope of environmental studies.
 - 2) Explain the impact of population growth on the environment.