

- Q.3** a) Write a note of the model of communication process. **10**
- OR**
- b) What are the probable reasons of communication breakdown?
- Q.4** What is intrapersonal communication? How to improve to it? **10**

- Q.3 Write notes on any two of the following. 08**
- a) Bar code reader
 - b) Internet
 - c) Laser printer
- Q.4 Answer any Two of the following. 08**
- a) Explain types of scanner.
 - b) Short note on light pen.
 - c) What is search engine? Explain popular search engines.
- Q.5 Answer any one of the following. 08**
- a) What is semiconductor memory? Explain different types of semiconductor memories.
 - b) Explain different types of computers.

Seat No.	
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**B.C.A. (Semester – I) (New) (CBCS) Examination: March/April-2023
Office Automation (Paper – II) (BCA1103)**

Day & Date: Thursday, 20-07-2023
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) Why headers and footers used in MS –Word _____.
 - a) to enhance the overall appearance of the document
 - b) to mark the starting of a page
 - c) to make large document more readable
 - d) to allow page headers and footers to appear on document when it is
- 2) Which of the following line spacing is invalid?
 - a) Multiple
 - b) Double
 - c) Triple
 - d) Signal
- 3) How can you apply exactly the same formatting you did to another text?
 - a) copy the text and click on paste special tool on new place
 - b) select the text then click on format painter and select the new text
 - c) Copy the text and paste in new location. then type the new text again
 - d) all of above
- 4) What is the extension of Word files?
 - a) .dot
 - b) .txt
 - c) .fil
 - d) .doc
- 5) The Software which contains rows and columns is called _____.
 - a) database
 - b) drawing
 - c) spreadsheet
 - d) word processing
- 6) The slide that is used to introduce a topic and set the tone for the presentation is called the _____.
 - a) Title slide
 - b) Bullet slide
 - c) Table slide
 - d) Graph slide
- 7) Where can you set the shading color for a range of cells in Excel?
 - a) choose required color form patterns tab of format cells dialog box
 - b) choose required color on fill color tool in formatting toolbar
 - c) choose required color on fill color tool in drawing toolbar
 - d) all of above
- 8) Objects on the slide that hold text are called _____.
 - a) Placeholders
 - b) Object holders
 - c) Auto layout
 - d) Text holders

- Q.2 Answer any four of the following.** **08**
- a) What are the basic functions of MS Word?
 - b) What are Desktop icons and their functions?
 - c) How you can create a custom watermark?
 - d) Define Hardware & Software.
 - e) What the keyboard combination is for cut and paste operation?
 - f) What is the use of PowerPoint presentation?
- Q.3 Write short notes on any two of the following** **08**
- a) MS Access
 - b) Formatting Document in MS Word
 - c) Mail Merge
- Q.4 Answer any Two of the following.** **08**
- a) How to create a Macro in word.
 - b) What are the Features of MS Excel?
 - c) How you can embed a chart from Excel to PowerPoint?
- Q.5 Answer any one of the following.** **08**
- a) Explain Characteristics of Computer.
 - b) How we can Formatting a Presentation on different ways.

Q.2 Answer any four of the following. 08

- a) What is flowchart?
- b) Two characteristics of algorithm?
- c) What is logic?
- d) Syntax of do- while loop?
- e) What is multidimensional array?
- f) use of stdio.h header file?

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

- a) conditional operator.
- b) typed and enum.
- c) goto statement.

Q.4 Answer any Two of the following. 08

- a) Write C program to find the average of n numbers using arrays.
- b) Difference between while and do-while loop.
- c) Write C program to print following structure.

```
      1
     2 3 2
    3 4 5 4 3
   4 5 6 7 6 5 4
```

Q.5 Answer any one of the following. 08

- a) What is nested if-else? Explain nested if-else with example.
- b) What is operator? Explain different operators used in c with example.

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**B.C.A. (Semester – I) (New) (CBCS) Examination: March/April-2023
Web Programming - I (Paper – II) (BCA1105)**

Day & Date: Saturday, 22-07-2023
Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions:

08

- 1) HTML is _____ type of the language.
 - a) Scripting Language
 - b) Markup Language
 - c) Programming Language
 - d) Network Protocol
- 2) The BODY tag is usually used after _____ tag.
 - a) HTML tag
 - b) TABLE tag
 - c) HEAD tag
 - d) TITLE tag
- 3) <a> and are the tags used for _____.
 - a) Adding image
 - b) Aligning text
 - c) Audio-voiced text
 - d) Adding links to your page
- 4) Which of the following is a component of CSS style rule?
 - a) Selector
 - b) Property
 - c) Value
 - d) All of the above
- 5) The default character encoding in HTML5 is _____.
 - a) UTF-16
 - b) UTF-32
 - c) UTF-8
 - d) ISO-8859-1
- 6) Which of the following property is used to change the face of a font?
 - a) font-family
 - b) font-style
 - c) font-variant
 - d) font-weight
- 7) _____ is used to add graphics in HTML5?
 - a) svg
 - b) graphics
 - c) Video
 - d) none of these
- 8) Which attribute can be used with BODY tag to set background image?
 - a) Background
 - b) Bgcolor
 - c) Vlink
 - d) None of Above

Q.2 Answer any four of the following.

08

- a) Define the term Web technology?
- b) What is mean by Internet?
- c) Explain DOCTYPE element in HTML5
- d) Explain the Uses of CSS?
- e) Explain Get and Post method.
- f) What is mean by User Interface

- Q.3 Write short notes on any two of the following.** **08**
- a) Animations in CSS
 - b) Graphics in HTML5
 - c) Image tag in HTML
- Q.4 Answer any Two of the following.** **08**
- a) What is mean by tag? Explain types of tag with example
 - b) Explain box model with example in CSS.
 - c) List out Input tag in HTML5? Explain Auto focus and placeholder with example
- Q.5 Answer any one of the following.** **08**
- a) What is mean by CSS? Explain types of CSS with Example.
 - b) What is Table? Explain <TABLE> tag with Example in HTML.

Seat
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B.C.A. (Semester - I) (New) (CBCS) Examination: March/April-2023
Basics of Mathematics (Paper – I) (BCA1106)

Day & Date: Sunday, 23-07-2023
 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) Use of scientific calculator is allowed.

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

- 1) If aRb & $bRa \Rightarrow a = b$ then the relation R is called _____.
 a) Reflexive relation b) Symmetric relation
 c) Antisymmetric relation d) A Symmetric relation
- 2) The cardinality of an empty set is _____.
 a) ϕ b) 1
 c) 0 d) 10
- 3) Warshall's algorithm is used to find _____.
 a) Transitive closure b) Closure
 c) Inverse d) None of these
- 4) The conditional statement $\sim p \rightarrow \sim q$ is called as _____ conditional statement $p \rightarrow q$
 a) Inverse b) Converse
 c) Implication d) Contrapositive
- 5) If $A = [a_{ij}]_{m \times n}$ & $B = [b_{ij}]_{n \times p}$ be the two matrices then order of result of product matrix $A.B$ is _____.
 a) $m \times n$ b) $n \times p$
 c) $p \times m$ d) $m \times p$
- 6) The order of row matrix is _____.
 a) $m \times 1$ b) $1 \times n$
 c) $m \times n$ d) $n \times n$
- 7) In logic $\sim(p \cap q) \equiv \sim p \vee \sim q$ is _____ law.
 a) Distributive b) De – Morgan's
 c) Commutative d) None of these
- 8) Let $A = \{1, 2, 3, 4\}$ & $B = \{3, 4, 5, 6\}$ then $A \cup B =$ _____.
 a) $\{1, 2, 3, 4, 5\}$ b) $\{1, 2, 3, 4, 5, 6\}$
 c) $\{1, 3\}$ d) $\{3, 4\}$

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

- a) Define Equivalence relation.
- b) State De -Morgan's law in logic.
- c) Let $A = \{1, 2, 3\}$ then write $P(A)$
- d) Let $A = \{a, b, c, d\}$ & $B = \{p, q, r\}$ then find the Cartesian product $A \times B$ & $B \times A$

- e) Let $A = \{a, b, c, d\}$. let ' R ' be the relation defined on the set A given by $R = \{(a, a) (a, b) (a, c) (a, d) (b, a) (c, b) (c, c) (d, d)\}$. Draw diagram of relation R .
- f) Let $A = \begin{bmatrix} -1 & 3 \\ 4 & 5 \end{bmatrix}_{2 \times 2}$ & $B = \begin{bmatrix} 3 & -2 \\ 0 & 1 \end{bmatrix}_{2 \times 2}$ then find matrix $A + B$ & $A - B$

Q.3 Answer any two of the following questions.

08

- a) Define conditional statement. Also define types of conditional statement.
- b) Let $U = \{a, b, c, d, e, f, g, h, i, j, k\}$ be the universal set.
Let $A = \{b, c, e, g, h, i\}$ & $B = \{a, b, c, d, i, j, k\}$ be the subsets of U then write the following sets.
i) $A \cup B$
ii) $A \cap B$
iii) $A - B$
iv) B'
- c) Define the following term with suitable example:
i) Square matrix
ii) Upper triangular matrix

Q.4 Answer any two of the following questions.

08

- a) Check whether the following statement is a tautology or contradiction or neither.
 $[(\sim \rightarrow r) \wedge (q \vee r)] \rightarrow \sim r$
- b) Let $A = \{a, b, c, d\}$ let ' R ' be the relation defined on the set A given by $R = \{(a, a) (a, b) (b, a) (b, b) (c, a) (c, d) (d, a) (d, b) (d, d)\}$. Write matrix of R . Also draw diagram of R . Also write in-degree & outdegree of each element in A .
- c) How many integers between 1 & 567 are divisible by either 3 or 5.

Q.5 Answer any one of the following questions.

08

- a) State & prove both the distributive law in logic.
- b) Define transitive closure of relation. Let $A = \{1, 2, 3, 4\}$ & ' R ' be the relation defined on the set A given by $R = \{(1,1) (1,2) (2,3) (3,4) (3,3) (4,1)\}$. Find transitive closure of relation R by using Warshall's algorithm. Also draw diagram of R^*

- Q.2 Answer any four of the following. 08**
- a) Define measures of central tendency with example.
 - b) Define Range with example.
 - c) Define correlation with example.
 - d) Define variance and standard deviation.
 - e) Define Regression with example.
 - f) Define sample with example
- Q.3 Write Short notes on any two of the following. 08**
- a) Define A. M. Write its merits and demerits.
 - b) Write short notes on Stratified sampling with example.
 - c) Write difference between absolute and relative measures of dispersion.
- Q.4 Answer any two of the following. 08**
- a) Discuss the effect of change of origin and scale on regression coefficients.
 - b) Explain the construction of Histogram with equal and unequal width.
 - c) Define Median. Write its merits and demerits.
- Q.5 Answer any one of the following. 08**
- a) Define correlation. Using scatter diagram explain various types of correlation with Examples.
 - b) Define Regression. Drive the expressions for regression line of X on Y.

Seat
No.

**B.C.A (Semester - I) (New) (CBCS) Examination: March/April-2023
Fundamentals of Electronics (Paper - I) (BCA1108)**

Day & Date: Tuesday, 25-07-2023
Time: 09:00 AM To 11:00 AM

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 Multiple choice questions.**08**

- 1) _____ technique is used to etch away all the unrequired Aluminum.
 - a) Photoresist
 - b) oxidation
 - c) Diffusion
 - d) Polishing
- 2) _____ consumes less power.
 - a) incandescent lamp
 - b) fluorescent tube
 - c) LCD
 - d) LED
- 3) The inter connections are made during _____ process.
 - a) emitter diffusion
 - b) photolithography
 - c) epitaxial growth
 - d) metallization
- 4) The number of pixel stored in the frame buffer of a display system is known as _____.
 - a) depth
 - b) resolution
 - c) resaultion
 - d) none of above
- 5) The LED emits light _____.
 - a) only in red color
 - b) only in green color
 - c) only in yellow color
 - d) in red, green yellow and amber color
- 6) Selective etching is done using _____ process.
 - a) photolithography
 - b) metallization
 - c) diffusion
 - d) masking
- 7) The components placed on the PCB are soldered on _____.
 - a) Traces
 - b) planes
 - c) metal pads
 - d) Regions
- 8) _____ protects the wafer from contamination due to impurities.
 - a) SiO₂ layer
 - b) masks
 - c) photo resist layer
 - d) diffusion

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

- a) Define linear and digital ICs.
- b) What is PCB design?
- c) What are advantages of ICs?
- d) Why aluminum is preferred for metallization?
- e) What is LED?
- f) What do you mean by monolithic ICs?

- Q.3 Write short notes on any two of the following.** **08**
- a) Write a note on LED display. (construction, working)
 - b) Write a note on SMD and SMT.
 - c) Write a note on metallization.
- Q.4 Answer any Two of the following.** **08**
- a) Explain with neat diagram isolation and diffusion process in IC fabrication.
 - b) Explain single layer and multi-layer PCB technology.
 - c) State applications of LCD display.
- Q.5 Answer any one of the following.** **08**
- a) What are steps of IC fabrication process? Explain epitaxial growth and photolithographic process with neat diagrams.
 - b) What are types of 7 segment display? Draw neat diagrams and explain their working.

- Q.3 Answer any two of the following. 08**
- a) Explain construction and Working of N-P-N transistor.
 - b) Explain full wave rectifier.
 - c) Explain mica and ceramic resistor.
- Q.4 Answer any two of the following. 08**
- a) Explain the construction variable resistor.
 - b) Explain Materials on the basis of energy band diagram.
 - c) Define inductance and explain its types.
- Q.5 Answer any one of the following. 08**
- a) Define regulated power supply. Explain SMPS.
 - b) Define semiconductor. Explain p and n-type semiconductor.

Seat No.	
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B.C.A. (Semester – I) (Old) (CBCS) Examination: March/April-2023
ENGLISH (COMPULSORY)
Literary Voyage (19409101 / 20409101)

Day & Date: Tuesday, 18-07-2023
 Time: 09:00 AM To 12:00 PM

Max. Marks: 80

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

- Q.1 A) Choose the correct alternatives from the given options. 10**
- 1) What percentage of the population in India was poverty stricken at the time of the essay?

a) one - third	b) one - fourth
c) one - tenth	d) one - sixth
 - 2) What is the name of the river island where Payeng began his work?

a) Miling	b) Mishing
c) Malang	d) None of these
 - 3) The school was attached to _____.

a) a hospital and the nurses taught them
b) a public library and the librarian taught them
c) a bigger school and the teachers there taught them
d) a temple and the priest of the temple taught them
 - 4) The poet is in _____ state of mind when he wrote this poem "Let Me Not pray to be sheltered from Dangers"

a) a doubtful	b) a horrid
c) a dangerous	d) a confident
 - 5) The conflict for the honour of _____ between rose and lily.

a) as the king of flowers	b) the queen of nature
c) the queen of flowers	d) the stateliest flower
 - 6) The boy in the poem "The Toys" is _____.

a) the speaker of the poem	b) a motherless child
c) on adamant child	d) a naughty little fellow
 - 7) The last component of any successful communication is _____.

a) Receiving	b) Decoding
c) Acknowledging	d) Feedback
 - 8) Which of the following is a communication channel?

a) Mobile technology	b) Zoom conferencing
c) Courier service	d) All the above
 - 9) Please wait _____ me _____ the bus stop.
 (Use appropriate preposition to complete the sentence)

a) for, in	b) for, at
c) for, with	d) at, for

- 10) Green team ways _____ (numbered) by Blue team [use suitable prefixes with the words]
- | | |
|----------------|----------------------|
| a) unnumbered | b) out numbered |
| c) disnumbered | d) none of the Above |

B) Answer the following questions in one sentence. 06

- 1) What is the relation between economics and religion in the essay 'The Birth of Khadi'?
- 2) In which year, Jadav Payeng got the country's highest civilian award 'Padma shri'?
- 3) What did the grandmother desire to do on her deathbed?
- 4) In which year Tagore's ground breaking work 'Gitanjali' was published?
- 5) Who sung praises for the flowers in the poem 'The Lotus'?
- 6) What kind of coins did the father discover?

Q.2 Answer the following questions in brief 30-40 words. (8 out of 12) 16

- 1) What is the importance of khadi in the context of the freedom struggle?
- 2) How is environmental conservation crucial for the future?
- 3) Draw, a character sketch of 'grandmother' in the essay 'The portrait of a Lady'?
- 4) Discuss the poet's state of mind in the poem. 'Let Me Not pray to be sheltered from Dangers'?
- 5) Write down the summary of poem "The Lotus".
- 6) What is the significance of the toys in the poem?
- 7) Explain Gandhi's talk on religion.
- 8) Draw a character sketch of Jadav Payeng and his grand work.
- 9) What is the significance of sparrows in the story "The Portrait of a Lady"?
- 10) Write a note on the principles of effective communication.
- 11) What is communication? Explain.
- 12) Explain the soft skill 'Intrapersonal skill'

Q.3 A) Write down the answer of any two of the following. 10

- 1) How is untouchability related to the essay "The Birth of Khadi"?
- 2) What were some of the problems faced by Jadav?
- 3) What is the significance of the sparrows?

B) Write short notes 06

Write down the summary 'The Toys'.

Q.4 A) Write down the answers of any two of the following. 08

- 1) What is the receiver's role in the process of communication.
- 2) What are the barriers of communication breakdown?
- 3) Explain the concept of 'Intrapersonal skills'.

B) Prepare a narrative essay on your first day experience of college. 08

Q.5 Write down the answers of any two of the following. 16

- a) Prepare a descriptive essay on a Local Park.
- b) How would you improve your communication and make it effective?
- c) What is 'message' in a communication process?

Seat No.	
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**B.C.A. (Semester - I) (Old) (CBCS) Examination: March/April-2023
Fundamentals of Computer (Paper - I) (19409102)**

Day & Date: Wednesday, 19-07-2023
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 correct alternative from the following. 08

- 1) _____ device is used in first generation.
 - a) IC
 - b) VLSI
 - c) ALSI
 - d) Vacuum tube
- 2) Which of the following is a scanning technology?
 - a) OCR
 - b) OMR
 - c) BCR
 - d) All of these
- 3) _____ is output device designed to get hard copy output.
 - a) LCD
 - b) Monitor
 - c) Printer
 - d) CRT
- 4) RAM is a _____ memory.
 - a) External
 - b) Auxiliary
 - c) Main
 - d) None of these
- 5) In MICR commonly used font is _____.
 - a) F13D
 - b) E13D
 - c) E13B
 - d) F13B
- 6) A computer _____ is a malicious code which self-replicates by copying itself to other programs.
 - a) Program
 - b) Virus
 - c) Application
 - d) Worm
- 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 any four of the following. 08

- 1) Define serial port and parallel port.
- 2) Define protocol. List any two protocols.
- 3) What is Firmware?
- 4) What is modem?
- 5) What is a volatile and non-volatile memory?
- 6) Define serial port and parallel port.

- Q.3 Write short notes on any two of the following. 08**
- 1) Internet
 - 2) RAM
 - 3) Magnetic tape
- Q.4 Answer any Two of the following. 08**
- 1) What is software? Explain different types of system software.
 - 2) Explain types of network.
 - 3) What is pointing Device? Explain the types of mouse.
- Q.5 Answer any one of the following. 08**
- 1) What is computer? Explain block diagram of computer.
 - 2) Define the term network topology? Explain different types of network topology.

Seat
No.

**B.C.A. (Semester – I) (Old) (CBCS) Examination: March/April-2023
Logic Development With 'C' Programming (Paper – II) (19409103)**

Day & Date: Thursday, 20-07-2023
Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions:**08**

- 1) Which is an incorrect variable name?
 - a) Id_No
 - b) ID_NO
 - c) IdNo
 - d) Id No
- 2) A 'C' program is a combination of _____.
 - a) function
 - b) variables
 - c) statements
 - d) all of these
- 3) _____ is a symbol used connects two symbols of flowchart.
 - a) Circle
 - b) Rectangle
 - c) Diamond
 - d) Arrow
- 4) 'C' language is _____ type of Programming Language?
 - a) Object Oriented
 - b) Procedural
 - c) Bit Level Language
 - d) Functinal
- 5) Choose Correct Conditional Operator from the list.
 - a) ? :
 - b) : <
 - c) : ?
 - d) < :
- 6) Choose a right 'C' Statement.
 - a) Loops executes a group of statements repeatedly
 - b) Loop is usually executed as long as a condition is met
 - c) Loop usually take advantage of loop counter
 - d) All of these
- 7) An array elements are always stored in _____ memory locations.
 - a) Sequential
 - b) Random
 - c) Both a & b
 - d) None of these
- 8) Which among the following is a unconditional control structure?
 - a) do-while
 - b) if –else
 - c) goto
 - d) for

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

- a) State the syntax of while statement.
- b) State any four Data Types in C language.
- c) Define algorithm.
- d) What are the purposes of goto statement?
- e) What is One-dimensional array?
- f) What is the difference between pre-increment and post-increment?

- Q.3 Write short notes on any two of the following** **08**
- a) Pseudo code
 - b) do-while loop
 - c) Two dimensional array
- Q.4 Answer any Two of the following.** **08**
- a) Write a program to display number is even or odd.
 - b) Write a program that checks entered number is palindrome or not using.
 - c) Explain structure of "C" program.
- Q.5 Answer any one of the following.** **08**
- a) What is Flow Chart? Explain all flow chart symbols.
 - b) Write an algorithm and draw flowchart to check entered number is Armstrong or not.

Seat No.	
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B.C.A. (Semester - I) (Old) (CBCS) Examination: March/April-2023
Basics of Web Programming - I (Paper – I) (19409104)

Day & Date: Friday, 21-07-2023
 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 alternative from the following options. 08

- 1) Who is inventor of HTML?

a) Tim Burners Lee	b) Sir Thomas
c) Charles Babbage	d) none of these
- 2) HTML stands for _____.
 - a) High Text Machine Language
 - b) Hyper and links Markup Language
 - c) Hyper Text Markup Language
 - d) None of these
- 3) WWW stands for _____.

a) Wide Web World	b) World Wide Web
c) World Write Web	d) West Web Wide
- 4) All HTML tags are enclosed in _____.

a) # and #	b) <and>
c) ? and?	d) {and}
- 5) Choose the correct HTML tag for the smallest heading.

a) h6	b) h1
c) h5	d) h2
- 6) _____ is the root of internet.

a) ARPANET	b) APRANET
c) ARPNET	d) None of these
- 7) Which of the following is a singular tag?

a) 	b) <u>
c) <i>	d)
- 8) Which of the following CSS property sets the font size of text?

a) font-size	b) text-size
c) Text	d) Size

Q.2 Answer any four of the following. 08

- a) What is singular tag?
- b) What is paired tag?
- c) What is opacity?
- d) List the different styles of border in CSS.
- e) What is class and id selector?
- f) What is floating?

- Q.3 Write short notes on any two of the following.** **08**
- a) Internet
 - b) Image map
 - c) Structure of HTML
- Q.4 Answer any Two of the following.** **08**
- a) What are the uses of CSS?
 - b) Explain background properties with example.
 - c) What are the needs of HTML 5?
- Q.5 Answer any one of the following.** **08**
- a) Explain table tag with example in HTML.
 - b) What are different lists in HTML? Explain with example using HTML and CSS.

Seat No.	
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**B.C.A. (Semester - I) (Old) (CBCS) Examination: March/April-2023
Software Engineering - I (Paper – II) (19409105)**

Day & Date: Saturday, 22-07-2023
Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions.**08**

- 1) Spiral model originally proposed by _____.
 - a) Boehm
 - b) Winston
 - c) Royce
 - d) Dexter
- 2) The _____ model stipulates that the requirements be completely specified before the rest of the development can processed.
 - a) Waterfall
 - b) Rapid Application Development (RAD)
 - c) v-model
 - d) Incremental Development
- 3) _____ classes are used to create the interface that the user sees and interacts with as the software is used.
 - a) Controller
 - b) Entity
 - c) Boundary
 - d) Business
- 4) Which one of the following fact-finding techniques is most useful in collecting quantitative data?
 - a) Interviews
 - b) Record reviews
 - c) Questionnaires
 - d) Observations
- 5) The importance of software design can be summarized in a single word which is:
 - a) Efficiency
 - b) Accuracy
 - c) Quality
 - d) Complexity
- 6) What are the characteristics of software?
 - a) Software is developed or engineered; it is not manufactured in the classical sense
 - b) Software doesn't "wear out"
 - c) Software can be custom built or custom build
 - d) All mentioned above
- 7) What are attributes of good software?
 - a) Software maintainability
 - b) Software functionality
 - c) Software development
 - d) a and b
- 8) Which of the following is/are considered stakeholder in the software process?
 - a) Customers
 - b) End-users
 - c) Project managers
 - d) All of the above

- Q.2 Answer any four of the following. 08**
- a) What is System?
 - b) Define software engineering?
 - c) What are the elements of System?
 - d) What is System Analysis?
 - e) Why do you need fact finding technique?
 - f) State any 2 differences between interview and questionnaire.
- Q.3 Write short notes on any two of the following. 08**
- a) Spiral model
 - b) Qualities of software.
 - c) Role of System Analyst.
- Q.4 Answer any Two of the following. 08**
- a) Explain RAD model in detail.
 - b) Explain the various types of system in detail.
 - c) Explain Prototyping model in detail.
- Q.5 Answer any one of the following. 08**
- a) Explain different phases of System Development Life Cycle.
 - b) Explain the different fact finding techniques.

Seat
No.

B.C.A. (Semester - I) (Old) (CBCS) Examination: March/April-2023
Basics of Mathematics - I (Paper – I) (19409106)

Day & Date: Sunday, 23-07-2023
 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) Use of scientific calculator is allowed.

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

- 1) The conditional statement $\sim P \rightarrow \sim q$ is called as _____ conditional statement.

a) Inverse	b) Converse
c) Implication	d) Contrapositive
- 2) Cardinality of an empty set is _____.

a) ϕ	b) 1
c) 0	d) 10
- 3) If aRb & $bRa \Rightarrow a = b$ then the relation R is called _____.

a) Reflexive	b) Symmetric
c) Asymmetric	d) Antisymmetric
- 4) The transpose of matrix i.e. $(A^T)^T =$ _____.

a) A^T	b) A
c) A^2	d) None of these
- 5) If A & B are the subsets of universal set U then $(A \cup B)' =$ _____.

a) $A' \cup B'$	b) $A \cap B$
c) $A' \cap B'$	d) $A \cup B$
- 6) If all the entries of given statement pattern are 'T' then it is called as _____.

a) Contradiction	b) Tautology
c) Contrapositive	d) Contingency
- 7) In a skew-symmetric matrix diagonal element are always _____.

a) 1	b) 0
c) 2	d) None of these
- 8) If every element of set A is related to every element of set B then relation is called as _____.

a) Identity relation	b) Inverse relation
c) Universal relation	d) Transitive relation

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

- a) State De Morgan's law in logic.
- b) Define Equivalence relation.
- c) Let $A = \{1,2,3\}$ then write power set of the set A.
- d) Define row matrix. Give one example.
- e) Define cartesian product.
- f) Define complement of set A.

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

- a) Define conditional statement. Also define types of conditional statement.
- b) Let $A = \{1, 2, 3, 4\}$. Let R be the relation defined on set A by aRb iff $a \leq b$ for all $a, b, \in A$. Then write relation R , write $M(R)$ also draw digraph of R .
- c) Define the following term with suitable example:
 - i) Square matrix
 - ii) Upper triangular matrix

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

- a) Check whether the following statement is a tautology or contradiction or neither.

$$[(\sim \rightarrow r) \wedge (q \vee r)] \rightarrow \sim r$$
- b) Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ Let $A = \{1, 4, 5, 6, 10\}$ $B = \{1, 2, 4, 3, 9\}$ be the subsets of U then write the following sets.
 - i) $A \cup B$
 - ii) $A \cap B$
 - iii) A'
 - iv) $A - B$
- c) Let $A = \begin{bmatrix} 10 & 6 \\ -4 & -9 \end{bmatrix}_{2 \times 2}$ $B = \begin{bmatrix} -3 & 10 \\ 12 & -7 \end{bmatrix}$ then find $A + B$ & $A - B$

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

- a) State & prove both the distributive law in logic.
- b) Define transitive closure. Hence by using Warshall's algorithm find transitive closure of relation
 $R = \{(a, a), (a, b), (b, a), (b, c), (c, d), (d, a), (d, b)\}$ defined on set $A = \{a, b, c, d\}$

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

08

- Types of correlation.
- Construction of ogives.
- Properties of regression coefficient.

Q.4 Answer any Two of the following.

08

- a) Find A.M. of the data given below.

Class	7-14	14-21	21-28	28-35	35-42
frequency	5	11	14	9	4

- b) Find correlation coefficient between X and Y from the following data.

X	12	14	18	10	20
Y	9	11	12	13	10

- c) Given: $r_{xy} = 0.5$, $\sigma_x^2 = 16$, $\sigma_y^2 = 49$, $\bar{X} = 30$, $\bar{Y} = 25$
Find equation of line of regression y on x.

Q.5 Answer any one of the following.

08

- a) Draw less than and greater than ogives to represent the following data and hence obtain median.

Class	10-20	20-30	30-40	40-50	50-60	60-70
frequency	9	14	17	12	10	4

- b) Find c.v. for the following data

X	10	11	12	14	16
f	5	7	11	8	4

Seat No.	
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Set **P**

B.C.A (Semester - I) (Old) (CBCS) Examination: March/April-2023
Digital Electronics (Paper - I) (19409108)

Day & Date: Tuesday, 25-07-2023
 Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions.**08**

- 1) _____ is 2's complement of 101011011.
 - a) 101011010
 - b) 010111011
 - c) 010100100
 - d) 010100101
- 2) Ex-OR gate has a high output when it has _____ number of high inputs.
 - a) Even
 - b) Odd
 - c) only one
 - d) Two
- 3) In negative logic, _____ corresponds to more positive of two voltage levels.
 - a) 0
 - b) 1
 - c) positive sign
 - d) negative sign
- 4) The output of combination of AND gate and NOT gate for the inputs A and B is _____.
 - a) $A + B$
 - b) $A \cdot B$
 - c) $A \cdot B$
 - d) None of these
- 5) If $A=1$, $B = 0$ then in terms of Boolean algebra, $A + B =$ _____.
 - a) B
 - b) \bar{B}
 - c) Both of the above
 - d) None of these
- 6) Double dabble method is used for _____ to _____ conversion.
 - a) binary, decimal
 - b) decimal, binary
 - c) binary, hexadecimal
 - d) hexadecimal, decimal
- 7) When both inputs of NAND gate are connected together to High (logic 1), output of resultant circuit is _____.
 - a) Low (logic 0)
 - b) High (Logic 1)
 - c) low or high
 - d) none of these
- 8) The circuit used to store 1 bit of data is known as _____.
 - a) Register
 - b) Encoder
 - c) flip-flop
 - d) Decoder

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

- a) Define binary number system with example.
- b) What do you mean by multiplexer? Draw block diagram of N: 1 MUX.
- c) State applications of demultiplexer.
- d) What is BCD code? How it is different from binary numbers? Explain with example.
- e) Explain Half Adder with logic diagram and truth table.
- f) Find decimal equivalent of 1101101 binary. Convert F3DC to binary equivalent.

- Q.3 Write short notes on any TWO of the following. 08**
- a) Decimal to BCD Encoder.
 - b) 3 bit random sequence generator.
 - c) BCD to 7 segment Decoder
- Q.4 Answer any TWO of the following. 08**
- a) Explain binary subtraction using 1's and 2's complement with suitable example.
 - b) Explain binary to gray and gray to binary conversion with example.
 - c) Explain with neat logic diagram and truth table working of 4:1 MUX.
- Q.5 Answer any ONE of the following. 08**
- a) Explain with symbol, truth table and Boolean equation logic gates. State any two IC numbers.
 - b) Explain working of 3 bit up counter with logic diagram, truth table and timing diagram.

Seat No.	
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**B.C.A. (Semester - I) (Old) (CBCS) Examination: March/April-2023
Development of Human Skills Paper-II (19409109)**

Day & Date: Wednesday, 26-07-2023
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 alternative from the following options. 08

- 1) When is the worst time to break into a discussion?
 - a) When everyone is silent
 - b) When one person is talking
 - c) When two or three people are talking simultaneously
 - d) When there is less time left
- 2) Which of these is not a step in the preparation of an interview?

a) Analyzing yourself	b) Identifying your skills
c) Being negative	d) Revising your subject
- 3) Which of these should be avoided for an effective speech?

a) Planning of speech	b) Preparation of speech
c) Fong sentences	d) Organisation
- 4) _____ is the complex of mental characteristics that makes each of us unique from other people.

a) heredity	b) emotional tone
c) Personality	d) Attitude
- 5) What is the front page of a blog called?

a) Header	b) Index page
c) Theme	d) Title
- 6) What is the part of a blog that appears at the top and usually includes the blog title? It can also include an image and is used to brand the blog by giving it a specific look and feel.

a) Footer	b) Index
c) Header	d) Sidebar
- 7) _____ acts according to the pleasure principle.

a) Ego	b) Id
c) Super ego	d) None of these
- 8) _____ refers to the process of identifying and attracting job seekers so as to build a pool of qualified job applicants.

a) Selection	b) Training
c) Recruitments	d) Induction

Q.2 Answer any four of the following 08

- a) Write in brief about gesture and posture.
- b) Write any two types of Interviews?
- c) What is mean by Personality?
- d) What is mean by Blog?
- f) Explain SWOT in brief.
- g) Write in brief about any one of the IT industry.

- Q.3 Write short notes on any two of the following** **08**
- a) Explain Attitude and their types
 - b) Explain do's and don'ts of Interviews
 - c) Write in brief about selection of company recruitment
- Q.4 Answer any two of the following** **08**
- a) What is mean by Personality? Explain freud's stages of personality traits
 - b) What is Blog? Explain in brief about Travel and personal blog
 - c) Write a group discussion on "Impact of Covid 19 on human life".
(Group size 8 candidates.)
- Q.5 Answer any one of the following** **08**
- a) Draft an application letter for the post of "Trainee Software Engineer" in Tata Consultancy Services, Pune in response to their advertisement that appeared in The Times of India. Prepare a resume to be enclosed. You are Nitin/Aparna.
 - b) Explain the Presentation Skill concept in details.

- Q.2 Write the answers in short. (Any Four)** **12**
- a) What opinion does the author have of the education system of his time?
 - b) What is the true sense of freedom?
 - c) Discuss the theme of the poem – ‘Our Earth Will Not Die’ in your words.
 - d) Why is the poet giving so much emphasis on solitude in the poem and what does it mean to him?
 - e) Discuss the tone of compassion used by the poet in the poem - Remember?
 - f) What kind of people can achieve the true essence of freedom?
- Q.3 Answer the following questions. (Any One)** **10**
- a) Write a letter to your father requesting him to send 5000/- as your class trip is going on to visit South India. Mention the details of four tour and places to visit.
 - b) Write a formal letter to your college librarian as you lost your library card. Request him also to issue a duplicate library card to you. Mention all details of yourself like Name, Class, Roll No and how you lost the card.
- Q.4** What is interpersonal intelligence? Write a detailed note on interpersonal intelligence and how to improve them. **10**

Seat
No.

B.C.A (Semester - II) (New) (CBCS) Examination: March/April-2023
Introduction to Python Programming (BCA1202)

Day & Date: Tuesday, 20-06-2023
 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) Which of the following is an assignment operator in Python?
 - a) ==
 - b) ===
 - c) >>>
 - d) =
- 2) What will be the output after the following statements?
`x = 'Python Pi Py'`
`print(x.find('p'))`
 - a) -1
 - b) 0
 - c) 1
 - d) 3
- 3) `Str= 'Hello'`
`print(s[:3])`
 - a) hello
 - b) Hel
 - c) Name Error
 - d) ello
- 4) The standard python compiler is written in _____ language.
 - a) Python
 - b) 'C++'
 - c) Java
 - d) 'C'
- 5) Which of the following is used to enclose strings?
 - a) Single quotes
 - b) Double quotes
 - c) Either single quotes or double quotes
 - d) ! symbol
- 6) Which of the following is used to initialize multiple variables with a common value?
 - a) `x = y: y = 33`
 - b) `x = y = z = 33`
 - c) `x = z; y = z; x = 33;`
 - d) `x & y & z = 33`
- 7) What is used for multi-line strings in Python?
 - a) Three braces `{{{ }}}`
 - b) Three Colon `::: :::`
 - c) Three hashes `### ###`
 - d) Three Quotes `''' '''`
- 8) What will be the output after the following statements?
`x = [5, 4, 3, 2]`
`x.remove(2)`
`print(x).`
 - a) [5, 3, 2]
 - b) [5, 4, 3]
 - c) [5, 4, 2]
 - d) [3, 2]

- Q.2 Answer any four of the following.** **08**
- a) Give the various data types in Python.
 - b) Define break statement.
 - c) Write down syntax and example of importing array module.
 - d) Define String.
 - e) Write the syntax of if and if-else statements.
 - f) Write down syntax and example of center () Method.
- Q.3 Write short notes on any two of the following.** **08**
- a) Write a program to check given number is Armstrong or not.
 - b) What is List? Explain any 6 methods of List with example.
 - c) Explain Bit wise operators and Membership operators with example.
- Q.4 Answer any Two of the following.** **08**
- a) Write a program to check given number is prime or not.
 - b) What is Tuple? Explain any six methods of Tuple with example.
 - c) What is Literals? Explain different types of Literals in python.
- Q.5 Answer any one of the following.** **08**
- a) What is dictionary? Explain various operations on dictionary with example.
 - b) Explain indexing and slicing on arrays. What are the types of arrays explain with example.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: March/April-2023
Operating System (BCA1203)

Day & Date: Wednesday, 21-06-2023
 Time: 12:00 PM To 02:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Draw necessary diagrams whenever 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 option.

08

- 1) What is an operating system?
 - a) interface between the hardware and application programs
 - b) collection of programs that manages hardware resources
 - c) system service provider to the application programs
 - d) all of the mentioned
- 2) Which conditions must be satisfied to solve a critical section problem?
 - a) Bounded waiting
 - b) progress
 - c) Mutual Exclusion
 - d) All of these
- 3) Which of the following scheduling algorithm is non-preemptive scheduling?
 - a) SJF Scheduling
 - b) Round-robin scheduling
 - c) SRTF Scheduling
 - d) None of these
- 4) Which of the following component does not belong to PCB (Process Control Block)?
 - a) CPU registers
 - b) CPU Scheduling information
 - c) Operating System Information
 - d) Accounting Information
- 5) Which of the following operating system runs on the server?
 - a) Batch OS
 - b) Distributed OS
 - c) Real-Time OS
 - d) Network OS
- 6) What type of scheduling is round-robin scheduling?
 - a) Linear data scheduling
 - b) Non-linear data scheduling
 - c) Preemptive scheduling
 - d) Non-preemptive scheduling
- 7) Which of the following is not an operating system?
 - a) Windows
 - b) Linux
 - c) Oracle
 - d) DOS
- 8) CPU scheduling is the basis of _____.
 - a) multiprogramming operating systems
 - b) larger memory sized systems
 - c) multiprocessor systems
 - d) none of the mentioned

- Q.2 Answer any four of the following. 08**
- a) Define Operating System.
 - b) How multiprogramming increases the utilization of CPU?
 - c) What is a Semaphore?
 - d) State services provided by the OS.
 - e) What do you mean by system calls?
 - f) Stands for FCFS and SJF.
- Q.3 Write short notes on any two of the following. 08**
- a) Round Robin scheduling algorithm
 - b) Types of Operating System
 - c) Dining philosopher problem
- Q.4 Answer any Two of the following. 08**
- a) Explain the structure of operating system with proper diagram.
 - b) Define thread in OS with their types? What is the need of a thread?
 - c) What is a process? Explain about various fields of Process Control Block.
- Q.5 Answer any one of the following. 08**
- a) What is a Critical Section problem? Give the conditions that a solution to the critical section problem must satisfy.
 - b) Define thread in OS with their types. What is the need of a thread? What are the advantages of multithread?

Seat No.	
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Set **P**

**B.C.A (Semester - II) (New) (CBCS) Examination: March/April-2023
Programming and Problem Solving Using 'C'- II (BCA1204)**

Day & Date: Thursday, 22-06-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

Instructions: All questions are compulsory.

Q.1 Multiple choice questions.**08**

- 1) Which of the following are correctly formed #define statements in C?

a) #define CUBE (X) (X*X*X);	b) #define CUBE(x) (X*X*X)
c) #define CUBE(X)(X*X*X)	d) #define CUBE(X) {X*X*X}
- 2) What is the use of getchar()?
 - a) The next input character each time it is called
 - b) EOF when it encounters end of file
 - c) Both a and b
 - d) None of the mentioned
- 3) Number of bytes in memory taken by the below structure is?


```
struct test
{
int k;
char c;
};
```

a) Multiple of integer size	b) Integer size+character size
c) Depends on the platform	d) None of the mentioned
- 4) If there is any error while opening a file, fopen will return?

a) Nothing	b) EOF
c) NULL	d) Depends on compiler
- 5) A structure member is generally accessed using the _____.

a) address Operator	b) dot Operator
c) comma operator	d) ternary operator
- 6) C program _____.
 - a) Must contain at least one function
 - b) Needs input data
 - c) Need not contain any function
 - d) None of the above
- 7) The statement int **a;
 - a) is illegal
 - b) is illegal but meaningless
 - c) is syntactically and semantically correct
 - d) none of these
- 8) For binary files, a _____ must be appended to the mode string.

a) Nothing	b) "b"
c) "binary"	d) "01?"

- Q.2 Answer any four of the following** **08**
- a) Write down the syntax for opening File.
 - b) What is function prototype?
 - c) What is the purpose of register keyword?
 - d) What is macro?
 - e) Write down the syntax of Nested structure.
 - f) What is pointer?
- Q.3 Write Short Notes. (Any Two)** **08**
- a) Explain pointer to structure in detail.
 - b) Write a program in C to swap two numbers by using pointer.
 - c) How to pass structure to the function? Explain with suitable example.
- Q.4 Answer any two of the following.** **08**
- a) What are the differences between structure and union?
 - b) What is Dynamic memory allocation? Explain malloc() and calloc() function with suitable example.
 - c) Write a program in C to access student information (roll, name, address, percentage) and print as it is by using union.
- Q.5 Answer any one of the following.** **08**
- a) What is Preprocessor? Why preprocessor directives are used? Explain preprocessor directives with its type.
 - b) Write a program that counts total characters, total words, total lines present in text file.

Seat No.	
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**B.C.A. (Semester - II) (New) (CBCS) Examination: March/April-2023
Web Programming - II (BCA1205)**

Day & Date: Friday, 23-06-2023
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 indicates 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) What is a block of statement?
 - a) Conditional block
 - b) block that combines a number of statements into a single compound statement
 - c) both conditional block and a single statement
 - d) block that contains a single statement
- 2) Which method of jQuery can be used to deal with the name conflicts?
 - a) The conflict() method
 - b) ThenameConflict() method
 - c) ThenoConflict() method
 - d) None of the above
- 3) Which of the following is the correct output for the following JavaScript code:


```
int x=8;
if(x>9)
{
document.write(9);
}
else
{
document.write(x);
}
```

 - a) 9
 - b) 0
 - c) 8
 - d) Undefined
- 4) jQuery is a _____.
 - a) JavaScript method
 - b) JavaScript library
 - c) JSON library
 - d) PHP method
- 5) The code \$("p").css("background-color","yellow") is equivalent to _____.
 - a) jQuery("p").css("background-color","yellow")
 - b) document("p").css("background-color","yellow")
 - c) jq("p").css("background-color","yellow")
 - d) None of the above
- 6) Which jQuery method is used to set one or more style properties to the selected element?
 - a) The html() method
 - b) The style() method
 - c) Thecss() method
 - d) All of the above

- 7) Which of the following jQuery method is used to add/remove one or more classes from the selected elements?
- a) toggleClass() method
 - b) fadeToggle() method
 - c) toggle() method
 - d) slideToggle() method
- 8) What does the syntax \$("p") will select?
- a) All paragraph elements
 - b) Only first paragraph element
 - c) Only last paragraph element
 - d) None of the above

Q.2 Answer any four of the following. 08

- 1) What is event?
- 2) What is jQuery?
- 3) What is array?
- 4) What is sliding?
- 5) What is operator?
- 6) What is variable?

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

- 1) Describe document object model with example.
- 2) Write a program of validation in JavaScript.
- 3) Describe callback functions of jQuery.

Q.4 Answer any two of the following. 08

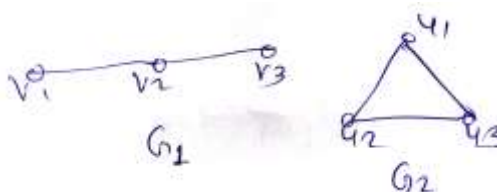
- 1) Explain event handling in JavaScript.
- 2) Write a program of jquerycss method.
- 3) Describe jQuery animation with example.

Q.5 Answer any ONE of the following. 08

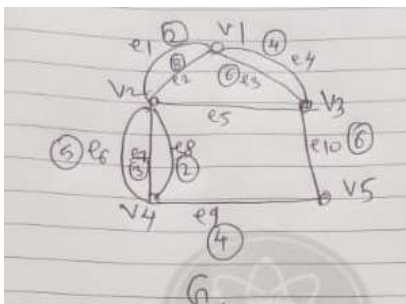
- a) Explain control statement in JavaScript.
- b) Write a program of hide and show method of jQuery.

Q.3 Write short notes (Any Two)

- 1) Write note on trail and circuit.
- 2) Find $G_1 \times G_2$ of the following graph.

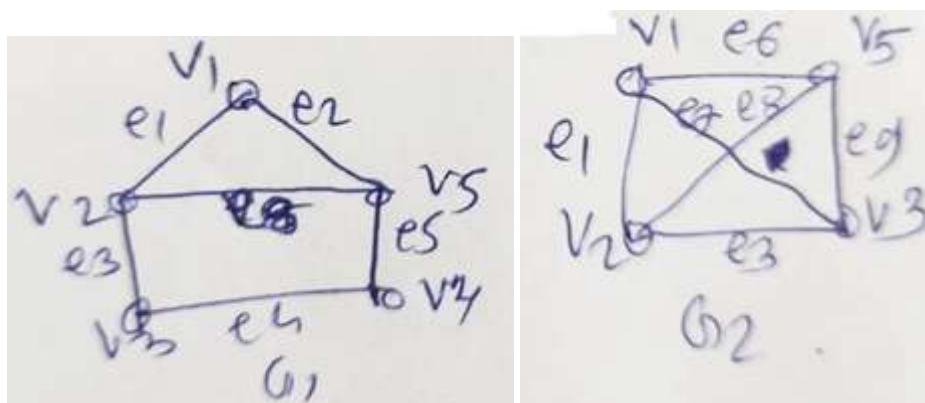


- 3) Solve the Chinese postman problem.

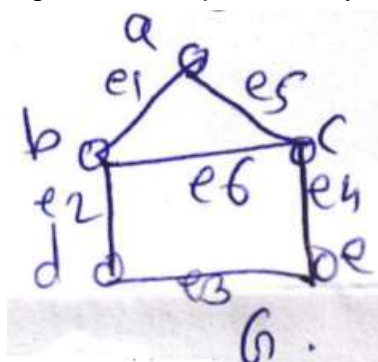


Q.4 Answer the following questions (Any Two)

- 1) Write note on matrix representations of graph.
- 2) Find union and ring sum of the following two graphs.

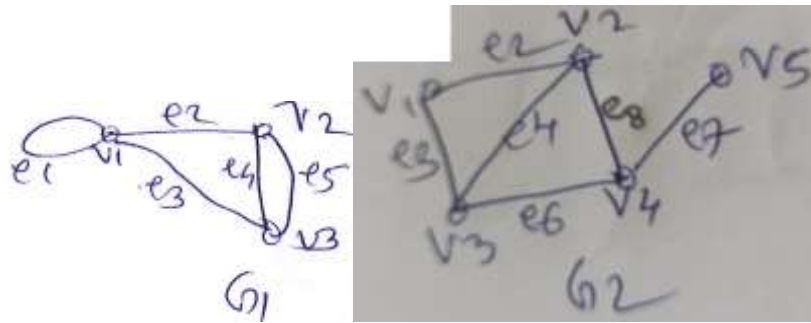


- 3) Solve the following traveling salesman problem by starting to **a**.

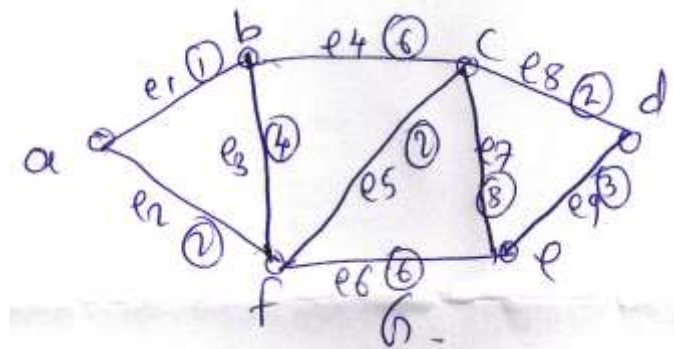


Q.5 Answer any one of the following questions.

1) Find union, intersection and ring sum of two graphs.



2) By using Kruskal's algorithm to find shortest spanning tree of the given graph G.



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

- 1) Define the Poisson Distribution.
- 2) If a discrete r.v. $X \rightarrow B(8, 0.5)$ find mean and standard deviation.
- 3) Define a continuous r.v. X .
- 4) Define a classical definition of probability.
- 5) Define the Normal Distribution.
- 6) Given: $P(A) = 0.3$, $P(B) = 0.4$, $P(A \cup B) = 0.5$, find $P(A \cap B)$.

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

- 1) Explain addition principle of counting with illustration.
- 2) Define Binomial Distribution. State additive property of binomial distribution.
- 3) Define Event and state any two types of event with example.

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

- 1) The p.m.f. of a r.v. X is as follows,

X	0	1	2	3	4
$P(x)$	k	$2k$	$5k$	$7k$	$9k$

Find k and hence obtain $V(X)$.

- 2) Show that $P(A') = 1 - P(A)$, where A' is complementary of A .
- 3) Two coins are tossed at a time. Let A : getting head on first coin and B : getting head on second coin. Test independence of A and B .

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

- 1) The p.d.f. of continuous r.v. X is,
 $f(x) = Cx$; $0 < X < 1$
 $= 0$; otherwise

Find i) C ii) $E(X)$ iii) $V(X)$

- 2) Define Poisson distribution. State its mean, variance and additive property and also give the two Real life examples.

Seat No.	
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B.C.A. (Semester - II) (New) (CBCS) Examination: March/April-2023
Digital Fundamentals of Computer (BCA1208)

Day & Date: Monday, 03-07-2023
 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 Multiple choice questions.

08

- 1) _____ sequential circuit.

a) flip flip	b) adder
c) mux	d) hexadecimal
- 2) 3 bit counter count total _____ pulses.

a) 8	b) 10
c) 16	d) 2
- 3) Full adder consists of _____.

a) 3i/p 2 o/p	b) 2i/p 2o/p
c) 3i/p 1o/p	d) 3i/p 3o/p
- 4) Group of flip flip called as _____.

a) register	b) mux
c) dmux	d) none
- 5) _____ is universal gate.

a) and	b) nand
c) OR	d) x-or
- 6) _____ called as data selector.

a) mux	b) dmux
c) encoder	d) decoder
- 7) _____ device count clock pulses.

a) counter	b) adder
c) both a and b	d) none
- 8) Ic 7432 is a _____.

a) mux	b) dmux
c) encoder	d) OR gate

Q.2 Answer any four of the following.

08

- 1) Define half adder
- 2) Define shift register
- 3) Define half subtractor
- 4) Define counter
- 5) Define multiplexer
- 6) Define decoder

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

08

- 1) Explain mod 10 using IC 7490.
- 2) Explain clocked S R flip flop.
- 3) Binary addition and subtraction rules.

Q.4 Answer any Two of the following.

08

- 1) Explain 4:1 Mux.
- 2) Explain 2 line to 4 line decoder.
- 3) Explain SISO shift register.

Q.5 Answer any One of the following.

08

- 1) Draw symbol and truth table of OR, AND, NOT, NAND gates.
- 2) Explain master slave J-K flip flop.

Seat No.	
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B.C.A (Semester - II) (New) (CBCS) Examination: March/April-2023
Introduction of Microprocessor and Interfacing (BCA1209)

Day & Date: Tuesday, 04-07-2023
 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) Non programmable calculators are allowed.

Q.1 Choose correct alternative for the following.

08

- 1) 8085 has _____ data bus.

a) 20	b) 16
c) 8 bit	d) 32 bit
- 2) Associative memory is also known as _____.

a) RAM	b) CAM
c) DMA	d) Cache
- 3) 8085 contains _____ no of data lines.

a) 2	b) 4
c) 8	d) 16
- 4) When data present in cache memory means _____.

a) WRITE	b) READ
c) MISS	d) HIT
- 5) 8085 is _____ bit microprocessor.

a) 2	b) 6
c) 8	d) None of these
- 6) STA is _____ type instruction.

a) arithmetic	b) data transfer
c) logical	d) Branch
- 7) GND is connected to pin _____ of 8085.

a) 20	b) 1
c) 40	d) 21
- 8) In memory mapped I/O address I/O is stored in _____.

a) I/O	b) Memory
c) Both a and b	d) none of these

Q.2 Answer any four of the following.

08

- 1) Explain direct and register indirect addressing mode.
- 2) Define instruction cycle?
- 3) Explain concept of associative memory.
- 4) Write program for addition of two numbers.
- 5) Write function of cache memory.
- 6) What is mean interfacing?

- Q.3 Answer any two of the following. 08**
- 1) Explain pin function of 8085.
 - 2) Explain data transfer instructions.
 - 3) Explain interfacing of printer.
- Q.4 Answer any two of the following. 08**
- 1) Write assembly language program for multiplication and division.
 - 2) Explain interrupt driven I/O.
 - 3) Explain DMA controller.
- Q.5 Answer any One of the following. 08**
- 1) Explain architecture of 8085 with block diagram.
 - 2) Explain I/O mapped I/O and memory mapped I/O.

8) Fill in the blanks with the past tense forms of the verbs given within the brackets.

'The Mechanic _____ (repair) the car.

- a) will repaired
- b) was repaired
- c) repaired
- d) repair

9) The outline of a presentation includes _____.

- a) acknowledgment
- b) probable questions
- c) an introduction, body and conclusion
- d) None of the above

10) P.P.T Presentation means _____

- a) Power Point Presentation
- b) Power Presentation
- c) Point Power Presentation
- d) None of the above

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

- 1) Which sort of person asks troublesome questions in the essay 'Of Discourse'?
- 2) What benefit could be derived from Struggle of youth?
- 3) What kind of people can achieve the true essence of freedom?
- 4) What is described as septic daggers?
- 5) Which literary era did Alexander Pope write it?
- 6) What does the poet wish to hear from the lover?

Q.2 Answer the following questions in brief. (Eight out of Twelve) 16

- 1) What is author's purpose in discussing discourse?
- 2) What is the relation between education and virtue?
- 3) What kind of people can achieve the true essence of freedom?
- 4) What opinion does the author present to the people in India of that time regarding freedom?
- 5) What are the common factors among men of eminence?
- 6) What is the author's purpose in discussing discourse?
- 7) Discuss and write the theme of the poem "Our Earth Will Not Die"?
- 8) Write down the summary of the poem "Ode on Solitude".
- 9) Discuss the tone of compassion used by the poet in the poem "Remember".
- 10) Write down the process of paneer in milk factory.
- 11) Prepare a presentation on your favourite social worker.
- 12) Write down the importance of the soft skill "Interpersonal intelligence".

SLR-QH-28

- Q.3 A) Write down the answers of any two briefly. 10**
- 1) Describing the reaching process of Pune to Mahabaleshwar by car.
 - 2) Define and explain the use of power point presentation in today's advanced digital learning school / college.
 - 3) Explain the difference between formal letter and informal letter.
- B) Prepare a presentation on your own college and its facilities. 06**
- Q.4 A) Write down the following answers only any two briefly. 12**
- 1) Read the following advertisement and write a job application letters.

MATOSHREE UMABAI ENGLISH MEDIUM SCHOOL
Wanted Teacher
Qualification - M.A. B.Ed
Experience - Min 1 year
Interested candidates send CV and application at
Indiaumabaischool@gmail.com.
 - 3) Explain the soft skill "Interpersonal Intelligence".
 - 4) Write down the process of making pizza. How to make it within 15 minutes.
- B) Explain power point presentation and its importance. 04**
- Q.5 Write down any two of the following. 16**
- a) State three such situations from your professional life when you have felt the following emotions.
 - 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 the vegetable market in your city from your home.

Seat No.	
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B.C.A (Semester - II) (Old) (CBCS) Examination: March/April-2023
Advanced Programming in C (19409202)

Day & Date: Tuesday, 20-06-2023
 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.

08

- 1) Which of the following is a correct format for declaration of function?
 - a) return-type function-name (argument type);
 - b) return-type function-name (argument type) { }
 - c) return-type (argument type) function-name;
 - d) Both (a) and (b)
- 2) _____ is a variable that stores the address of another pointer.
 - a) Pointer
 - b) Double pointer
 - c) Structure
 - d) Preprocessor
- 3) If there is any error while opening a file, fopen will return?
 - a) Nothing
 - b) EOF
 - c) NULL
 - d) Depends on compiler
- 4) What is sizeof() in c?
 - a) Operator
 - b) Function
 - c) Array
 - d) None of these
- 5) Which of the following mode argument is used to truncate?
 - a) a
 - b) f
 - c) w
 - d) t
- 6) Which of the following cannot be a structure member?
 - a) Another structure
 - b) Function
 - c) Array
 - d) None of the mentioned
- 7) Which is not a storage class?
 - a) Auto
 - b) Register
 - c) Typedef
 - d) Static
- 8) Which the following functions used to allocate memory?
 - a) Malloc()
 - b) calloc()
 - c) free
 - d) both a and b

Q.2 Attempt any four of the following.

08

- a) Define local variable.
- b) Write a difference between call by value and call by reference.
- c) Define preprocessor.
- d) Define function. List the types of function.
- e) List the operations on pointer.

- Q.3 Attempt any two of the following.** **08**
- a) What is pointer? Explain array of pointers.
 - b) What is structure? Explain structure with example.
 - c) What is macros? Explain types of macros.
- Q.4 Attempt any two of the following.** **08**
- a) Explain any four preprocessor directive.
 - b) Write a program to check given number is palindrome or not using function.
 - c) Explain output formatting functions.
- Q.5 Attempt any one of the following.** **08**
- a) Explain different file opening modes with example.
 - b) Explain dynamic memory allocation with suitable program.

Seat
No.

B.C.A. (Semester - II) (Old) (CBCS) Examination: March/April-2023
Introduction to Operating System (19409203)

Day & Date: Wednesday, 21-06-2023
 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.**08**

- 1) An operating system manages.
 - a) Memory
 - b) Processor
 - c) Disk and I/O device
 - d) All of above
- 2) Which of the following do not belong to queues for processes?
 - a) Job queue
 - b) PCB queue
 - c) Device Queue
 - d) Ready Queue
- 3) _____ is a logical extension of time sharing operating system.
 - a) Real time
 - b) Multiprocessing
 - c) Distributed
 - d) Multiprogramming
- 4) A process can be defined as _____.
 - a) any user programs
 - b) any program in execution
 - c) any O.S program
 - d) any file stored on disk
- 5) The ready queue is a queue of _____.
 - a) processes ready to execute
 - b) processes waiting for I/O
 - c) processes near completion
 - d) completed processes
- 6) The critical section problem is a problem faced by _____.
 - a) co-operating processes
 - b) O.S processes
 - c) user processes
 - d) None of these
- 7) A binary semaphore _____.
 - a) Has the value one or zero
 - b) Is essential to binary computers
 - c) Is used only for synchronization
 - d) Is used only for mutual exclusion
- 8) The number of processes completed per unit time is known as _____.
 - a) Output
 - b) Throughput
 - c) Efficiency
 - d) Capacity

Q.2 Answer the Any Four of following.**08**

- a) What is operating system?
- b) What is scheduler? List out its types.
- c) What is process? List out operations on process.
- d) What is semaphores? List out its types.
- e) What is threads? List out its types.
- f) What is co-operating process?

Q.3 Write short Note on Any Two of following. 08

- a) System Calls
- b) Critical Section problem
- c) Monolithic and layered system

Q.4 Answer the Any Two of following. 08

- a) Consider the following example. Implement the First come first serve scheduling algorithm and find out following.
- i) Draw the Gantt chart.
 - ii) Calculate the average waiting time.
 - iii) Calculate the turnaround time.

Process	Brust Time
P1	12
P2	5
P3	4

- b) Explain the system components.
- c) What is process? Explain the life cycle of process.

Q.5 Answer any one of following. 08

- a) Explain the services provided by operating system.
- b) Explain any four types of operating system with advantages and disadvantages.

Seat No.	
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B.C.A. (Semester - II) (Old) (CBCS) Examination: March/April-2023
Basics of Web Programming – II (19409204)

Day & Date: Thursday, 22-06-2023
 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 option. 08

- 1) Which of the following keywords is used to define a variable in JavaScript?
 - a) var
 - b) let
 - c) Both a and b
 - d) None of these
- 2) What is JavaScript?
 - a) JavaScript is a scripting language used to make the website interactive
 - b) JavaScript is an assembly language used to make the website interactive
 - c) JavaScript is a compiled language used to make the website interactive
 - d) None of the mentioned
- 3) Who developed jQuery, and in which year it was first released?
 - a) John Richard in 2001
 - b) Mark Bensman in 2004
 - c) John Resig in 2006
 - d) None of the above
- 4) Which of the following sign is used as a shortcut for jQuery?
 - a) the % sign
 - b) the & sign
 - c) the \$ sign
 - d) the @ sign
- 5) The jQuery method used to set the width property of an element is _____.
 - a) setWidth(val) method
 - b) width(val) method
 - c) setCSSWidth(val) method
 - d) None of the above
- 6) The jQuery method used to remove the set of matched elements is _____.
 - a) delete() method
 - b) empty() method
 - c) remove() method
 - d) None of the above
- 7) Arrays in JavaScript are defined by which of the following statements?
 - a) It is an ordered list of values
 - b) It is an ordered list of objects
 - c) It is an ordered list of string
 - d) It is an ordered list of functions
- 8) How can a datatype be declared to be a constant type?
 - a) const
 - b) let
 - c) constant
 - d) var

Q.2 Answer any four of the following. 08

- a) What is jQuery?
- b) Write a Toggle() in JQuery.
- c) What is the use of window object?
- d) What is jQuery Hide Show?
- e) How to write a comment in JavaScript?
- f) What is DOM? What is the use of document object?

- Q.3 Write short notes on any two of the following. 08**
- a) Explain Arithmetic and Comparison Operators.
 - b) Write a program for adding CSS classes in JQuery.
 - c) Explain Break statement with example.
- Q.4 Answer any two of the following. 08**
- a) Explain get content in JQuery with Example.
 - b) Explain methods of JavaScript navigator object.
 - c) Explain jQuery noConflict() Method.
- Q.5 Answer any one of the following. 08**
- a) What is selectors? Explain with example.
 - b) What is array? Explain any 3 methods.

Seat No.	
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Set **P**

**B.C.A. (Semester - II) (Old) (CBCS) Examination: March/April-2023
Office Automation (19409205)**

Day & Date: Friday, 23-06-2023
Time: 12:00 PM To 02:00 PM

Max. Marks: 40

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

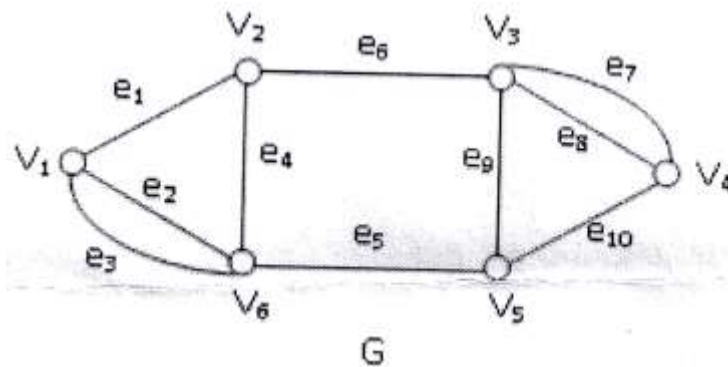
Q.1 Choose correct alternative from the following. 08

- 1) Which shortcut key is used to do text Italic?
 - a) Ctrl+C
 - b) Ctrl+V
 - c) Ctrl+I
 - d) Ctrl+B
- 2) Spreadsheet is created in _____.
 - a) MS- Word
 - b) MS- Excel
 - c) MS- Power Point
 - d) MS- Access
- 3) In database the category of information is called as _____.
 - a) Record
 - b) Tuple
 - c) Field
 - d) String
- 4) What is best way to create another copy of slide _____.
 - a) From insert tab choose duplicate slide
 - b) Click the slide and press Ctrl+A and paste the new slide
 - c) Redo everything on a new slide that you have to done on previous slide
 - d) None of these
- 5) If the displayed Time and Date is wrong, you can reset using _____.
 - a) My computer
 - b) Control Panel
 - c) Toolbar
 - d) Desktop
- 6) _____ is the 1990 version of the Macintosh trash can.
 - a) Recycle Bin
 - b) My Computer
 - c) Task bar
 - d) None of these
- 7) What are the smallest and largest font size available in font size Toolbar?
 - a) 1 and 62
 - b) 8 and 72
 - c) 10 and 72
 - d) 8 and 68
- 8) Switching of the computer is called _____.
 - a) Restart
 - b) Stand by
 - c) Shut down
 - d) Log off

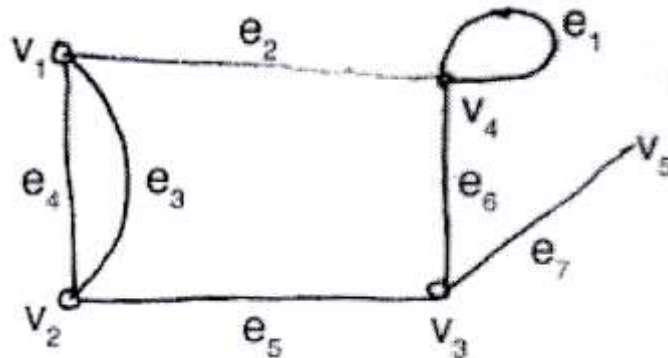
- Q.2 Answer ANY FOUR of the following.** **08**
- 1) Write short note on Alignment.
 - 2) What is the purpose of Taskbar? Explain with Diagram.
 - 3) What is use of
 - a) Ctrl+V
 - b) Ctrl+N
 - c) Ctrl+A
 - d) Ctrl+S Key
 - 4) Explain the functions of MS-Excel.
 - 5) How to merge and spilt column in MS-Excel?
 - 6) Draw a neat diagram of document in MS-word.
- Q.3 Write Short Note on ANY TWO of the following.** **08**
- 1) Pivot Table in MS-Excel
 - 2) Characteristics of computer
 - 3) Adding graphics in MS-Power Point
- Q.4 Answer ANY TWO of the following.** **08**
- 1) What is Sorting, Filtering, Validation and subtotal?
 - 2) Note down the steps of creating Form in MS-Access.
 - 3) What is computer? Applications of Computer.
- Q.5 Answer any ONE of the following.** **08**
- a) What is Chart in MS-Excel? Make result sheet for students which Displays Grade of students. (Entering formula is compulsory)
 - b) Write the steps involved in mail merging. What is the benefit of mail merging?

Q.3 Answer any two of the following questions.

- 1) Draw the graph $G - V_2$, $G - \{e_1, e_4, e_6\}$ and $G - \{V_2 - V_5\}$



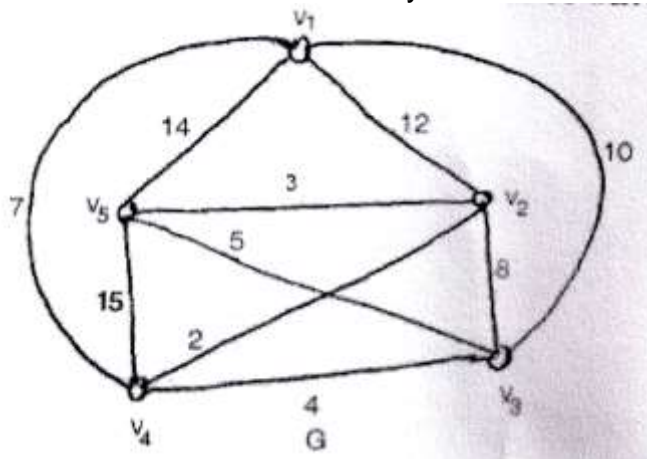
- 2) Find the adjacency and incidence matrix for the following graph.



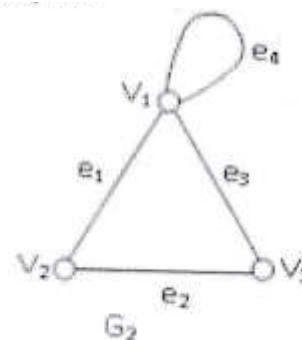
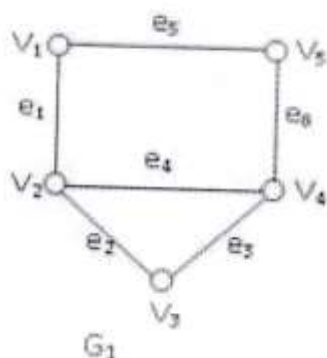
- 3) Write the note on Chinese postman problem.

Q.4 Answer any two of the following questions.

- 1) State & prove hand shaking lemma.
 2) Solve the following travelling salesman problem with head quarter at vertex V_1 . Hence find the minimum distance travelled by salesman.

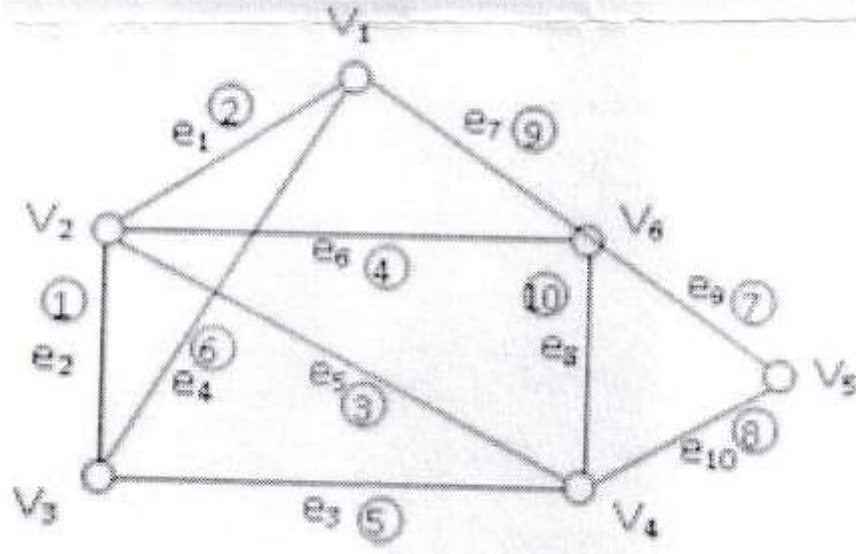


- 3) Find $G_1 \cup G_2$ for the following pair's of graphs.



Q.5 Answer any one of the following questions.

- 1) Define shortest spanning tree and by using Kruskal's algorithm; find a shortest spanning tree and its weight of the following graph.



- 2) Define with examples:
- i) Regular graph
 - ii) Euler graph
 - iii) Complement of graph
 - iv) Sub graph

Seat
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B.C.A. (Semester - II) (Old) (CBCS) Examination: March/April-2023
Statistical Methods-II (19409207)

Day & Date: Sunday, 02-07-2023
 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 calculator is allowed.

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

- 1) In _____ order of arrangement of objects is important.
 - a) Permutation
 - b) Combination
 - c) a and b both
 - d) None of these
- 2) Number of 2-digit numbers to be formed by arranging the digits 1, 2, 3, 4, 5 with expectation is _____.
 - a) 20
 - b) 10
 - c) 25
 - d) None of these
- 3) If $P(A) = 1$, then A is _____ event.
 - a) Impossible
 - b) Null
 - c) Sure
 - d) None of these
- 4) If $P(A \cap B) = 0$ then events A and B are _____.
 - a) Exhaustive
 - b) Equally likely
 - c) Mutually exclusive
 - d) Independent
- 5) If $P(A) = 0.5$, $P(B) = 0.6$, $P(A \cap B) = 0.3$ then $P(A/B) =$ _____.
 - a) 0.6
 - b) 0.5
 - c) 0.3
 - d) 0.4
- 6) The p.m.f. of discrete r.v. X is $P(x) = \frac{x}{10}$, $x = 1, 2, 3, 4$.
 Then $P(X = 2.5) =$ _____.
 - a) 1
 - b) 0.25
 - c) 0.025
 - d) 0
- 7) If $X \rightarrow B(15, 0.4)$, then $E(X) =$ _____.
 - a) 6
 - b) 5
 - c) 3.6
 - d) None of these
- 8) The probability curve of normal distribution is symmetric about _____.
 - a) A.m.
 - b) Median
 - c) Mode
 - d) All of these

Q.2 Write the answer of any four of the following. 08

- a) Define – Probability.
- b) State any 2 properties of c.d.f. of discrete r.v.
- c) Define – Binomial distribution
- d) Find value of x of ${}^{10}C_2 + {}^{10}C_3 + {}^{11}C_4 + {}^{12}C_5 = {}^{13}C_x$
- e) Given: $P(A) = 0.3$, $P(B) = 0.45$, $P(A \cup B) = 0.6$ Find $P(A \cap B)$
- f) If $X \rightarrow P(m)$ with $P(X = 1) = P(X = 2)$, then find value of 'm'.

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

- a) Principles of counting
- b) Properties of normal distribution
- c) Poisson distribution

Q.4 Write the answer of any two of the following. 08

- a) State Axioms of probability and prove that $P(\bar{A}) = 1 - P(A)$
- b) The p.d.f. of normal distribution is

$$f(x) = K \cdot e^{-1/50(x^2 - 20x + 100)}, -\infty < x < \infty$$

Find parameters of the distribution.

- c) Find number of passwords to be formed using the alphabets A, B, C, D and digits 1, 2, 3, 4, 5 such that a password consists of 2 alphabets followed by 3 digits.

Q.5 Attempt any one of the following. 08

- a) Define:

- i) Mutually exclusive events
- ii) Equally likely events
- iii) Independent events
- iv) p.m.f.

- b) The p.m.f. of discrete r.v. X is

X	1	2	3	4	5
P(x)	0.1k	0.2k	0.25k	0.15k	0.3k

Find:

- i) Value of k
- ii) $E(X)$
- iii) $V(X)$
- iv) $P(2 < X < 5)$

Seat No.	
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B.C.A. (Semester - II) (Old) (CBCS) Examination: March/April-2023
Introduction to Microprocessor (19409208)

Day & Date: Monday, 03-07-2023
 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 Multiple choice questions.

08

- 1) Which among the following are not the application of microprocessor?

a) Word processing	b) Microprocessor
c) Washing machines	d) Communication
- 2) Harvard architecture is used in _____.

a) Microcontrollers	b) Microprocessor
c) Computer system	d) Operating system
- 3) Which is a 64bit microprocessor among the following?

a) Intel 8085	b) Intel 8086
c) Motorola 68020	d) Intel Pentium
- 4) The register that may be used as an operand register is _____.

a) Accumulator	b) B register
c) Data-register	d) Accumulator and B register
- 5) Which of the following is not a special function register?

a) Program counter	b) Instruction pointer
c) Accumulator	d) Stack pointer
- 6) How many flags does 8085 have?

a) 4	b) 5
c) 8	d) 9
- 7) Pentium is a _____ processor.

a) 32 bit	b) 16 bit
c) 8 bit	d) 64 bit
- 8) The addressing mode which makes use of indirection pointer is _____.

a) Indirect addressing mode	b) Index addressing mode
c) Relative addressing mode	d) Offset addressing mode

Q.2 Answer any four of the following.

08

- 1) How many machine cycles does 8085 have, mention them?
- 2) Write a difference between memory mapped I/O and peripheral I/O.
- 3) Define Pipelining.
- 4) What are the modes of operation used in 8253?
- 5) Define instruction cycle, machine cycle and T-state.

- Q.3 Write short notes on any two of the following.** **08**
- 1) Explain the features of 8085 in details.
 - 2) Explain the various addressing modes of 8085 microprocessor with example.
 - 3) Write the program to transfer block of data from one location to other.
- Q.4 Answer any Two of the following.** **08**
- 1) Write an assembly language program to add or subtract two 16-bit number.
 - 2) Write the concept of I/O and memory interfacing.
 - 3) Draw and explain the basic bus system of 8085 microprocessor.
- Q.5 Answer any One of the following.** **08**
- 1) With neat PIN diagram explain the various signals of 8085 microprocessor.
 - 2) With neat diagram explain the function of 8285 PPI.

Seat
No.

B.C.A (Semester - II) (Old) (CBCS) Examination: March/April-2023
Software Engineering - II (19409209)

Day & Date: Tuesday, 04-07-2023
 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 correct alternatives given below.**08**

- 1) Which of the following is not related to DFD?
 - a) Bubble (process)
 - b) Arrow (flow)
 - c) Secondary Storage
 - d) Data Store
- 2) Weak entity set is represented as _____.
 - a) Underline
 - b) Double line
 - c) Double diamond
 - d) Double rectangle
- 3) During system implementation the following are done _____.
 - i) programs are written and tested with operational data
 - ii) user documentation is created and users trained
 - iii) programmers are recruited and trained
 - iv) the system is tested with operational data
 - a) i and iii
 - b) ii and iii
 - c) ii and iv
 - d) i, ii and iv
- 4) HIPO stands for _____.
 - a) Hierarchy input process output
 - b) Hierarchy input plus output
 - c) Hierarchy plus input process output
 - d) None of these
- 5) Conversion method in which users, being used to an old system, continue to use the old system, alongside the new system, is _____.
 - a) parallel run
 - b) multitasking
 - c) multi-processing
 - d) all of the above
- 6) White Box techniques is also referred as _____.
 - a) Design based testing
 - b) Structural testing
 - c) Error guessing technique
 - d) None of the mentioned
- 7) Third normal form is based on the concept of _____.
 - a) Closure Dependency
 - b) Transitive Dependency
 - c) Normal Dependency
 - d) Functional Dependency
- 8) Decision Nodes are represented by _____.
 - a) Disks
 - b) Squares
 - c) Circles
 - d) Triangles

- Q.2 Answer any four of the following. 08**
- 1) What are the DFD components or Symbols?
 - 2) What is white box testing?
 - 3) Explain pilot approach.
 - 4) Explain Decision tree.
 - 5) What is normalization? Explain 1 NF.
 - 6) What is system maintenance? What are different types of maintenance?
- Q.3 Write notes on any two of the following. 08**
- 1) System Implementation
 - 2) Black box Testing
 - 3) Data Dictionary
- Q.4 Answer any two of the following. 08**
- 1) What is the need of Flowchart? Explain different symbols in flow chart.
 - 2) What is a Decision Table? Explain with an example.
 - 3) Explain Top-Down incremental implementation. State its advantages.
- Q.5 Answer any One of the following. 08**
- 1) What is system configuration? Explain collection of system statistics.
 - 2) Draw the context level and first level data flow diagram for the following subsystems:
 - a) Library System
 - b) Employee Payroll System

Seat No.	
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**B.C.A (Semester - III) (New) (CBCS) Examination: March/April-2023
OOPS with C++ - I (19409301)**

Day & Date: Monday, 03-07-2023
Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions.

08

- 1) Wrapping data and its related functionality into a single entity is known as _____.
 - a) Abstraction
 - b) Encapsulation
 - c) Polymorphism
 - d) Modularity
- 2) Which operator is overloaded for a count object?
 - a) >>
 - b) <<
 - c) <
 - d) >
- 3) What is the size of a Boolean variable in C++?
 - a) 1 bit
 - b) 1 byte
 - c) 4 bytes
 - d) 2 bytes
- 4) What is an inline function?
 - a) A function that is expanded at each call during execution
 - b) A function that is called during compile time
 - c) A function that is not checked for syntax errors
 - d) A function that is not checked for semantic analysis
- 5) What is a friend function in C++?
 - a) A function which can access all the private, protected and public members of a class
 - b) A function which is not allowed to access any member of any class
 - c) A function which is allowed to access public and protected members of a class
 - d) A function which is allowed to access only public members of a class
- 6) Which of the following operator cannot be overloaded?
 - a) +
 - b) ? :
 - c) -
 - d) %
- 7) Which of these following-members are not accessed by using direct member access operator?
 - a) public
 - b) private
 - c) protected
 - d) Both private & protected
- 8) By default how the value are passed in c++?
 - a) call by value
 - b) call by reference
 - c) call by pointer
 - d) call by object

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

- 1) What is class?
- 2) What is the role of protected access specifier?
- 3) Write syntax and use of 'enum' keyword.
- 4) Write different rules to use constructor.
- 5) What is nesting of member function?
- 6) What is this pointer?

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

- 1) Explain scope resolution operator with example.
- 2) What is Constructor?
- 3) 'Delegation' as OOP's concept.

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

- 1) How single friend function can act as bridge between two or more classes?
- 2) Explain "Function Overloading" with example.
- 3) Difference between procedure oriented programming and Object Oriented Programming.

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

- 1) What is operator overloading? What is the rule to overload unary & binary operator?
- 2) Explain basic concepts of oops.

Seat No.	
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B.C.A. (Semester - III) (New) (CBCS) Examination: March/April-2023
Data Structures using 'C'- I (19409302)

Day & Date: Tuesday, 04-07-2023
 Time: 09:00 AM To 11:00 AM

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.

Q.1 Multiple choice questions.

08

- 1) In which algorithm a main problem is breakdown into two or more subproblems?
 - a) Branch & bound
 - b) Greedy
 - c) Divide & conquer
 - d) None of these
- 2) Which of the following application makes use of a circular linked list?
 - a) Undo operation in a text editor
 - b) Recursive function calls
 - c) Allocating CPU to resources
 - d) All of the mentioned
- 3) "Stack Overflow" situation occurs while performing _____ operation.
 - a) IsFull()
 - b) IsEmpty()
 - c) Push()
 - d) Pop()
- 4) Which of the following queue allows us to add or delete elements from both ends?
 - a) Linear
 - b) Circular
 - c) Priority
 - d) Deque
- 5) Which of the following linked list has double parts in its node structure?
 - a) Singly linear
 - b) Doubly linear
 - c) Doubly circular
 - d) Both b) & c)
- 6) The type of expression in which operator succeeds its operands is?
 - a) Infix Expression
 - b) Prefix Expression
 - c) Postfix Expression
 - d) None of the mentioned
- 7) Which of these best describes an array?
 - a) A data structure that shows a hierarchical behavior
 - b) Container of objects of similar types
 - c) Container of objects of mixed types
 - d) All of the mentioned
- 8) If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?
 - a) ABCD
 - b) DCBA
 - c) DCAB
 - d) ABDC

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

- 1) Define Data Structure.
- 2) State the application of Queue.
- 3) What is node? Write the Node structure of SLL.
- 4) What is time & space complexity?
- 5) Why stack is called LIFO data structure?
- 6) What is ADT?

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

- 1) Operations of array
- 2) Circular queue
- 3) Use of stack in recursion

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

- 1) Explain backtracking and dynamic programming.
- 2) What is Linear linked list? Explain its following operations.
 - i) insert_at_begin()
 - ii) Search()
- 3) Write a program to check entered string is palindrome or not using stack.

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

- 1) Write a program to implement queue using array.
- 2) What are the types of Linked List? Explain any type of Linked List with example.

Seat No.	
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Set **P**

B.C.A. (Semester - III) (New) (CBCS) Examination: March/April-2023
Database Management System (19409303)

Day & Date: Wednesday, 05-07-2023
 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 correct alternative from the following. 08

- 1) Data about data is termed as _____.
 - a) Directory
 - b) Databank
 - c) Meta Data
 - d) None of these
- 2) DBMS stands for _____.
 - a) Database Management System
 - b) Database Manage System
 - c) Data Management System
 - d) Database Management Service
- 3) Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.
 - a) Relational
 - b) Structural
 - c) Procedural
 - d) Fundamental
- 4) _____ of the following is not type of database model.
 - a) Hierarchical
 - b) Network
 - c) Decentralized
 - d) Distributed
- 5) _____ property is 'all or nothing' property.
 - a) Atomicity
 - b) Consistency
 - c) Isolation
 - d) Durability
- 6) The term _____ is used to refer to a row.
 - a) Field
 - b) Tuple
 - c) Attribute
 - d) Column
- 7) _____ is not a feature of DBMS.
 - a) Minimum Duplication and Redundancy of Data
 - b) High Level of Security
 - c) Single-user Access only
 - d) Support ACID Property
- 8) _____ level describes the structure of the whole database for a group of users.
 - a) Physical
 - b) External
 - c) Conceptual
 - d) None of these

Q.2 Answer the following questions briefly. (any four) 08

- 1) What is Data?
- 2) What is Data security?
- 3) What is Entity?
- 4) Define Relationship.
- 5) What are the advantages of DBMS?
- 6) What is shadow paging?

- Q.3 Write short notes on any two of the following. 08**
- 1) Relation, tuple and domain
 - 2) Database Users
 - 3) Deadlock
- Q.4 Answer any two of the following. 08**
- 1) Differentiate between Network and Hierarchical model.
 - 2) What are the limitations of traditional file system?
 - 3) Explain advantages and disadvantages of Data Distribution.
- Q.5 Answer any one of the following. 08**
- 1) What is transaction? Explain ACID properties.
 - 2) What is join? Explain types of join with example.

- Q.2 Answers any four of the following. 08**
- a) List out dynamic testing techniques of WBT.
 - b) What are the various goals of loop testing?
 - c) What is alpha testing?
 - d) List out steps of the test plan
 - e) List out types of functional testing.
 - f) When we can start testing?
- Q.3 Write short notes on any two of the following. 08**
- a) Volume testing
 - b) Decision table testing
 - c) Review process
- Q.4 Answers any Two of the following. 08**
- a) Differentiate top-down and bottom-up incremental integration testing
 - b) Explain Equivalence Class Partitioning.
 - c) Create test execution report for Gmail login.
- Q.5 Answer any one of the following. 08**
- a) What is performance testing? Explain its various types.
 - b) Explain defect life cycle.

Seat No.	
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**B.C.A. (Semester - III) (New) (CBCS) Examination: March/April-2023
Web Development Using PHP (19409305)**

Day & Date: Friday, 07-07-2023
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 is PHP stand for?
 - a) Personal Home Page
 - b) Hypertext Preprocessor
 - c) Pretext Hypertext Processor
 - d) Preprocessor Home Page
- 2) Which of the following is not a Superglobals in PHP?
 - a) \$_SERVER
 - b) \$_ENV
 - c) \$_FILES
 - d) \$_PUT
- 3) What should be the correct syntax to write a PHP code?
 - a) < php >
 - b) <? php ?>
 - c) <? ?>
 - d) <?php ?>
- 4) When you use the \$_GET variable to collect data, the data is visible to _____.
 - a) none
 - b) only you
 - c) everyone
 - d) selected few
- 5) Which two predefined variables are used to retrieve information from forms?
 - a) \$GET & \$SET
 - b) \$_GET & \$_POST
 - c) \$_GET & \$_SET
 - d) GET & SET
- 6) Which one of the following function is used to start a session?
 - a) start_session()
 - b) session_start()
 - c) session_begin()
 - d) begin_session()
- 7) Which function returns an array consisting of associative key/ value pairs?
 - a) count()
 - b) array_count()
 - c) array_count_values()
 - d) count_values()
- 8) Which superglobal stores a variety of information pertinent to a file uploaded to the server via a PHP script?
 - a) \$_FILE Array
 - b) \$_FILES Array
 - c) \$_FILES_UPLOADED Array
 - d) \$_FILE_UPLOADED Array

Q.2 Answer any four of the following.

08

- i) What are the different types of Array in PHP?
- ii) Explain GET and POST method in short.
- iii) What are the difference between echo and print?
- iv) What are the uses of explode and implode functions?
- v) How can you make a connections with MySql server using PHP?
- vi) Explain setcookie() function in PHP?

- Q.3 Write short notes on any two of the following. 08**
- i) Explain array sorting functions.
 - ii) Explain soundex() and metaphone().
 - iii) Write a program for a Armstrong number.
- Q.4 Answer any two of the following. 08**
- i) Explain query string with example.
 - ii) Explain function parameter passing technique.
 - iii) Explain session with example.
- Q.5 Answer any one of the following. 08**
- i) Explain MySQL Architecture.
 - ii) Explain following variables:
 - a) `$_POST` b) `$_REQUEST`
 - c) `$_ENV` d) `$_COOKIES`

Seat No.	
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Set **P**

B.C.A. (Semester - III) (New) (CBCS) Examination: March/April-2023
Computer Networks – I (19409306)

Day & Date: Saturday, 08-07-2023
 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) The first Network was called _____.
 - a) CNET
 - b) ARPANET
 - c) ASAPNET
 - d) NSFNET
- 2) Which of the following layers is an addition to OSI model when compared with TCP IP model?
 - a) Application layer
 - b) Presentation layer
 - c) Session layer
 - d) Session and Presentation layer
- 3) In the OSI model, as a data packet moves from the lower to the upper layers, headers are _____.
 - a) Added
 - b) Rearranged
 - c) Removed
 - d) Randomized
- 4) When 2 or more bits in a data unit has been changed during the transmission, the error is called _____.
 - a) random error
 - b) burst error
 - c) inverted error
 - d) double error
- 5) A _____ set of rules that governs data communication.
 - a) Protocols
 - b) Standards
 - c) RFCs
 - d) Servers
- 6) Which transmission media provides the highest transmission speed in a network?
 - a) coaxial cable
 - b) twisted pair cable
 - c) optical fiber
 - d) None of these
- 7) Bits can be sent over guided and unguided media as analog signal by _____ modulation.
 - a) digital
 - b) amplitude
 - c) frequency
 - d) phase
- 8) Wireless transmission of signals can be done via _____.
 - a) radio waves
 - b) microwaves
 - c) infrared
 - d) all of the above

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

- a) Hamming Distance
- b) Gateway
- c) Internet working
- d) Bit Length
- e) Noise
- f) Twisted pair cable

- Q.3 Write short notes on any Two of the following. 08**
- 1) Analog Signal
 - 2) CDMAx
 - 3) Data Representation
- Q.4 Answer any Two of the following. 08**
- 1) Explain the star and ring topology.
 - 2) Explain the phase modulation in detail.
 - 3) Write a note on Packet switching.
- Q.5 Answer any One of the following. 08**
- 1) Draw and explain the OSI reference model.
 - 2) What is CSMA? Explain the CSMA/CD and CSMA/CA protocols.

Seat No.	
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**B.C.A. (Semester – III) (New) (CBCS) Examination: March/April-2023
Financial Accounting with Tally (19409307)**

Day & Date: Monday, 10-07-2023
Time: 09:00 AM To 12:00 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) Every debit has corresponding _____.
 - a) Debit
 - b) Credit
 - c) Right hand side
 - d) None of these
- 2) What is the full form of TCS?
 - a) Tax Collected by Staff
 - b) Tax Consumption at Source
 - c) Tax Collected at Source
 - d) Tax Collected from Sales
- 3) Cash, goods or assets invested by the proprietor in the business for earning profit is called -
 - a) Profit
 - b) Capital
 - c) Fixed Assets
 - d) None of these
- 4) What is the full form of GST?
 - a) Goods and Supply Tax
 - b) Goods and Services Tax
 - c) General Sales Tax
 - d) Government Sales Tax
- 5) The art of recording all business transactions in a systematic manner in a set of books is called -
 - a) Accounting
 - b) Book – keeping
 - c) Ledger
 - d) None of these.
- 6) Which shortcut key is used for Select Company in Tally?
 - a) F1
 - b) Alt + F1
 - c) F3
 - d) Alt + F3
- 7) Which shortcut key is used to take print of any report in Tally?
 - a) Ctrl + P
 - b) Shift + P
 - c) Alt + P
 - d) Alt + Ctrl + P
- 8) Credit balance of Trading Account means -
 - a) Gross Loss
 - b) Net Loss
 - c) Net Profit
 - d) Gross Profit
- 9) What is TAN _____?
 - a) Tax Absorb Number
 - b) Tax Assign Number
 - c) Tax Account Number
 - d) Tax Assessment Number

Q.5 Attempt any Two of the following.

a) Prepare a simple cash Book.

2019 April

1	Cash in hand	Rs.2,50
5	Cash paid to Suresh	Rs 1,000
7	Cash purchase	Rs. 500
14	Cash received from Poonam	Rs. 1,000
16	Cash Sales	Rs. 800
20	Paid Carriage	Rs. 100
25	Paid Salary	Rs. 500

b) From the following balances of Mangesh, prepare balance sheet as on 31st December, 2018.

Particulars	Debit (Rs)	Credit (Rs)
Plant and Machinery	8,00,000	
Land and Building	6,00,000	
Furniture	1,50,000	
Cash in hand	20,000	
Bank overdraft		1,80,000
Debtors and Creditors	3,20,000	2,40,000
Bills receivable and Bills payable	1,00,000	60,000
Closing stock	4,00,000	
Investment	80,000	
Capital		15,00,000
Drawings	1,30,000	
Net Profit		6,20,000
	26,00,000	26,00,000

c) From the following information, prepare trading and profit and loss account of Abhay for the year ending 31st December, 2016 and balance sheet as on that date. The closing stock on 31st December, 2016 was valued at Rs. 2,000.

	Rs.		Rs.
Opening stock	500	Purchases	1,300
Sales	5,000	Wages	700
Discount received	500	Salary	500
Building	50,000	Capital	50,000
Cash in hand	4,500		

Seat No.	
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B.C.A. (Semester - IV) (CBCS) Examination: March/April-2023
OOPS with C++ - II (19409401)

Day & Date: Monday, 19-06-2023
Time: 09:00 AM To 11:00 AM

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 Multiple choice questions.

08

- 1) How many specifiers are used to derive a class?

a) 1	b) 2
c) 3	d) 4
- 2) What is a virtual function in C++?
 - a) Any member function of a class
 - b) All functions that are derived from the base class
 - c) All the members that are accessing base class data members
 - d) All the functions which are declared in the base class and is re-defined/overridden by the derived class
- 3) The concept of deciding which function to invoke during runtime is called _____.
 - a) late binding
 - b) dynamic linkage
 - c) static binding
 - d) both late binding and dynamic linkage
- 4) What is meant by multiple inheritance?
 - a) Deriving a base class from derived class
 - b) Deriving a derived class from base class
 - c) Deriving a derived class from more than one base class
 - d) None of the mentioned
- 5) Which of the following is used to create an output stream?

a) ofstream	b) ifstream
c) iostream	d) fsstream
- 6) Which of the following is not used as a file opening mode?

a) ios::trunk	b) ios::binary
c) ios::in	d) ios::ate
- 7) Why do we need to handle exceptions?
 - a) To avoid unexpected behaviour of a program during run-time
 - b) To let compiler remove all exceptions by itself
 - c) To successfully compile the program
 - d) To get correct output

- 8) What is meant by the template parameter?
- a) It can be used to pass a type as an argument
 - b) It can be used to evaluate a type
 - c) It can of no return type
 - d) It can be used to delete a type

Q.2 Answer any four of the following. 08

- a) What is the difference between inheritance and polymorphism?
- b) What is Subclass?
- c) Which function is used to position back from the end of file object?
- d) What is return type of "is_open()" function?
- e) Why do we need to handle exceptions?
- f) Write the correct syntax of the try-catch block.

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

- a) Basic concepts of OOPs.
- b) Types of Templates in C++.
- c) Abstract base class.

Q.4 Answer any Two of the following. 08

- a) What is overriding in C++? Explain with suitable example.
- b) Write C++ program that demonstrates use of 'virtual base class'.
- c) Explain the following ostream member functions
put(), flush()

Q.5 Answer any one of the following. 08

- a) What is Exception? How exception is handled in C++ illustrate with one example?
- b) Write a program in C++ that checks two files are identical or not.

Seat No.	
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B.C.A (Semester - IV) (CBCS) Examination: March/April-2023
Data Structures using 'C'- 4.0 II (19409402)

Day & Date: Tuesday, 20-06-2023
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

Q.1 Multiple choice questions

08

- 1) Quick sort is a _____.
 - a) greedy algorithm
 - b) divide and conquer algorithm
 - c) dynamic programming algorithm
 - d) backtracking algorithm
- 2) What is a complete binary tree?
 - a) Each node has exactly zero or two children
 - b) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from right to left
 - c) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from left to right
 - d) A tree in which all nodes have degree 2
- 3) Which of the following is not true about QuickSort?
 - a) in-place algorithm
 - b) pivot position can be changed
 - c) adaptive sorting algorithm
 - d) can be implemented as a stable sort
- 4) A person wants to visit some places. He starts from a vertex and then wants to visit every place connected to this vertex and soon. What algorithm he should use?

a) Depth First Search	b) Breadth First Search
c) Trim's algorithm	d) Kruskal's algorithm
- 5) Which of the following is not an advantage of trees?
 - a) Hierarchical structure
 - b) Faster search
 - c) Router algorithms
 - d) Undo/Redo operations in a notepad
- 6) Heap sort is an implementation of _____ using a descending priority queue.

a) insertion sort	b) selection sort
c) bubble sort	d) merge sort
- 7) Dijkstra's Algorithm cannot be applied on _____.
 - a) Directed and weighted graphs
 - b) Graphs having negative weight function
 - c) Unweighted graphs
 - d) Undirected and unweighted graphs

- 8) Which of the following is not an application of binary search?
- a) To find the lower/upper bound in an ordered sequence
 - b) Union of intervals
 - c) Debugging
 - d) To search in unordered list

Q.2 Answer any four of the following. 08

- a) What is a binary search tree?
- b) Write any 4 applications of graph.
- c) Write the function of preorder & postorder of tree traversal.
- d) What is Hashing?
- e) What is an indexed sequential searching?
- f) Write any 4 applications of tree

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

- a) Radix sort
- b) Operations of Binary Tree
- c) Height Balanced Tree

Q.4 Answer any Two of the following. 08

- a) Explain Binary Expression Tree with example.
- b) Explain the types of Graph in detail.
- c) What is a searching? Explain its types in detail.

Q.5 Answer any one of the following. 08

- a) What is a Graph? Explain graph traversal in detail.
- b) WAP to demonstrate Selection sort.

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B.C.A (Semester - IV) (CBCS) Examination: March/April-2023
MYSQL (19409403)

Day & Date: Wednesday, 21-06-2023
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 identifies a row in a table as unique?
 - a) Regular Key
 - b) Main Key
 - c) Primary Key
 - d) Foreign Key
- 2) With SQL, how do you select all the columns from a table named "Persons"?
 - a) SELECT * FROM Persons;
 - b) SELECT *.Persons;
 - c) SELECT Persons;
 - d) SELECT all FROM Persons;
- 3) Which of the following is not a valid aggregate function?
 - a) COUNT
 - b) MAX
 - c) CALCULATE
 - d) MIN
- 4) A SELECT statement without a WHERE clause returns _____.
 - a) An error, because a SELECT statement is invalid without a WHERE clause.
 - b) All of the rows from a table.
 - c) All of the rows from a table that match the previous WHERE clause.
 - d) Nothing
- 5) If you want to undo a GRANT, you should use _____.
 - a) REVOKE
 - b) UNDO
 - c) UNGRANT
 - d) ROLLBACK
- 6) The SQL ALTER statement can be used _____.
 - a) to change in table data
 - b) to change in table structure
 - c) delete rows from the table
 - d) delete new record in the table
- 7) A data type can be changed after a table has been created.
 - a) True
 - b) False
- 8) A table column can have null values _____.
 - a) True
 - b) False

- Q.2 Answer any four of the following. 08**
- a) Explain update command.
 - b) Write a query to set Primary Key in MySQL.
 - c) Explain any 4 string functions.
 - d) Explain type conversion.
 - e) Define Grant Command.
 - f) Explain Foreign Key Constraint.
- Q.3 Write short notes on any two of the following. 08**
- a) Explain how to add & remove column in existing table using alter table command.
 - b) Explain Order by & Group by clause
 - c) Explain Architecture of MySQL.
- 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 the objective of Foot Printing?

Seat
No.

B.C.A. (Semester - IV) (CBCS) Examination: March/April-2023
Angular JS (19409405)

Day & Date: Friday, 23-06-2023
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

Q.1 Choose correct alternative from the following. 08

- 1) How many \$rootScope an AngularJS application can have?
 - a) Zero
 - b) One
 - c) Two
 - d) Infinity
- 2) Which of the following components can be injected as a dependency in AngularJS?
 - a) Value
 - b) Factory
 - c) Constant
 - d) Application Module
- 3) AngularJS applications are a mix of which of the following technologies?
 - a) HTML and PHP
 - b) HTML and JavaScript
 - c) HTML and TypeScript
 - d) PHP and JavaScript
- 4) What angular function is used to manually start up an angular application?
 - a) angular.bootstrap
 - b) angular.element
 - c) angular.copy
 - d) None of the above
- 5) What MVC stands for?
 - a) Model View Control
 - b) Model View Controller
 - c) Main View Controller
 - d) Main View Control
- 6) AngularJS is perfect for _____.
 - a) Create Single Page Applications
 - b) Creating a Desktop Application
 - c) Create Web Services
 - d) None of these
- 7) Which directive can be used to write AngularJS expressions?
 - a) ng-expression
 - b) ng-bind
 - c) ng-statement
 - d) ng-bindexpression
- 8) Which directive initializes application data?
 - a) ng-app
 - b) ng-init
 - c) ng-model
 - d) ng-application

Q.2 Answer any four of the following. 08

- 1) What is AngularJS?
- 2) Define Ng-app Directive.
- 3) What is an \$error directive?
- 4) Define Filter AngularJS.
- 5) What is scope in AngularJS?
- 6) State the syntax for UpperCase filter.

- Q.3 Write short note on any two of the following. 08**
- 1) Write Difference between AngularJS and JavaScript expressions?
 - 2) Write short notes Two way data binding.
 - 3) Write short notes on Currency and Number Formatting Filters.
- Q.4 Answer any two of the following. 08**
- 1) What is MVC? Explain MVC Architecture in details.
 - 2) Write a program to create a Single Page Application.
 - 3) Write a Sample “hello world” program using AngularJS.
- Q.5 Answer any one of the following. 08**
- a) What is Expressions? Explain Number and String Expressions.
 - b) Explain style directives and conditional directives with example.

- Q.2 Answer any four of the following.** **08**
- 1) Write full form of ARP, SNMP.
 - 2) Define routing.
 - 3) What is flow control?
 - 4) What is Congestion?
 - 5) What is Cryptography?
 - 6) Mention an authentication mechanism
- Q.3 Write short notes on any two of the following.** **08**
- 1) Distance Vector Routing
 - 2) TCP/IP
 - 3) Data Compression
- Q.4 Answer any two of the following.** **08**
- 1) Define Network security. Explain the network security techniques.
 - 2) Explain the different network services.
 - 3) How do you control the Congestion in Datagram Subnets?
- Q.5 Answer any one of the following.** **08**
- 1) Explain connection establishment and connection release in transport layer.
 - 2) What is routing algorithm? Explain shortest path routing with diagram.

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B.C.A. (Semester – IV) (CBCS) Examination: March/April-2023
Python Programming (19409407)

Day & Date: Sunday, 02-07-2023
 Time: 09:00 AM To 12:00 PM

Max. Marks: 80

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

Q.1 A) Multiple choice questions.**10**

- 1) Which of the following is not relational operator in python?

a) >=	b) <=
c) =	d) !=

- 2) Which one of the following is correct way of declaring and initialising a variable, x with value 10?

a) int x; x=10;	b) int x=10;
c) x=10	d) declare x=1 0

- 3) Which of the following will give error?

a) l, m, p="python", 10,14	b) l, m, p=10
c) l=m=p=12	d) None of the above

- 4) What is the output of the following code?


```
print(9//2)
```

a) 4	b) 4.5
c) 5	d) None of the above

- 5) Which operator is used to calculate power of m raise to n?

a) m^n	b) m*n
c) m**n	d) None of these

- 6) What is the value of x if:


```
x= int (43.55+10/2)
```

a) 44	b) 45
c) 46	d) 48

- 7) Python was developed by _____.

a) Dennis Ritchie	b) James Gosling
c) Guido van Rossum	d) Bjarne Stroustrup

- 8) What will be the output of following python code?


```
x=(10,50)
x. append((80,90,100))
print len(x)
```

a) 3	b) 2
c) 5	d) Error

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B.C.A (Semester - V) (New) (CBCS) Examination: March/April-2023
ENGLISH
(Business English) (20409501)

Day & Date: Sunday, 02-07-2023
 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 Rewrite the following sentence by choosing the correct alternatives: 08

- 1) What occasion is being celebrated in the story 'The Gift of the Magi'?
 - a) Easter
 - b) Christmas
 - c) New year's
 - d) Della's birthday
- 2) What was the aunt's reaction to Phatik living with the family?
 - a) sad
 - b) welcoming
 - c) overjoyed
 - d) annoyed and angry
- 3) What was the solitary reaper doing in the field?
 - a) Reaping the harvest
 - b) Tilling the field
 - c) Watering
 - d) Planting
- 4) What does Queen Gulnaar desire in the poem the Queen's Rival?
 - a) the king's attention
 - b) more jewellery
 - c) a rival
 - d) more clothes
- 5) Where did the schoolmaster live in the poem, 'The Village Schoolmaster'?
 - a) cottage
 - b) apartment
 - c) bungalow
 - d) mansion
- 6) What decides a person's future according to this poem "The Road Not Taken"?
 - a) the path one chooses to walk
 - b) the path one leaves behind
 - c) the regrets
 - d) the success
- 7) Soma had watched a movie.
 (Change the voice of above sentence)
 - a) A movie had watched by Soma.
 - b) A movie had been watched by Soma.
 - c) A movie had been watching by Soma.
 - d) None of the above
- 8) _____ the computer when you finish your work.
 (Fill in the blanks with phrasal verb related to technology)
 - a) Back up
 - b) Shut down
 - c) Sign up
 - d) Log in

- Q.2 Answer the following questions briefly. (Any Four) 12**
- a) Why was Della sad in the beginning of the story “The Gift of the Magi”?
 - b) How did Phatik feel arriving at the uncle’s house?
 - c) Write down the central idea of the poem “The Solitary Reaper” by William Wordsworth.
 - d) Write a note on character sketch of Queen Gulnaar.
 - e) How did the children view the schoolmaster in the poem “The Village Schoolmaster”?
 - f) Discuss the title of the poem “The Road Not Taken”. Is it appropriate for the poem?
- Q.3 Write down the answers of the following question. (Any One) 10**
What are learning skills and write down the four types of learning skills?
OR
Write down the importance of communication skill in the professional career?
- Q.4 Write down the answers of the following question. (Any One) 10**
What are 21st century skills?
OR
If you perceive a conflict between two employees in your office, what strategy would you adopt to ensure that they resolve their conflict and work better as a team?

Seat No.	
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Set **P**

**B.C.A. (Semester - V) (New) (CBCS) Examination: March/April-2023
Core Java (19409502)**

Day & Date: Monday, 03-07-2023
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 a) Multiple choice questions. 10

- 1) _____ is a super class of frame.
 - a) Pane
 - b) Applet
 - c) JFrame
 - d) Component
- 2) Which component is used to compile, debug and execute Java program?
 - a) JRE
 - b) JDK
 - c) JIT
 - d) JVM
- 3) _____ keyword must be used to inherit a class.
 - a) super
 - b) this
 - c) extent
 - d) extends
- 4) Class objects are created in _____ area.
 - a) Object area
 - b) Method area
 - c) Java stack
 - d) Heap area
- 5) _____ statement is used to call the procedures and functions.
 - a) Simple
 - b) Prepared Statement
 - c) File Reader
 - d) File Writer
- 6) Which of these events will be generated if we close a frame?
 - a) Action Event
 - b) Window Event
 - c) Component Event
 - d) Adjustment Event
- 7) _____ name method used to start a thread execution.
 - a) init ();
 - b) start ();
 - c) run ();
 - d) resume ();
- 8) Which of the following is a method having same name as that of its class?
 - a) finalize
 - b) delete
 - c) class
 - d) constructor
- 9) What is the numerical range of a char data type in Java?
 - a) -128 to 127
 - b) 0 to 256
 - c) 0 to 32767
 - d) 0 to 65535
- 10) _____ keyword must be used to monitor for exceptions.
 - a) try
 - b) finally
 - c) throw
 - d) catch

- b) One Sentence Answer.** **06**
- 1) What is package?
 - 2) What is API?
 - 3) Give the definition of Applet.
 - 4) What is event?
 - 5) What is class?
 - 6) What is mean by implicit object?
- Q.2 Solve any eight of the following.** **16**
- a) Write any 4 java operators.
 - b) What is the use of 'final' keyword?
 - c) Give the stages of thread life cycle.
 - d) Define 'this' keyword.
 - e) Give the names of JDBC drivers.
 - f) Explain Catch exception.
 - g) What is mean by object?
 - h) Give any 5 data types in java.
 - i) Define static method.
 - j) Write any 5 keywords in java.
- Q.3 a) Attempt any two of the following.** **10**
- 1) Write a java program to check whether no. is Prime or not.
 - 2) What is abstract class? Give syntax & example.
 - 3) Explain JDK tools in detail.
- b) Explain in detail Java Thread Cycle.** **06**
- Q.4 a) Attempt any two of the following.** **08**
- 1) What is Listener? Explain Action Listener with example.
 - 2) Write a java program to check whether no. is Perfect or not.
 - 3) Give the features of JDBC.
- Q.4 b) Write a program to check whether no. is amstrong or not. (Java Program)** **08**
- Q.5 Attempt any two of the following.** **16**
- a) What is Exception? Give the types of Exception.
 - b) Explain JDBC drivers.
 - c) What is Callable Statement? Give example code of it.

Seat No.	
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Set **P**

**B.C.A. (Semester - V) (New) (CBCS) Examination March/April-2023
Visual Programming (19409503)**

Day & Date: Tuesday, 04-07-2023
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 a) Multiple choice questions. 10

- 1) Which of the following statements is incorrect about delegate?
 - a) Delegates are reference types
 - b) Delegates are object oriented
 - c) Delegates are type-safe
 - d) Only one method can be called using a delegate
- 2) An Event is _____.
 - a) The result of a users action
 - b) result of a party
 - c) code to force users action
 - d) a delegate
- 3) Choose the wrong statement about the LINQ?
 - a) The main concept behind the linq is query
 - b) linq makes use of foreach loop to execute the query
 - c) It is not required that linq should make use of IEnumerable interface
 - d) None of the mentioned
- 4) Which LINQ statement is used to merge two data sources to perform queries?

a) where	b) select
c) join	d) group
- 5) Which of these keywords is not a part of exception handling?

a) try	b) finally
c) thrown	d) catch
- 6) A delegate defines _____.
 - a) Washington representative
 - b) class that encapsulates methods
 - c) means of passing arrays into methods
 - d) substitute for an inherited method
- 7) To fill a dataset for a report include _____ at the top of the file.
 - a) Imports CiystalDecisions.CrystalReports
 - b) CrystalDecisions.CrystalReports.Engine
 - c) Exports CrystalDecisions.CrystalReports.Engine
 - d) Imports CiystalDecisions.CrystalReports.Engine
- 8) How can you enhance the performance of crystal reports?
 - a) Avoid using sub-reports as it hampers the performance
 - b) Use report bursting indexes
 - c) crystal_reports_hosting
 - d) All of these

- 9) An Event has _____ as default return type.
 a) No return type for events b) String
 c) Double d) Integer
- 10) In Inheritance which of the following members of base class are accessible to derived class members?
 a) static b) protected
 c) private d) shared

b) Fill In the blanks.

06

- 1) _____ assemblies can be stored in Global Assembly Cache.
- 2) A _____ is an identifier assigned to memory location where data is stored.
- 3) SOAP Stands for _____.
- 4) _____ objects are immutable.
- 5) The modifiers used to define an array of parameters or list of arguments is _____.
- 6) _____ is used to access members of class before the object of that class is created.

Q.2 Solve any eight of the following. (Any 8)

16

- a) Give the characteristics of abstract class.
- b) Differentiate between value type and reference type.
- c) What is Exception?
- d) Explain Enumerations.
- e) What is boxing? How is it achieved?
- f) List different stream classes.
- g) Define Constructor.
- h) What is namespace?
- i) What is the importance of finally block?
- j) What is the difference between SDI and MDI?

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

10

- 1) What is delegate? Explain types of delegates.
- 2) Write a note on method overloading.
- 3) Write a program to implement generic class.

- b) What is method overriding? Explain with suitable example.

06

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

08

- 1) Explain the parameter passing techniques in detail.
- 2) Explain Indexer with example.
- 3) Explain CLR in detail.

- b) Write a program to handle custom exception.

08

Q.5 Solve any two questions of the following:

16

- a) Explain .Net framework with suitable block diagram in detail.
- b) What is operator overloading? Write a program to overload any two binary operators.
- c) What is inheritance? Explain types of inheritance.

Seat No.	
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Set **P**

B.C.A. (Semester - V) (New) (CBCS) Examination March/April-2023
Recent Trends in IT (19409505)

Day & Date: Thursday, 06-07-2023
 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 is the most recent pronouncement of the government's commitment to improving environmental conditions?
 - a) National Environmental Policy
 - b) National Water Policy
 - c) Environment Act
 - d) Air Policy
- 2) Which of the following are the features of cloud computing?
 - a) Security
 - b) Availability
 - c) Large Network Access
 - d) All of the mentioned
- 3) Which of the following is a type of cloud computing service?
 - a) Service-as-a-Software (SaaS)
 - b) Software-and-a-Server (SaaS)
 - c) Software-as-a-Service (SaaS)
 - d) Software-as-a-Server (SaaS)
- 4) Which of the following is the application of cloud computing?
 - a) Adobe
 - b) Paypal
 - c) Google G Suite
 - d) All of the above
- 5) Which of the following is an example of a SaaS cloud service?
 - a) Google Workspace
 - b) Dropbox
 - c) Salesforce
 - d) All of the above
- 6) IBM and _____ have announced a major initiative to use Hadoop to support university courses in distributed computer programming.
 - a) Google Latitude
 - b) Android (operating system)
 - c) Google Variations
 - d) Google
- 7) Above the file systems comes the _____ engine, which consists of one Job Tracker, to which client applications submit MapReduce jobs.
 - a) MapReduce
 - b) Google
 - c) Functional programming
 - d) Facebook
- 8) Which of the following is one of the key data science skills?
 - a) Statistics
 - b) Machine Learning
 - c) Data Visualization
 - d) All of the mentioned

- 9) Which of the following type of virtualization is also characteristic of cloud computing?
- a) Storage
 - b) Application
 - c) CPU
 - d) All of the mentioned
- 10) What is the full form of IoT?
- a) Internet of Technology
 - b) Incorporate of Things
 - c) Internet of Things
 - d) Incorporate of Technology

b) Define following terms.**06**

- 1) Green disposal
- 2) describe the 3Rs of green IT
- 3) Big-Data
- 4) Types of big-data
- 5) 3 V's of Big data
- 6) Public Cloud

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

- a) Deployment Models
- b) IaaS Stands for
- c) Virtualization
- d) Define IOT
- e) Environmental Impact of IT
- f) Role of Data Scientist
- g) Application of big-data
- h) BI Stands for
- i) Energy Saving Software
- j) Hadoop YARN Stands for

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

- 1) Explain Burden and Opportunity in green it.
- 2) Explain HDFS Architecture.
- 3) Write a short note on role of Data Scientist.

b) Write a short note on Deployment model.**06****Q.4 a) Attempt any Two of the following.****08**

- 1) Write a short note on IOT Framework.
- 2) Define cloud computing and explain essential characteristics.
- 3) Write a short note on Probability distribution.

Q.4 b) Define IOT and explain IOT Architecture.**08****Q.5 Attempt any Two of the following.****16**

- a) Hadoop Master Slave Architecture
- b) Data Science Vs BI
- c) Define machine learning and explain types of machine learning.

- B) True or False.** **06**
- 1) The system administrator is responsible for setting up and maintaining the system or server.
 - 2) Directory is a type of file.
 - 3) CentOS is sponsored by Red Hat.
 - 4) rm command in linux removes given directory.
 - 5) Linux operating system allows users to create commands?
 - 6) A Linux file system is a structured collection of files on a disk drive or a partition.

- Q.2 Solve any EIGHT of the following.** **16**
- a) Hardware requirement
 - b) Process status
 - c) DHCP
 - d) Ping
 - e) X System
 - f) NFS
 - g) Software requirements
 - h) File compression
 - i) System process
 - j) Special groups

- Q.3 A) Attempt any Two of the following.** **10**
- 1) Explain Difference between Windows and Linux.
 - 2) What is the role of system administrator?
 - 3) Write a shell script to find out the greatest among three inputs.
- B) Explain Network tools in linux (ping, finger, trace route, who, host, rlogin, slogin, rcp, rsh,ssh). (Any 7)** **06**

- Q.4 A) Attempt any two of the following.** **08**
- a) Explain process Boot Loaders.
 - b) Explain Linux Working environments.
 - c) Explain Hierarchy of file system.
- B) Explain Control and Loop structure of shell.** **08**

- Q.5 Attempt any two of the following.** **16**
- a) Explain distributions and features of Linux OS in detail.
 - b) Explain Linux commands (mkdir, rm, cd, mv, cp, pwd, ls, cat, head, tail, more, less, sort, uniq, egrep) syntaxes with proper output (Any 8)
 - c) Explain Multiple jobs in background and foreground and changing process priority with nice.

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B.C.A. (Semester - VI) (New) (CBCS) Examination: March/April-2023
ENGLISH

Literary Mindscapes – I (19409601)

Day & Date: Monday, 19-06-2023
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 questions by choosing the correct option.

08

- 1) What did the Quicks garden have near the pond?
 - a) vegetable patch
 - b) pool
 - c) fruit orchard
 - d) tree house
- 2) How much money was Aksionov accused of stealing?
 - a) 8000 rubles
 - b) 20000 rubles
 - c) 2000 rubles
 - d) 80000 rubles
- 3) What kind of room are the children sitting in the poem "Sita"?
 - a) out in the open
 - b) a darkened room
 - c) classroom
 - d) bedroom
- 4) What makes for itself a cooling covert against the hot season?
 - a) daffodils
 - b) beauty
 - c) clear rills
 - d) animals
- 5) What springs again like elastic in the poem "Life"?
 - a) tragedy
 - b) family
 - c) hope
 - d) death
- 6) What does the line "An endless fountain of immortal drink" refer to?
 - a) the continuous flow of sacred or holy water
 - b) water of Ganges
 - c) water from the Yamuna
 - d) water from the tap
- 7) The lion roared fiercely. (Identify the adverb)
 - a) fiercely
 - b) the lion
 - c) roared
 - d) None of the above
- 8) She said, "I want to talk to you" (Change into reported speech)
 - a) She said that she wanted to talk to him/her.
 - b) She told that she wants to talk to you.
 - c) She said that I want to talk to you.
 - d) None of the above

Q.2 Answer the following questions in brief.

12

- 1) Why was the Quick family garden wild and carefree?
- 2) What was the major change in the character of Aksionov in prison?
- 3) Explain the story of Sita in the poem "Sita"?
- 4) How does the duke reveal his role in the death of the duchess?
- 5) Why "Ode to Beauty" considered to be a romantic poem?
- 6) Describe the imagery in the poem "Life"?

Q.3 Write down the answer of any one of the following. 10

- 1) Explain the literacy skill “Technology Literary” and its importance.
- 2) Explain Life Skills (FLIPS).

Q.4 Write down the answer of any one of the following. 10

- 1) Explain the characteristics of a good leader.

OR

- 2) Discuss and write the following important skills and its use in the present age in your own words.

- a) Environment consciousness
- b) Global Awareness
- c) Health Literacy

Seat No.	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: March/April-2023
Advanced Java (19409602)**

Day & Date: Tuesday, 20-06-2023
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 A) Multiple choice questions. 10

- 1) Which of the following is not a core component of Hibernate?
 - a) Criteria
 - b) Transaction
 - c) Session
 - d) Provider
- 2) HQL stands for _____.
 - a) Hibernate Query Language
 - b) High Query Language
 - c) High Queue Language
 - d) None of these
- 3) CGI stands for _____.
 - a) Computer Gateway Information
 - b) Common Gateway Interface
 - c) Client Gateway Interface
 - d) Common Gateway Interchange
- 4) _____ website nothing on the page will change by the user or even site administrator.
 - a) Static
 - b) Dynamic
 - c) Standard
 - d) None
- 5) The _____ method in Servlets is used to process the HttpPost() requests.
 - a) doGet()
 - b) doPost()
 - c) sendRedirect()
 - d) None
- 6) _____ represents object of pageContext which is used to access context data for page execution.
 - a) Out
 - b) Page
 - c) Page context
 - d) Page set up
- 7) _____ JSTL function tests if an input string contains the specified substring.
 - a) fn: join()
 - b) fn: replace()
 - c) fn: split
 - d) fn: contains()
- 8) _____ XML JSTL tag sets a variable to the value of an xpath expression.
 - a) <x:if>
 - b) <x:set>
 - c) <x:when>
 - d) <x:param>

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**B.C.A. (Semester – VI) (New) (CBCS) Examination: March/April-2023
Dot Net Technology (19409603)**

Day & Date: Wednesday, 21-06-2023
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 right indicate full marks.
 - 4) Use of log table and calculators is allowed.

Q.1 A) Choose the correct alternative from the option. 10

- 1) _____ is an extension of the sitemap file.
 - a) .map
 - b) .sitemap
 - c) .site
 - d) None of these
- 2) Default scripting language in ASP.Net. _____.
 - a) EcmaScript
 - b) VBScript
 - c) PERL
 - d) JavaScript
- 3) Ajax stands for Synchronous JavaScript and XML.
 - a) True
 - b) False
- 4) _____ directive is used link an assembly to a page or user.
 - a) @Page
 - b) @Import
 - c) @Assembly
 - d) @Reference
- 5) _____ is a valid property for Literal Control.
 - a) ID
 - b) runat
 - c) Name
 - d) Both a and b
- 6) _____ property is common for all validation control.
 - a) ControlToValidate
 - b) Type
 - c) Error
 - d) All of these
- 7) How do you get information from a form that is submitted using the "post" method?
 - a) Request.QueryString
 - b) Request.Form
 - c) Response.write
 - d) Response.writeIn
- 8) What type of data can Cookies store?
 - a) String
 - b) encrypt
 - c) DateTime
 - d) Int32
- 9) Web service can be discovered using _____.
 - a) UDDI
 - b) UDDII
 - c) UDDDI
 - d) UDII
- 10) What is the base class from which all Web forms inherit?
 - a) Master Page
 - b) Page Class
 - c) Session Class
 - d) None of the Above

- B) Fill in the blank.** **06**
- 1) A _____ is a collection of settings that define the look of controls and web pages.
 - 2) _____ are a State Management Technique that can store the values of control after a post-back.
 - 3) A _____ is a software program that uses XML to exchange information with other software via common internet protocols.
 - 4) _____ is the method to preserve the Value of the Page and Controls between round trips.
 - 5) Configuration settings in ASP.NET are stored _____ files that you can easily read and edit.
 - 6) The extension of MasterPage is _____.

- Q.2 Solve any Eight of the following.** **16**
- 1) Write the features of ASP.Net.
 - 2) Define web service.
 - 3) What is the difference between the ASP and ASP.NET?
 - 4) What is the difference between a page theme and a global theme?
 - 5) How to display validation messages in one control?
 - 6) What is the difference between Web.config and Machine.config files?
 - 7) List out the properties of Calendar control.
 - 8) What is the use of Global.asax file?
 - 9) What's the use of Response.Output.Write()?
 - 10) What is a cookie?

- Q.3 A) Attempt any Two of the following.** **10**
- 1) Why Master page required? Explain nested master pages with examples.
 - 2) Explain client and server architecture of AJAX.
 - 3) Explain Multi View Control with example.

- B) Write short note on Proxy in web services with example.** **06**

- Q.4 A) Attempt any Two of the following.** **08**
- 1) What is navigation? Explain TreeView control with example.
 - 2) What is ADO.Net? Explain architecture of ADO.Net.
 - 3) Explain validation group property with example.

- B) Explain cross-page posting in detail** **08**

- Q.5 Attempt any Two of the following.** **16**
- a) Explain ASP.Net page life cycle.
 - b) What is Personalization? Explain personalization model with tag.
 - c) What is state management? Explain different state management techniques in detail.

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**B.C.A. (Semester - VI) (New) (CBCS) Examination: March/April-2023
Data Warehouse and Data Mining (19409604)**

Day & Date: Thursday, 22-06-2023
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) Use of log tables and calculators allowed
4) Draw a neat labelled diagram wherever necessary.

Q.1 A) Choose the correct alternative. 10

- 1) _____ Measure minimizes the expected number of tests to classify a given tuple.

a) Gini index	b) Gain ratio
c) Information gain	d) None
- 2) _____ is used to day to day operations.

a) OLTP	b) OLAP
c) OLAM	d) None
- 3) _____ is a summarization of the general characteristics or features of a target class of data.

a) Data Characterization	b) Data Classification
c) Data discrimination	d) Data selection
- 4) Outlier analysis is used on data objects which are _____ than set of data.

a) Similar	b) Dissimilar
c) Different	d) None
- 5) The FP-growth algorithm has _____ phases.

a) One	b) Two
c) Two	d) Four
- 6) Which of the following is the collection of data objects that are similar to one another within the same group?

a) Partitioning	b) Grid
c) Cluster	d) Table
- 7) _____ function is obtained by applying a distributive aggregate function.

a) Distributive	b) Holistic
c) Algebraic	d) None

- 8) The type of relationships in Star Schema _____.
 - a) One to many
 - b) Many to many
 - c) Many to one
 - d) One to one
- 9) _____ variable has only two states.
 - a) Interval scale
 - b) Binary
 - c) Categorical
 - d) Ordinal
- 10) _____ rule involves associations between presence or absence of items.
 - a) Multilevel
 - b) Correlation
 - c) Boolean
 - d) Single level

B) Fill in the blanks.

06

- 1) The goal of _____ is to discover both the dense and sparse regions of a data set.
- 2) The basic idea of the Apriori algorithm is to generate _____ item sets of a particular size & scans the database.
- 3) _____ method of analysis does not classify variables as dependent or independent.
- 4) The _____ server is used to store and analyze highly volatile and changeable data.
- 5) _____ is not a data pre-processing method.
- 6) _____ normalization is not very well efficient in handling the outliers.

Q.2 Answer the following (any eight)

16

- 1) What is data characterization?
- 2) What is correlation analysis for numeric data?
- 3) What is meant by clustering?
- 4) Define OLAP.
- 5) Define Fact table.
- 6) What is roll-up operation?
- 7) Define support and confidence in Association rule mining.
- 8) What is Bayesian Belief Networks?
- 9) What is web mining?
- 10) What is data reduction?

Q.3 A) Attempt the following. (any two)

10

- 1) Explain difference between MOLAP and ROLAP.
- 2) Explain Data summarization.
- 3) Explain closed frequent item sets.

B) Write short note on spatial data mining.

06

Q.4 A) Attempt the following. (any two) 08

- 1) Explain K-nearest-Neighbour classification.
- 2) Explain outlier detection.
- 3) Explain various applications of data mining.

B) Solve the following. 08

Using Equi-depth binning method, partition the data given below into 4 bins and perform smoothing according to the following methods.

Smoothing by bin means,
 Smoothing by bin median,
 Smoothing by bin boundaries.

24,25,26,27,28,56,67,70,70,75,78,89,89,90,91,94,95,96,100,102,103,107,109,112

Q.5 Attempt the following. (any two) 16

- a) Explain the various components of Data warehouse.
- b) Explain different data types used in clustering.
- c) A database consists of nine transactions taken from grocery store. Enumerate all the frequent itemsets using Apriori algorithm with minimum support threshold $S= 3$ and minimum confidence threshold $C=50\%$. Show the candidate and frequent itemsets for each database scan. List all the association rules that are generated and highlight the strong ones, sort them by confidence.

Tid	Items
1	Milk, Bread, Eggs
2	Bread, Sugar
3	Bread, Cereal
4	Milk, Bread, Sugar
5	Milk, Cereal
6	Bread, Cereal
7	Milk, Cereal
8	Milk, Bread, Eggs, Cereal
9	Milk, Bread, Cereal

Seat No.	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: March/April-2023
Cryptography and Network Security (19409605)**

Day & Date: Friday, 23-06-2023
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 A) Multiple choice questions. 10

- 1) _____ Is the science and art of transforming messages to make them secure and immune to attacks?
 - a) Cryptography
 - b) Cryptoanalysis
 - c) Hash function
 - d) Digital signature
- 2) Caesar Cipher is an example of _____.
 - a) Poly-alphabetic Cipher
 - b) Mono-alphabetic Cipher
 - c) Multi-alphabetic Cipher
 - d) Bi-alphabetic Cipher
- 3) Rail Fence Technique is an example of _____.
 - a) Substitution
 - b) Transposition
 - c) Product cipher
 - d) Caesar cipher
- 4) The sub key length at each round of DES is _____.
 - a) 32
 - b) 56
 - c) 48
 - d) 64
- 5) Which one of the following is active attack?
 - a) Masquerade
 - b) Traffic analysis
 - c) Eavesdropping
 - d) Shoulder surfing
- 6) A firewall that uses two TCP connections is _____.
 - a) Bastion
 - b) Application gateway
 - c) Circuit level gateway
 - d) Packet filtering
- 7) IPsec services are available in _____ Layer.
 - a) Application
 - b) Data link
 - c) Network
 - d) Transport
- 8) The secure socket layer provides _____.
 - a) Encryption of messages sent by both client and server
 - b) Server authentication
 - c) Optional client authentication
 - d) All of these
- 9) For confidentiality, data to be sent is _____.
 - a) Encrypted
 - b) Decrypted
 - c) Corrected
 - d) Both (a) and (b)
- 10) Biometric authentication works on the basis of _____.
 - a) Human characteristics
 - b) Passwords
 - c) Smart cards
 - d) Pin

Seat No.	
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Set **P**

**B.C.A. (Semester - VI) (New) (CBCS) Examination March/April-2023
Advanced Python (19409606)**

Day & Date: Saturday, 01-07-2023
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 a) Multiple choice questions. 10

- 1) _____ package manager system is used to install Django.
 - a) POP
 - b) PIP
 - c) pip
 - d) None of the above
- 2) Which method of the socket module allows a server socket to accept requests from a client socket from another host?
 - a) socket.accept()
 - b) socket.sendto(address)
 - c) socket.acceptsocket
 - d) none
- 3) What is the difference between the TCP and UDP protocols?
 - a) TCP is compatible with Python, while UDP is not
 - b) There are no differences
 - c) TCP is not connection-oriented, while UDP is
 - d) TCP is connection-oriented, while UDP is not
- 4) Which architecture pattern Django uses _____.
 - a) MVC
 - b) MVT
 - c) HTML
 - d) PVT
- 5) Django is written in _____ language.
 - a) Python
 - b) JAVA
 - c) .net
 - d) C
- 6) fg in tkinter widget is stands for _____.
 - a) active foreground
 - b) background
 - c) foreground
 - d) fore guard
- 7) How the grid() function put the widget on the screen?
 - a) According to x, y coordinates
 - b) According to left, right and top
 - c) According to row and column
 - d) None of the above
- 8) An XML document can be depicted using what kind of structure?
 - a) A. Paragraph
 - b) Tree
 - c) Stem and Leaf
 - d) Nested
- 9) What does XML stand for?
 - a) Extensible Method Language
 - b) Example Markup Language
 - c) Extensible Markup Language
 - d) Both a and c

10) Which function searches through the XML tree and retrieves the element that matches the specified tag.

- a) find
- b) findtag
- c) match
- d) xmltag

b) Fill in the blank.

06

- 1) config() in python tkinter is used for _____.
- 2) Django was first publicly released in _____.
- 3) _____ is the correct way to draw a line to canvas tkinter.
- 4) XML is designed to store data and _____.
- 5) _____ module used in DOM xml parser.
- 6) To send email in python we use _____ module.

Q.2 Solve any eight of the following.

16

- a) What are the advantages of Django?
- b) What is use of API?
- c) What is socket?
- d) What is use of XML parser?
- e) Which languages used for Django templates?
- f) Explain text widget.
- g) Explain radio button widget.
- h) Write difference between project and app.
- i) What is Web Framework?
- j) Explain canvas layout Management.

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

10

- 1) Explain Django templates.
- 2) Explain DOM API's.
- 3) Explain SAX parser in detail.

b) Write short note on Django views.

06

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

08

- 1) What is event? Explain tkinter events.
- 2) Explain TCP/IP server methods.
- 3) Describe MVC design pattern.

b) Explain different containers used in python.

08

Q.5 Attempt any two of the following.

16

- a) Explain socket programming. Write python program to send email.
- b) Explain template and forms in Django with example.
- c) Explain all the methods that are used in etree module of xml parser.