

Seat No.	
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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2023**  
**ENGLISH (COMPULSORY)**  
**Communication Skill (BCA1101)**

Day & Date: Monday, 20-11-2023  
 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 given options.**

**08**

- 1) Where did Gandhi meet his missionary friends?
  - a) Orissa
  - b) Vellore
  - c) Madras
  - d) Panji
- 2) What was the school attached to?
  - a) Bus stand
  - b) Hospital
  - c) Temple
  - d) Library
- 3) According to Rabindranath Tagore what is necessary to win freedom?
  - a) Patience
  - b) Friends
  - c) Allies
  - d) Wars
- 4) Who sang praises for the flowers?
  - a) Bard
  - b) Oracle
  - c) Saints
  - d) Birds
- 5) How does the father discover the son in his room?
  - a) Sleeping
  - b) Sobbing
  - c) Playing
  - d) Reading
- 6) What is the suitable prefix of the word – Legal?
  - a) unlegal
  - b) illegal
  - c) inlegal
  - d) delegal
- 7) What is the suitable suffix of the word – Manage?
  - a) Manage
  - b) Management
  - c) ill manage
  - d) Pre manage
- 8) Which of the following is used to join sentences, clauses and words?
  - a) adverbs
  - b) interjection
  - c) conjunction
  - d) verb

**Q.2 Write the answer in short. (Any Four)**

**12**

- a) What is the context of Gandhi's talk on religion?
- b) What kind of relationship did the author have with his grandmother?
- c) Discuss the poet's state of mind in the poem - Let Me Not Pray to be Sheltered from Danger.
- d) Discuss the theme of the poem - The Lotus.
- e) Define the ending of the poem - The Toys in your words.
- f) What is the significance of the Sparrows in the lesson - The Portrait of a Lady?

- Q.3 Answer the following questions. (Any One)** **10**
- a) Define what is Communication and the process of Communication?
- OR**
- b) Write in detail about the channels of Communication.
- Q.4 Write a detail note on various intrapersonal skills?** **10**

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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2023  
Fundamentals of Computer (Paper - I) (BCA1102)**

Day & Date: Tuesday, 21-11-2023  
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 for 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 contain 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 the following 08**

- a) What is hybrid computer?
- b) What is PROM?
- c) What is WWW?
- d) What is Memory Cell?
- e) What is a volatile and non-volatile memory?
- f) Give the List of computer applications.

- Q.3 Write short notes on any two of the following. 08**
- a) Internet
  - b) RAM
  - c) Magnetic tape
- Q.4 Answer any Two of the following. 08**
- a) What is software? Explain different types of system software.
  - b) Explain types of network.
  - c) What is pointing Device? Explain the types of mouse.
- Q.5 Answer any one of the following. 08**
- a) What is computer? Explain types of Computer in details.
  - b) What is programming language? Explain high level language and its advantages.

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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2023  
Office Automation (Paper - II) (BCA1103)**

Day & Date: Wednesday, 22-11-2023  
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 necessary diagrams whenever necessary.  
4) Use of logarithmic table and calculator is allowed.

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

**08**

- 1) What is the function of Ctrl+B in Ms-Word.
  - a) It converts selected text into the next larger size of the same font.
  - b) It adds a line break to the document.
  - c) It makes the selected text bold.
  - d) It applies italic formatting to the selected text.
- 2) In Microsoft Word shortcut key Ctrl+W is used for \_\_\_\_\_.
  - a) Open the print dialog box
  - b) Update the current web page
  - c) Close the current window
  - d) None of these
- 3) Which shortcut key is used to spell check in MS-Word?
  - a) f1
  - b) f2
  - c) f7
  - d) f9
- 4) Why header and footer 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 header and footer to appear on document when it is printed
- 5) To start slide show of a presentation
  - a) Press f5 key
  - b) Press f7 key
  - c) Press f6 key
  - d) Press f8 key
- 6) What is the extension of power point file?
  - a) .pmt
  - b) .pnt
  - c) .ppt
  - d) .pdf
- 7) By default an excel work book displays \_\_\_\_\_ work sheets.
  - a) 1
  - b) 2
  - c) 3
  - d) 5
- 8) Windows is an operating system.
  - a) True
  - b) False

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

**08**

- a) What is a window? List any two its task.
- b) What is Title Bar?
- c) What is MS Access?
- d) What is the use of MS-Excel?
- e) What is PowerPoint.
- f) What is software?

- Q.3 Write Short Notes. (Any Two) 08**
- a) Explain Dialog Box.
  - b) How to insert page number on MS-Word?
  - c) Explain any three components of window.
- Q.4 Answer of the following questions. (Any Two) 08**
- a) Explain any four shortcuts in MS-Word.
  - b) Explain Save and Save As command in MS-Word.
  - c) Explain any four MS-Excel features.
- Q.5 Answer of the following questions. (Any One) 08**
- a) How we create a new database in MS-Access. Explain Steps.
  - b) What is Presentation? Explain Steps of Creating Presentation.

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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2023**  
**Programming and Problem Solving Using 'C' (Paper - I) (BCA1104)**

Day & Date: Thursday, 23-11-2023  
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 for the following.**

**08**

- 1) C language developed by \_\_\_\_\_.
  - a) Martin Richards
  - b) Dennis Ritchie
  - c) Ken Thompson
  - d) None
- 2) C language contains \_\_\_\_\_ Keywords.
  - a) 23
  - b) 32
  - c) 36
  - d) 63
- 3) The \_\_\_\_\_ function is used to display output on to the screen.
  - a) scanf()
  - b) printf()
  - c) getchar()
  - d) print()
- 4) \_\_\_\_\_ escape sequence character causes the cursor to move to the next line.
  - a) \t
  - b) \a
  - c) \n
  - d) \b
- 5) \_\_\_\_\_ operator not operates on float type operands.
  - a) /
  - b) \*
  - c) %
  - d) +
- 6) \_\_\_\_\_ is not operator in C language.
  - a) sizeof
  - b) +
  - c) \*
  - d) #
- 7) \_\_\_\_\_ is the exit-controlled loop.
  - a) for
  - b) while
  - c) do-while
  - d) none
- 8) \_\_\_\_\_ is the pictorial representation of algorithm.
  - a) algorithm
  - b) problem
  - c) Flowchart
  - d) none of these

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

**08**

- a) What is algorithm?
- b) What are the arithmetic operators?
- c) Explain if-else statement.
- d) What is string?
- e) What is two dimensional array?
- f) What is logic?

- Q.3 Write notes on any two of the following. 08**
- a) Conditional operators
  - b) Switch statement
  - c) For loop
- Q.4 Answer any Two of the following. 08**
- a) Explain the different types of logics.
  - b) Explain any four string inbuilt functions.
  - c) Write a C program to check entered number is divisible by 4 or not.
- Q.5 Answer any one of the following. 08**
- a) Explain structure of C program.
  - b) Write an algorithm and C program to check entered number is Armstrong or not.



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

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

Max. Marks: 40

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

**Q.1 Multiple choice questions.**

**08**

- 1) Which of the following is the correct syntax to display the hyperlinks without any underline?
  - a) `a {text-decoration : underline;}`
  - b) `a {decoration : no-underline;}`
  - c) `a {text-decoration : none;}`
  - d) None of the above
- 2) What are the new form elements introduced in html5?
  - a) 2
  - b) 3
  - c) 4
  - d) 5
- 3) Which of the following is the correct syntax to make the background-color of all paragraph elements to yellow?
  - a) `p {background-color : yellow;}`
  - b) `p {background-color : #yellow;}`
  - c) `all {background-color : yellow;}`
  - d) `all p {background-color : #yellow;}`
- 4) Are the negative values allowed in padding property?
  - a) Yes
  - b) No
  - c) Can't say
  - d) May be
- 5) The CSS property used to specify the transparency of an element is \_\_\_\_\_.
  - a) opacity
  - b) filter
  - c) visibility
  - d) overlay
- 6) `<input>` is \_\_\_\_\_.
  - a) an format tag.
  - b) an empty tag.
  - c) All of the above
  - d) None of the above
- 7) In a CSS file, there is a CSS rule for paragraphs tags - what does p can be called?
  - a) Selector
  - b) Attribute
  - c) Property
  - d) Tag
- 8) Which of the following is the correct way to create a list using the lowercase letters?
  - a) `<ol alpha = "a" >`
  - b) `<ol type = "a">`
  - c) `<ol letter = "a">`
  - d) None of the above

- Q.2 Answer any four of the following. 08**
- a) What is an Event explain with example.
  - b) What is use of table tag explain with example.
  - c) Explain the canvas tag with example.
  - d) What is use of header and footer in web page.
  - e) What is Media tag?
  - f) What is DOCTYPE Element?
- Q.3 Write short notes on any two of the following. 08**
- a) Padding
  - b) Singular and Paired tags
  - c) 2D and 3D Transformations.
- Q.4 Answer any Two of the following. 08**
- a) Explain GET and POST methods with example.
  - b) What is multiple column layout?
  - c) Explain CSS Properties details.
- Q.5 Answer any one of the following. 08**
- a) Explain the Form tag with input tag attributes.
  - b) What is Web Technology? What are the features of Web Site?



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

- a)  $A = \begin{bmatrix} 0 & 2 \\ 4 & 5 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 2 \\ 4 & 0 \end{bmatrix}$  then find  $AB = ?$
- b)  $A = \begin{bmatrix} 0 & 2 \\ 4 & 5 \end{bmatrix}$  then find  $A^T = ?$
- c) If  $c = \begin{bmatrix} 2 & 10 \\ 11 & 10 \end{bmatrix}$  then find inverse of  $c$ .
- d) Draw the truth table of  $[p \wedge (p \rightarrow Nq)] \rightarrow p$
- e) State Addition principle.
- f) Definition of disjoint sets.

**Q.3 Write Short Notes. (Any Two)**

08

- a) Matrix representation of Relation.
- b) State and prove Distributive law.
- c) State and prove De-Morgan's law.

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

08

- a) Prove that :  $(p \vee q) = (q \vee p)$  by using truth table.
- b) State and prove associative law.
- c) Write the converse, inverse and contrapositive of the following statement  
" If switch is on then fan is start".

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

08

- a) Check given statement pattern are tautology or a contradiction or a contingency.  
 $[(p \wedge q) \vee (Np \vee Nq)]$

- b) Find inverse of the A by adjoint method if  $A = \begin{bmatrix} 2 & 3 & 1 \\ -1 & 0 & 3 \\ 3 & 1 & 2 \end{bmatrix}$

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**B.C.A. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2023**  
**Descriptive Statistics (Paper - II) (BCA1107)**

Day & Date: Sunday, 26-11-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple Choice questions.**

**08**

- 1) With the help of ogive curve one cannot determine \_\_\_\_\_.  
a) Median  
b) deciles  
c) Percentiles  
d) mode
- 2) With the help of ogive curve one can determine \_\_\_\_\_.  
a) Median  
b) deciles  
c) Percentiles  
d) mode
- 3) The two regression lines intersect at \_\_\_\_\_.  
a) (0,0)  
b)  $(\bar{X}, \bar{Y})$   
c)  $(\sigma_x, \sigma_y)$   
d) None of these
- 4) The A.M of first  $n$  natural number is \_\_\_\_\_.  
a)  $n(n + 1)/2$   
b)  $(n^2 + 1)/2$   
c)  $n(n^2 + 1)/2$   
d)  $(n^2 + n)/2n$
- 5) A primary data is a data collected from \_\_\_\_\_.  
a) Office records  
b) direct interviews  
c) bulletins  
d) Annual reports
- 6) Which of the following is Positional average?  
a) Arithmetic mean  
b) Geometric mean  
c) Harmonic mean  
d) Median
- 7) Mode is \_\_\_\_\_.  
a) middle most value  
b) the minimum value  
c) most frequent value  
d) the maximum value
- 8) If the smallest value in a set is 7 and its range is 85, the largest value of the set is \_\_\_\_\_.  
a) 85.5  
b) 12.14  
c) 78  
d) 92

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

**08**

- a) Define A.M.
- b) Define population with example.
- c) Write down relation between mean, median and mode.
- d) Define continuous and discrete variable.
- e) Define C.V.
- f) Write down any two examples of sample.

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

- a) Write any two properties of regression coefficients.
- b) Calculate coefficient of correlation from the following information.  
 $n = 5, \Sigma X = 25, \Sigma Y = 25, \Sigma X^2 = 150, \Sigma Y^2 = 150, \Sigma XY = 140$
- c) Discuss the effect of change of origin and scale on Correlation coefficient.

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

- a) Define Correlation. Its types with example.
- b) Compute S.D. of first  $n$  natural number.
- c) Define A.M. for grouped data. Calculate the A.M. of the marks from the following

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	12	18	27	20	17	6

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

- a) The number of runs scored by cricketers A and B in 10 test matches are shows below:

A	5	20	90	76	102	90	6	108	16	20
B	40	35	60	62	58	76	42	30	20	30

Find:

- 1) Which cricketer is better in average?
- 2) Which cricketers is more consistent?
- b) You are given the following information about two variables  $x$  and  $y$   
 $n = 10, \Sigma X^2 = 385, \Sigma Y^2 = 192, \Sigma XY = 185, \bar{X} = 5.5, \bar{Y} = 4$   
 Find the regression line of  $y$  on  $x$ .

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

Day & Date: Tuesday, 28-11-2023  
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) LCD display is based on \_\_\_\_\_ of light.
  - a) radiation
  - b) reflection
  - c) emission
  - d) transmission
- 2) The bottom layer of IC serves as \_\_\_\_\_ layer.
  - a) connector
  - b) Insulating
  - c) substrate
  - d) none of above
- 3) The LEDs or their display devices require a voltage of \_\_\_\_\_ and a current of \_\_\_\_\_.
  - a) 1.2V, 20mA
  - b) 2.5V, 20mA
  - c) 2.5V, 100mA
  - d) 1.2V, 100mA
- 4) Diffusion of impurities is done on the \_\_\_\_\_ layer.
  - a) substrate
  - b) second
  - c) SiO<sub>2</sub>
  - d) All of above
- 5) Usually substrate of IC is made up of \_\_\_\_\_.
  - a) Germanium metal
  - b) Silicon
  - c) SiO<sub>2</sub>
  - d) Aluminum
- 6) LCD requires a power of \_\_\_\_\_ to light up one segment of a 7 segment display.
  - a) 20 W
  - b) 20 mW
  - c) 20 μW
  - d) 20nW
- 7) Complex devices and circuits make use of \_\_\_\_\_ PCBs.
  - a) single sided
  - b) double sided
  - c) multi layer
  - d) rigid
- 8) IC fabrication depends upon \_\_\_\_\_.
  - a) Materials
  - b) processes
  - c) design principles
  - d) All of above

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

**08**

- a) What are steps of IC fabrication process?
- b) What is SMT?
- c) What are advantages of ICs?
- d) What are popular IC packages?
- e) What is LED?
- f) What is working principle of LCD?

- Q.3 Write short notes (Any Two)** **08**
- a) Write a note on LCD display. (construction, working).
  - b) Write a note on photolithography process.
  - c) Write a note on epitaxial growth.
- Q.4 Answer the following (Any Two)** **08**
- a) Explain with neat diagram how transistor and diode are fabricated in IC?
  - b) Explain with neat diagram working of 7 segment display.
  - c) State types of PCB. Explain double sided PCB.
- Q.5 Answer the following (Any One)** **08**
- a) Explain diffusion and isolation process with neat diagrams for IC fabrication process.
  - b) Explain construction and working of LED display. State its applications.





- Q.2 Answer any four of the following. 08**
- a) Draw symbol of capacitor. Define capacitance. State its unit.
  - b) What are two types of transformer according to secondary voltage. Draw their diagrams.
  - c) What is doping process? Which are two types of impurities. Give examples.
  - d) Draw symbol of inductor. What is inductance. State its unit?
  - e) State specifications of resistors.
  - f) Write classification of capacitors with symbols.
- Q.3 Write short notes on any two of the following: 08**
- a) Write a note on P type semiconductor.
  - b) Write a note on SMPS.
  - c) Write a note on PN junction diode.
- Q.4 Answer any two of the following. 08**
- a) Draw block diagram of regulated power supply. Explain function of each block.
  - b) Explain with neat diagram construction and working of P- type semiconductor.
  - c) State applications of BJT and PN junction diode.
- Q.5 Answer any one of the following. 08**
- a) What is rectifier? Draw and explain circuit diagram of CT full wave rectifier. Also draw input output waveforms.
  - b) Draw and explain construction of NPN transistor. Explain with neat diagram working of NPN transistor.

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**B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**COMPULSORY ENGLISH**  
**Communication Skill (BCA1201)**

Day & Date: Saturday, 02-12-2023  
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 given options. 08**

- 1) A talk must be intermingled with a quantity of \_\_\_\_\_.  
a) anger                                      b) jest  
c) tears                                         d) boredom
- 2) Traditional education kills the very \_\_\_\_\_ of the budding learners.  
a) initiative                                    b) initials  
c) intimations                                d) insecurity
- 3) To Tagore, “The civilization of the West has in it the spirit of the \_\_\_\_\_.  
a) alcohol                                        b) machine  
c) nature                                         d) heaven
- 4) Niyi Osundare’s “Our Earth Will Not Die” breathes a \_\_\_\_\_ attitude.  
a) positive                                      b) negative  
c) no    d) null
- 5) Alexander Pope considers simplicity and \_\_\_\_\_ to be assets of a successful life.  
a) indulgence                                    b) crowd  
c) loneliness                                     d) greediness
- 6) ‘Gone far away into the silent land’. In this line ‘the silent land’ symbolizes \_\_\_\_\_.  
a) life    b) death  
c) earth     d) dream
- 7) They admit their crime. The antonym for ‘admit’ in this sentence is \_\_\_\_\_.  
a) accept                                         b) own  
c) deny    d) confess
- 8) The letter is \_\_\_\_\_ written by his elder brother.  
a) being    b) been  
c) was    d) be

**Q.2 Answer the following questions briefly. (Any Four) 12**

- a) Why did Francis Bacon give more importance to discretion than eloquence?
- b) What was Bertrand Russell’s experience with the squirrels?
- c) How did Rabindranath Tagore assess the society of America?
- d) Describe the central theme of Niyi Osundare’s “Our Earth Will Not Die”.
- e) Bring out the farmer’s life as seen in Alexander Pope’s “Ode on Solitude”.
- f) What would happen if the partner of Christina Rossetti became sad after remembering her?

**Q.3 Answer the following questions. (Any One) 10**

**a)** Write a letter of complaint to Sony TV Shop in Solapur about a television set you bought recently and was not functioning well. Address your letter to the Manager of the Shop.

**OR**

**b)** Write a letter inviting a famous local writer to attend the Annual Prize Distribution Function to be held in your college.

**Q.4 Write an elaborate note on the interpersonal intelligence and its significance. 10**

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

Day & Date: Sunday, 03-12-2023  
 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) Which of the following statements is correct for variable names in Python language?
  - a) All variable names must begin with an underscore
  - b) Unlimited length
  - c) The variable name length is a maximum of 2
  - d) All of the above
- 2) Suppose `d = {"john":40, "peter":45}`, to delete the entry for "john" what command do we use?
  - a) `d.delete("john":40)`
  - b) `d.delete("john")`
  - c) `del d["john"]`
  - d) `del d("john":40)`
- 3) In order to store values in terms of key and value we use what core data type.
  - a) list
  - b) tuple
  - c) class
  - d) dictionary
- 4) What will be the output of the following Python code?
 

```
i = 1
while False:
    if i%2 == 0:
        break
    print(i)
    i+= 2
```

  - a) 1
  - b) 1 3 5 7 ...
  - c) 1 2 3 4 ...
  - d) none of the mentioned
- 5) Who developed Python Programming Language?
  - a) Wick van Rossum
  - b) Rasmus Lerdorf
  - c) Guido van Rossum
  - d) Niene Stom
- 6) Which one of the following has the same precedence level?
  - a) Division, Power, Multiplication, Addition and Subtraction
  - b) Division and Multiplication
  - c) Subtraction and Division
  - d) Power and Division
- 7) Which of the following statements is used to create an empty set?
  - a) `{ }`
  - b) `set()`
  - c) `[ ]`
  - d) `( )`
- 8) What arithmetic operators cannot be used with strings?
  - a) +
  - b) \*
  - c) -
  - d) All of the mentioned

- Q.2 Answer the following (Any Four) 08**
- a) What is Docstring in Python?
  - b) Define Literals and Constants.
  - c) What is PVM?
  - d) What is String in Python?
  - e) List any 4 flavors of Python.
  - f) What is indexing and slicing on array?
- Q.3 Write short notes (Any Two) 08**
- a) Data types in Python
  - b) Looping statements
  - c) Dictionary
- Q.4 Answer the following (Any Two) 08**
- a) Write the difference between Python and C language.
  - b) Explain the Set in python with example.
  - c) WAP to accept two  $2 \times 2$  matrix and display the addition of these matrices.
- Q.5 Answer the following (Any One) 08**
- a) Explain Tuples and List in Python.
  - b) Explain any 8 features of Python.

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**B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Operating System (BCA1203)**

Day & Date: Monday, 04-12-2023  
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

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

- 1) The operating system where fixed time slot is allocated to each active process is \_\_\_\_\_.
  - a) Real time O.S
  - b) Multiprogramming O.S
  - c) Batch O.S
  - d) Time-sharing O.S
- 2) A program in execution is called \_\_\_\_\_.
  - a) Process
  - b) Instruction
  - c) Procedure
  - d) Function
- 3) Interval between the time of submission and completion of the job is called \_\_\_\_\_.
  - a) Waiting time
  - b) Turn-around time
  - c) Throughput
  - d) Response time
- 4) FIFO scheduling is \_\_\_\_\_.
  - a) Preemptive scheduling
  - b) Non- preemptive scheduling
  - c) Deadlock scheduling
  - d) None of these
- 5) The priority scheduling algorithm suffers by \_\_\_\_\_.
  - a) Starvation
  - b) Aging
  - c) Deadlock
  - d) All of these
- 6) The degree of Multiprogramming is controlled by \_\_\_\_\_.
  - a) CPU Scheduler
  - b) Context Switching
  - c) Long-term Scheduler
  - d) Medium term Scheduler
- 7) Process is called as a \_\_\_\_\_ entity.
  - a) Passive
  - b) Active
  - c) Non active
  - d) None of these
- 8) There is a guarantee that the critical tasks are completed in given amount of time. That is called as \_\_\_\_\_.
  - a) Hard Real time systems
  - b) Soft real time system
  - c) Real time systems
  - d) None of the above

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

- a) Define Operating systems?
- b) What is mean by Multiprogramming?
- c) What is mean by Real time system?
- d) What is mean by virtual machine?
- e) Define the term Thread?
- f) What is mean by Scheduling?

- Q.3 Write short notes on any two of the following.** **08**
- a) Process Control Block
  - b) FCFS Scheduling algorithms
  - c) Time Sharing Operating System
- Q.4 Answer any Two of the following.** **08**
- a) Explain the different Services provided by Operating System?
  - b) Explain the different Scheduling criteria in detail.
  - c) What is process? Explain process state with block diagram?
- Q.5 Answer any one of the following.** **08**
- a) Define Process Synchronization? Explain Dining Philosopher problem?
  - b) Explain SJF Scheduling Algorithms with example?



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

Day & Date: Tuesday, 05-12-2023  
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 for the following. 08**

- 1) Which of the following is inbuilt function in C language?
  - a) add()
  - b) sub()
  - c) printf()
  - d) none of these
- 2) The parameters which are used at function calling are called as \_\_\_\_\_.
  - a) Actual parameters
  - b) Formal parameters
  - c) Dummy parameters
  - d) None of these
- 3) We use malloc function for \_\_\_\_\_.
  - a) static memory allocation
  - b) dynamic memory allocation
  - c) both a and b
  - d) none of these
- 4) In C a pointer variable to an integer can be created by the declaration \_\_\_\_\_.
  - a) int \*p
  - b) int +p
  - c) int &p
  - d) int p\*
- 5) Every C program should contain which function?
  - a) printf()
  - b) scanf()
  - c) show()
  - d) main()
- 6) Which keyword used to declare a C file pointer?
  - a) file
  - b) FILEP
  - c) FILE
  - d) filep
- 7) Preprocessor directive in C language starts with \_\_\_\_\_ symbol.
  - a) &
  - b) #
  - c) \$
  - d) @
- 8) Which of the following is not a storage classes in C?
  - a) volatile
  - b) auto
  - c) extern
  - d) register

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

- a) What is function?
- b) What is pointer?
- c) Explain local variable with example.
- d) Explain any two inbuilt functions.
- e) What is recursion?

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

- a) Nested structure
- b) Types of macros
- c) Auto storage classes

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

**08**

- a) Write the difference between call by value and call by reference.
- b) Explain different file opening modes.
- c) Write a program to calculate sum of digit of the entered number using function.

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

**08**

- a) Write a program to create structure of student information with appropriate data members.
- b) Explain different four types of user defined functions with suitable example.

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**B.C.A (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Web Programming - II (BCA1205)**

Day & Date: Wednesday, 06-12-2023  
 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) Which of the following is a single global function defined in the jQuery library?
  - a) jQuery()
  - b) \$()
  - c) Queryanalysis()
  - d) global()
- 2) Which is the method that operates on the return value of \$()?
  - a) show()
  - b) css()
  - c) click()
  - d) done()
- 3) Which of the following sign is used as a shortcut for jQuery?
  - a) the % sign
  - b) the & sign
  - c) the \$ sign
  - d) the @ sign
- 4) Which property helps to initiate the HTTP requests?
  - a) request
  - b) location
  - c) send
  - d) write
- 5) 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
- 6) Which of the following uses scripted HTTP?
  - a) XML
  - b) HTML
  - c) Ajax
  - d) CSS
- 7) What will be the output of the following JavaScript code?
 

```
<p id="demo"></p>
<script>
function myFunction( )
{
  var str = "Tables";
  var patt1 = /tables/ i;
  var result = str.match(patt1);
  document.getElementById ("demo") .innerHTML = result;
}
</script>
```

  - a) Tables
  - b) tables
  - c) Undefined
  - d) Error
- 8) Which of the following attribute can hold the JavaScript version?
  - a) LANGUAGE
  - b) SCRIPT
  - c) VERSION
  - d) None of the above

- Q.2 Answer any four of the following. 08**
- a) Data types in JavaScript.
  - b) Explain Math() method.
  - c) What is variables in JavaScript?
  - d) What is syntax of JQuery?
  - e) Write the syntax of switch statement in javascript.
  - f) Explain css() in JQuery.
- Q.3 A) Write notes on any one of the following. 03**
- 1) String functions in JAVASCRIPT.
  - 2) Explain ID selectors in JQuery?
- B) Solve / short answer 05**
- Explain operators in javascript.
- Q.4 Answer any Two of the following. 08**
- a) Explain Events in JQuery.
  - b) What is if else if statement in JavaScript? Explain with suitable example.
  - c) What is validation in javascript.
- Q.5 Answer any one of the following. 08**
- a) Event handing in Javascript.
  - b) Write the syntax of fading and sliding effects in jQuery? and explain with suitable example.

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**B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023  
Graph Theory (BCA1206)**

Day & Date: Thursday, 07-12-2023  
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.

**Q.1 Multiple choice questions.**

08

- 1) A graph having only one component is called \_\_\_\_\_ graph.
  - a) disconnected
  - b) connected
  - c) void
  - d) none of these
- 2) The ring sum of a graph G with itself is \_\_\_\_\_.
  - a) complete graph
  - b) null graph
  - c) tree
  - d) none of these
- 3) The order of adjacency matrix is \_\_\_\_\_.
  - a)  $m$
  - b)  $n \times q$
  - c)  $n \times n$
  - d) none of these
- 4) A graph G in which there is exactly one path between every pair of vertices is called \_\_\_\_\_.
  - a) tree
  - b) complete graph
  - c) regular graph
  - d) null graph
- 5) If a connected graph G has a \_\_\_\_\_ then its edge connectivity is one.
  - a) loop
  - b) parallel edge
  - c) cut edge
  - d) none of these
- 6) A graph having Hamiltonian path is called \_\_\_\_\_ graph.
  - a) Eulerian
  - b) Hamiltonian
  - c) Disconnected
  - d) None of these
- 7) A complete graph  $K_8$  is \_\_\_\_\_ regular.
  - a) 8
  - b) 64
  - c) 16
  - d) 7
- 8) By solving Chinese postman problem to find \_\_\_\_\_.
  - a) Trail
  - b) Eulerian circuit
  - c) Hamiltonian path
  - d) None of these

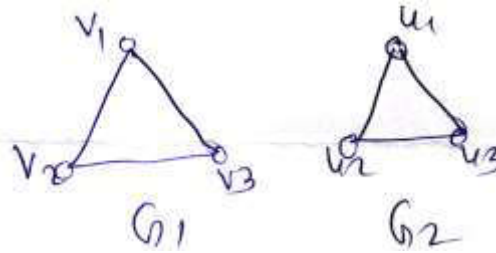
**Q.2 Answer the following questions (Any Four)**

08

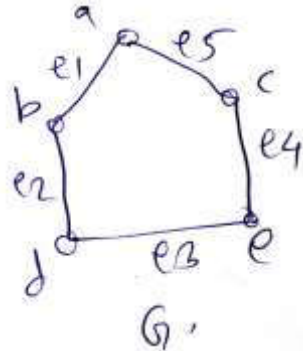
- 1) Draw the graph  $K_{2,2}$
- 2) Define complete graph.
- 3) Draw a graph  $K_4$ .
- 4) Draw a graph which is neither Eulerian nor Hamiltonian.
- 5) Define tree.
- 6) Define spanning graph.

**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.

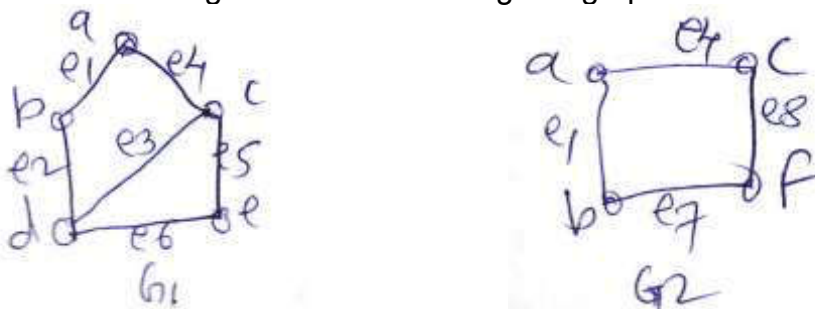


- 3) Solve the Chinese postman problem.

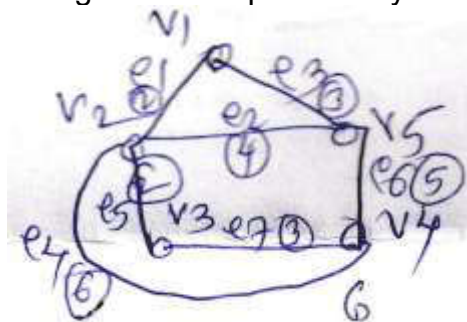


**Q.4 Answer the following questions (Any Two)**

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

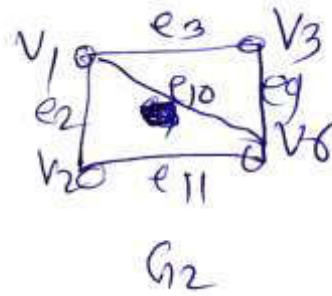
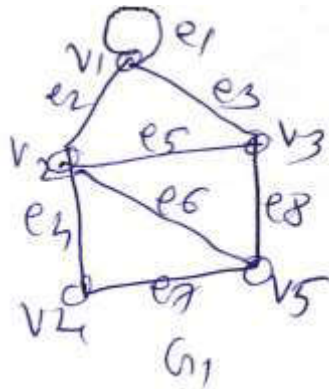


- 3) Solve the following traveling salesman problem by starting to  $v_1$ .

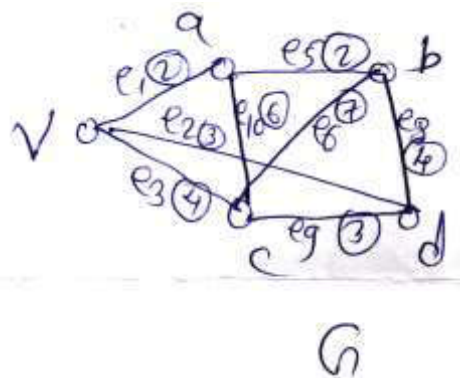


Q.5 Answer any one of the following questions.

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.



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**B.C.A (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Probability Theory (BCA1207)**

Day & Date: Friday, 08-12-2023  
 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.

**Q.1 Multiple choice questions.**

**08**

- 1) If  $X$  is a r.v. with  $E(X) = 4, V(X) = 9$  then  $V(2X + 5) =$  \_\_\_\_\_.
 

a) 36	b) 9
c) 1.6	d) None of these
- 2) The probability curve of standard normal distribution is symmetric about \_\_\_\_\_.
 

a) 0	b) $\mu$
c) $\sigma^2$	d) None of these
- 3) For a continuous r.v.  $X P(X = k) =$  \_\_\_\_\_, where  $k$  be a constant.
 

a) 0	b) 1
c) 2	d) None of these
- 4) A discrete r.v.  $X$  has Poisson distribution then \_\_\_\_\_.
 

a) Mean = Variance	b) Mean > Variance
c) Mean < Variance	d) None of these
- 5) A discrete r.v.  $X$  has Binomial Distribution with parameter  $(n, p)$  then \_\_\_\_\_.
 

a) $p =$ probability of success in any trial	
b) $n =$ number of times trial is repeated	
c) $E(X) > V(X)$	
d) All of these	
- 6) If event  $A \subset B$  then, \_\_\_\_\_.
 

a) $P(A) \leq P(B)$	b) $P(A) > P(B)$
c) $P(A) + P(B) = 1$	d) None of these
- 7) Permutations means arrangement of objects in a row such that order of arrangement is \_\_\_\_\_.
 

a) important	b) not important
c) particular	d) none of these
- 8) If  $C$  is constant then  $E(C) =$  \_\_\_\_\_.
 

a) 0	b) 1
c) $C$	d) Infinity



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

- 1) State mean and variance of Binomial distribution.
- 2) Define - conditional probability
- 3) Find k if following is p.m.f. of discrete r.v. X

X	2	4	6	8
P(x)	K	2k	4k	0.2

- 4) Given:  $P(A) = 0.3, P(B) = 0.5$ . Find  $P(A \cup B)$  if A and B are mutually exclusive events.
- 5) If  $X \rightarrow P(4)$ . Find  $E(X)$  and standard deviation of X.
- 6) Define sample space and its example.

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

- 1) State the axioms of probability and prove  $P(\Phi) = 0$ .
- 2) Define the c.d.f. of continuous r.v. and state its properties.
- 3) State addition and multiplication principle of counting with illustration.

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

- 1) For the following probability distribution of a discrete r.v. X, Find  $V(X)$

X	2	4	6	8	10
P(x)	0.2	0.4	0.1	0.2	0.1

- 2) Define event and state any two types with example.
- 3) The p.d.f. of continuous r.v. X is,  
 $f(x) = Cx^3 ; 0 < x < 1$   
 $= 0 ; \text{otherwise}$   
 Find i) C ii)  $E(X)$

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

- 1) Define Normal distribution. State mean and variance of it and also state any four properties of it.
- 2) The continuous r.v. X has the p.d.f.  
 $f(x) = Cx^4 ; 0 < x < 1$   
 $= 0 ; \text{otherwise}$   
 Find  
 i) C ii)  $E(X)$  iii)  $V(X)$

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**B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Digital Fundamentals of Computer (BCA1208)**

Day & Date: Saturday, 09-12-2023  
 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) Non programmable calculators are allowed.

**Q.1 Multiple choice questions.**

**08**

- 1) \_\_\_\_\_ IC is used as counter.
 

a) 7490	b) 7474
c) 7432	d) 7404
- 2) \_\_\_\_\_ is universal gate.
 

a) AND	b) OR
c) NOT	d) NAND
- 3) Half adder performs addition of \_\_\_\_\_ bit.
 

a) 8	b) 6
c) 4	d) 2
- 4) Asynchronous counter uses \_\_\_\_\_ clock.
 

a) separate	b) common
c) dual	d) synchronous
- 5) Flip flop is \_\_\_\_\_ device.
 

a) monostable	b) unstable
c) bistable	d) astable
- 6) RS flip flop is set when S input is \_\_\_\_\_.
 

a) 0	b) 1
c) 00	d) 11
- 7) 4:1 is \_\_\_\_\_ circuit.
 

a) multiplexer	b) demultiplexer
c) encoder	d) decoder
- 8) \_\_\_\_\_ flip flop is used to construct shift register.
 

a) RS	b) JK
c) MSJK	d) D

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

**08**

- 1) Draw symbol of NAND, NOR gate.
- 2) Draw the block diagram of half adder.
- 3) Write definition of combinational circuit.
- 4) Explain application of flip flop.
- 5) Explain concept of multiplexer
- 6) Write disadvantage's of RS flip flop.

- Q.3 Answer any two of the following.** **08**
- a) Explain construction of OR and AND gate using NOR gate.
  - b) Explain decoder with diagram.
  - c) Explain SIPO shift register.
- Q.4 Answer any Two of the following.** **08**
- a) Explain 4:2 encoder.
  - b) Explain full adder using gates.
  - c) Explain De Morgan's theorem with logical diagram.
- Q.5 Answer any One of the following.** **08**
- a) Explain multiplexer and demultiplexer with logical diagram.
  - b) Classify counter. Explain asynchronous 3 bit up down counter with block diagram.

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**B.C.A. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**Introduction of Microprocessor and Interfacing (BCA1209)**

Day & Date: Sunday, 10-12-2023  
 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 Choose correct alternative for the following.**

**08**

- 1) PC is \_\_\_\_\_ bit in 8085 microprocessor.
 

a) 8	b) 16
c) 20	d) 30
  
- 2) \_\_\_\_\_ bus is uni directional.
 

a) Data	b) Address
c) Both a & b	d) None
  
- 3) \_\_\_\_\_ logical group instruction.
 

a) MVI	b) Add
c) ORA	d) loop
  
- 4) \_\_\_\_\_ is a decrement in push operation.
 

a) SP	b) BP
c) PC	d) None
  
- 5) \_\_\_\_\_ data transfer CPU does not involve.
 

a) DMA	b) Interrupt initiated
c) None	d) All
  
- 6) Size of accumulator in 8085 is \_\_\_\_\_ bit.
 

a) 16	b) 20
c) 8	d) 9
  
- 7) Own memory of CPU called as \_\_\_\_\_.
 

a) cache	b) RAM
c) ROM	d) register
  
- 8) 8085 is \_\_\_\_\_ pin microprocessor.
 

a) 40	b) 20
c) 10	d) 30

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

**08**

- 1) Define data Bus.
- 2) Define machine Cycle.
- 3) Define interrupt.
- 4) Define DMA data transfer.
- 5) Define Pop Operation.
- 6) Define flag register.

- Q.3 Answer any two of the following. 08**
- a) Explain I/O mapped I/O interfacing.
  - b) Explain logical instructions.
  - c) Explain programmed i/o data transfer.
- Q.4 Answer any two of the following. 08**
- a) Write features of 8085.
  - b) Define addressing mode and gives the classification of it.
  - c) Explain DMA data transfer.
- Q.5 Answer any One of the following. 08**
- a) Draw and explain architecture of 8085 microprocessor.
  - b) Define instruction set and gives the classification of it.

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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023**  
**ENGLISH (Comp.)**  
**Literary Voyage (19409201) (20409201)**

Day & Date: Saturday, 02-12-2023  
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.

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

- 1) What do some people think of their wit?  
a) It has been sleeping      b) To talk  
c) To listen                      d) To lead
- 2) The essay 'Does Education Do Harm?' is about \_\_\_\_\_.  
a) Religion                        b) Politics  
c) Education                      d) Cricket
- 3) What sense does R. Tagore get regarding freedom in his travels to the West?  
a) Strong                            b) Weak  
c) Enjoyed by all                d) Not present at all
- 4) \_\_\_\_\_ releases the arsenic urine  
a) Infected waste  
b) profit factories  
c) Chemicals  
d) The earth
- 5) What is the profession of the ideal man described in the poem?  
a) Painter                          b) Cobbler  
c) Farmer                         d) None of these
- 6) What kind of place is the poet going to?  
a) Loud place                      b) Marketplace  
c) Silent place                    d) Dull place
- 7) What is the synonym for the word 'Dark'?  
a) gloomy                          b) ugly  
c) dirty                              d) divine

- 8)** We \_\_\_\_\_(go) to Mumbai last year.  
 a) goes    b) has gone  
 c) were went    d) went
- 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) Who has lynched the lakes in the poem "Our Earth Will not Die?"
- 5) What is the profession of the ideal man described in the poem?
- 6) Who is the poet addressing to in the poem "Remember?"

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

- 1) What is the meaning of discretion of speech?
- 2) What is the relation between education and virtue?
- 3) What is the true sense of freedom?
- 4) Discuss the theme of the poem 'Our Earth Will Not Die'.
- 5) What is the subject matter of the poem 'Ode on Solitude'?
- 6) Discuss the tone of compassion used by the poet in the poem 'Remember'.
- 7) Describe the theme of the poem "ode on solitude."
- 8) Explain the true love of poet in the poem "Remember."
- 9) Write down the process of bread making in the factory.
- 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".

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

- 1) Describing the reaching process of Pune to Mahabaleshwar by car.
- 2) Define the concept power point presentation & its use.
- 3) Explain the difference between formal letter and informal letter.

## SLR-DG-19

- B)** Prepare a presentation on your own college and its facilities. **06**
- Q.4 A) Answer the following questions. (Any Two)** **08**
- 1) Read the following advertisement and write a job application letter.  
“Indian Model School, Solapur  
Requires Teacher  
Educational qualification: B.A. B.ed  
Experience – min 1 year in teaching  
Interested candidates send CV and application at  
[indiamodelschool@gmail.com](mailto:indiamodelschool@gmail.com)
  - 2) Explain the soft skill “Interpersonal Intelligence”.
  - 3) Write down the describing process of cake. How to make cake within 15 minutes.
- B)** Explain power point presentation and its importance. **08**
- Q.5 Answer the following questions. (Any Two)** **16**
- a) State three (for each) such situations from your personal life when you have felt the following
    - 1) Mad
    - 2) Sad
    - 3) Glad
  - b) Write down the process of making sugar in factory in your own language.
  - c) Write down the process of reaching vegetable market in your city from your home.



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

Day & Date: Sunday, 03-12-2023  
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 Choose the correct alternative.**

**08**

- 1) A \_\_\_\_\_ is a self-contained subprogram that is meant to do some specific task.
 

a) structure	b) union
c) function	d) none of these
- 2) The \_\_\_\_\_ statement is used in a function to return a value to the calling function.
 

a) continue	b) break
c) return	d) goto
- 3) All functions in the program can access and modify \_\_\_\_\_ variable(s).
 

a) local	b) global
c) Both a) & b)	d) None of these
- 4) A \_\_\_\_\_ variable is initialized only once.
 

a) static	b) extern
c) register	d) none of these
- 5) Data of different types can be grouped together under a single name using \_\_\_\_\_.
 

a) array	b) structure
c) pointer	d) none of these
- 6) A structure that contains pointers to structures of its own type is known as \_\_\_\_\_.
 

a) self-referential structure	b) nested structure
c) pointer to pointer	d) pointer to structure
- 7) \_\_\_\_\_ is used to undefine a defined macro.
 

a) # undefine	b) #undef
c) #ifndef	d) None of these
- 8) A structure named FILE is defined in the file \_\_\_\_\_.
 

a) conio.h	b) string.h
c) stdio.h	d) math.h

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

**08**

- a) What is function prototype?
- b) What are the local variables?
- c) What is pointer? How pointers are declared and defined?
- d) Explain sizeof() operator.
- e) What is nested structure?
- f) Explain and getchar() and putchar() functions.

- Q.3 Write short notes (Any Two)** **08**
- a) Recursion
  - b) Dynamic Memory Allocation
  - c) Pointer to Pointer
- Q.4 Answer the following (Any Two)** **08**
- a) Explain array of structures.
  - b) Write a program that swaps two number using pointers.
  - c) What is file? What are the different file opening modes?
- Q.5 Answer the following (Any One)** **08**
- a) Explain storage classes.
  - b) Explain call by value and call by reference.

<b>Seat No.</b>	
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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023  
Introduction to Operating System (19409203)**

Day & Date: Monday, 04-12-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Choose the correct alternative.****08**

- 1) A process can be terminated due to \_\_\_\_\_.  
a) fatal error  
b) normal exit  
c) killed by another process  
d) All these above
- 2) In a time-sharing operating system, when the time slot given to a process is completed, the process goes from the running state to the \_\_\_\_\_.  
a) Blocked state  
b) Ready state  
c) Suspended state  
d) Terminated state
- 3) Which is not the service of operating system?  
a) User Interface  
b) Program- Execution  
c) File-system manipulation  
d) Sequence
- 4) To access the services of operating system, the interface is provided by the \_\_\_\_\_.  
a) Assembly instructions  
b) API  
c) Library  
d) System calls
- 5) PCB stands for \_\_\_\_\_.  
a) Progress Control Box  
b) Process Control Black  
c) Process Control Block  
d) Process Critical Box
- 6) The interval from the time of submission of a process to the time of completion is termed as \_\_\_\_\_.  
a) waiting time  
b) turnaround time  
c) response time  
d) throughput
- 7) If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?  
a) mutual exclusion  
b) synchronous exclusion  
c) critical exclusion  
d) asynchronous exclusion
- 8) Which of the following is not the state of a process life cycle?  
a) New  
b) Running  
c) Waiting  
d) Recursion

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

- a) What is a mean by Operating System?
- b) What is Virtual machine?
- c) What is Batch Operating system?
- d) What is mean by Long term scheduling?
- e) What is a SJF?
- f) What is multiprogramming?

- Q.3 Write short Note on Any Two of following.** **08**
- a) Process Life Cycle
  - b) SJF and Round Robin scheduling algorithms
  - c) Parallel Operating System
- Q.4 Answer the Any Two of following.** **08**
- a) What is multilevel queue scheduling?
  - b) What is thread? Explain in detail.
  - c) What are the operations on process?
- Q.5 Answer any one of following.** **08**
- a) What are the problems of Synchronization?
  - b) Explain the Process Control Block in detail.

Seat No.	
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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Basics of Web Programming - II (19409204)**

Day & Date: Tuesday, 05-12-2023  
 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.**

**08**

- 1) JavaScript is an \_\_\_\_\_ language.
  - a) Interpreted
  - b) Compiled
  - c) Symbolic
  - d) None of these
- 2) Integer variable is declared using following syntax in JavaScript.
  - a) integer num;
  - b) var num;
  - c) int num;
  - d) None of these
- 3) Which of the following is not a logical operator?
  - a) !
  - b) |
  - c) &&
  - d) ||
- 4) Variable declared inside the function will be called as \_\_\_\_\_.
  - a) Global variable
  - b) Local variable
  - c) Constant
  - d) None of these
- 5) Which jQuery method used to hide selected elements?
  - a) hidden()
  - b) hide()
  - c) visible(false)
  - d) display(none)
- 6) jQuery is a \_\_\_\_\_.
  - a) Ruby Gems
  - b) Php framework
  - c) JavaScript library
  - d) Department
- 7) jQuery method to set one or more style properties for selected elements.
  - a) Style()
  - b) html()
  - c) CSS()
  - d) Animate()
- 8) jQuery's main focus is \_\_\_\_\_.
  - a) AJAX
  - b) DOM
  - c) Animation
  - d) All of the above

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

**08**

- a) Script tag.
- b) Advantages of JavaScript.
- c) List the jQuery fading methods.
- d) What is event?
- e) Features of jQuery.
- f) Use of Break statement.

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

**08**

- a) Primitive datatypes in JavaScript.
- b) Needs of jQuery.
- c) jQuery callback function with example.

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

- a) Explain While and Do. While loops in JavaScript with syntax and examples.
- b) Explain jQuery remove method with example.
- c) What is object? Explain Date object in JavaScript with suitable example?

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

- a) Explain sort method to sort an array in JavaScript with example.
- b) List the types of Selectors in jQuery and explain any one with example.
- c) List the methods to add new element in jQuery and explain any one with example.

Seat No.	
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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023  
Office Automation (19409205)**

Day & Date: Wednesday, 06-12-2023  
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) \_\_\_\_\_ appears at the bottom of the Excel window.
  - a) Title bar
  - b) Formula bar
  - c) Work sheet tabs
  - d) Name box
- 2) Microsoft word is \_\_\_\_\_ software.
  - a) Application
  - b) Compiler
  - c) System
  - d) Programming
- 3) Which is the right term of presentation page?
  - a) Chart
  - b) Slides
  - c) Clipart
  - d) Image
- 4) Which term is not related with font?
  - a) Font grammar
  - b) Font color
  - c) Font size
  - d) Font face
- 5) Typed text showed in active cell and also in \_\_\_\_\_.
  - a) Formula bar
  - b) Ribbon
  - c) Title bar
  - d) Scroll bar
- 6) Press \_\_\_\_\_ to start presentation from the beginning.
  - a) F5
  - b) F6
  - c) F7
  - d) F8
- 7) PowerPoint presentation(s) is/are widely used as \_\_\_\_\_.
  - a) Project presentations by students
  - b) Communication of planning
  - c) Note outlines for teachers
  - d) All of the above
- 8) The valid format of MS Word is \_\_\_\_\_.
  - a) .exe
  - b) .doc
  - c) .png
  - d) .jpeg

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

**08**

- a) What is Icon?
- b) What is mean by Spreadsheet?
- c) What is Margin?
- d) What is template?
- e) What is database?
- f) What are the Parts of Windows?

- Q.3 Write short notes on any two of the following.** **08**
- a) How to Adding Effects to the Presentation?
  - b) How we Formatting Spreadsheets?
  - c) What are different operations perform on table in MS word?
- Q.4 Answer any two of the following.** **08**
- a) What are the Characteristics of Computer?
  - b) How Editing text documents in Ms Word?
  - c) What are different Formulae used in MS excel?
- Q.5 Answer any one of the following.** **08**
- a) Explain Mail merge in detail.
  - b) Explain MS Access.



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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Basics of Mathematics – II (19409206)**

Day & Date: Thursday, 07-12-2023  
 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 calculator is allowed.

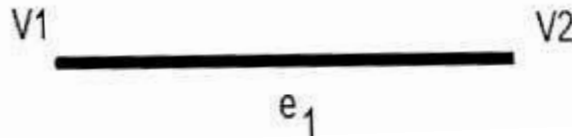
**Q.1 Choose the correct alternative.**

**08**

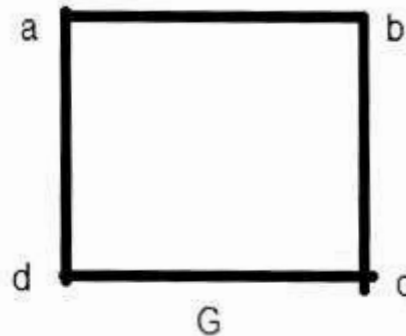
- 1) The number of edges in complete graph is  $K_7$  \_\_\_\_\_.  
 a) 21    b) 42  
 c) 49    d) 7
  
- 2) A null graph having 'n' vertices is \_\_\_\_\_ regular graph.  
 a)  $n$     b)  $n - 1$   
 c) 0     d) None of these
  
- 3) The two of more edges are said to be parallel edges if they having \_\_\_\_\_ end vertices.  
 a) Multiple                                        b) Same  
 c) Large    d) None of these
  
- 4) A graph without loop & parallel edge is called as \_\_\_\_\_ graph.  
 a) Pseudo                                         b) Simple  
 c) Multiple                                        d) None of these
  
- 5) A tree with 7-vertices has \_\_\_\_\_ number of edges.  
 a) 7     b) 6  
 c) 8     d) None of these
  
- 6) Chinese postman problem is a particular case of \_\_\_\_\_ graph.  
 a) Eulerian                                        b) Hamiltonian  
 c) Both a & b                                     d) Neither a nor b
  
- 7) In a tree there exists \_\_\_\_\_ path in between every pair of vertices.  
 a) Unique                                         b) No  
 c) More than one                                d) Exact two
  
- 8) In a graph, every vertex has degree \_\_\_\_\_ is called as regular graph.  
 a) Odd     b) Even  
 c) Same    d) None of these

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

- a) Define Pseudo graph with example.
- b) Draw the graphs  $K_4$  &  $N_5$
- c) Define length of path.
- d) Draw all possible sub graphs of following graph.



- e) Draw the complement of following graph.



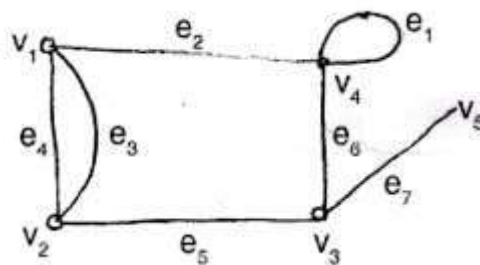
- f) Define Tree with example.

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

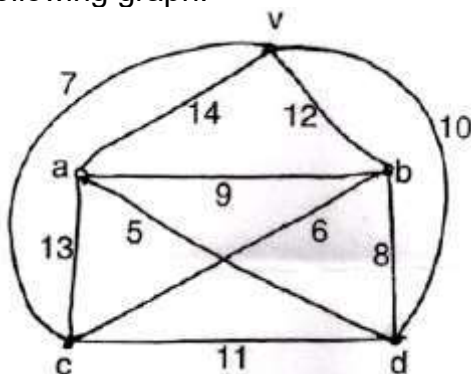
- a) Define complete bipartite graph & draw the graph  $K_{2,3}$  &  $K_{4,3}$
- b) Write the note on Chinese postman problem.
- c) Explain Hamiltonian graph with example.

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

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

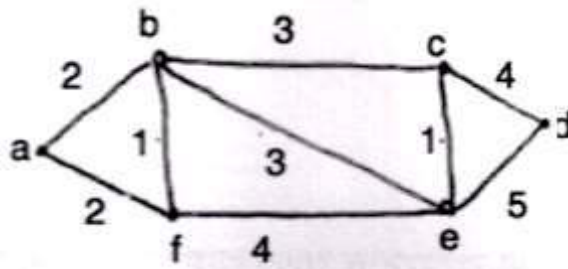


- 2) a) Draw the graph which is neither Euler circuit nor Hamilton cycle.
- b) Draw the graph which is Hamilton cycle but not Euler circuit.
- 3) By starting with vertex v, solve the travelling salesman problem for the following graph.

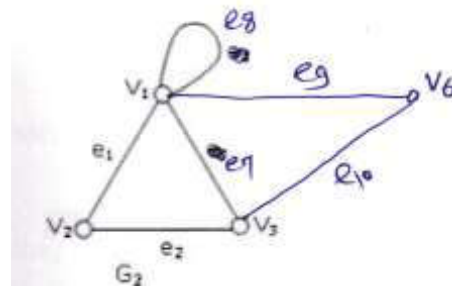
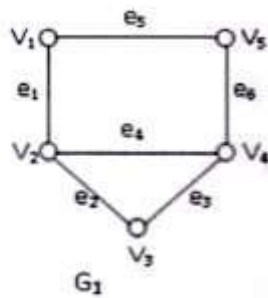


Q.5 Answer any one of the following questions.

- a) What is Shortest Spanning tree? By using Kruskal's algorithm find the shortest spanning tree and its weight from the following graph.



- b) 1) State & prove Shaking hand lemma.  
 2) Find the union of following graphs.



Seat  
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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Statistical Methods - II (19409207)**

Day & Date: Friday, 08-12-2023  
 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 any type of calculator is allowed.  
 4) Draw neat diagrams and give equations wherever necessary.

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

- 1) Addition principle of counting provides number of ways in which \_\_\_\_\_ operations can be done.
  - a) one of the
  - b) all of the
  - c) some of the
  - d) None of these
- 2) The event which does not contain any sample point is called as \_\_\_\_\_.
  - a) Null event
  - b) Sure event
  - c) Simple event
  - d) Compound event
- 3) If  $A$  and  $B$  are exhaustive events, then \_\_\_\_\_.
  - a)  $P(A \cup B) = 1$
  - b)  $P(A \cap B) = 1$
  - c)  $P(A \cup B) \leq 1$
  - d) None of these
- 4) For a discrete random variable  $X$  if  $E(X) = 3$  then  $E(2X + 10) =$  \_\_\_\_\_.
  - a) 6
  - b) 16
  - c) 4
  - d) 10
- 5) If ' $X$ ' has Binomial distribution with parameter  $(n, p)$  then  $E(X) =$  \_\_\_\_\_.
  - a)  $np$
  - b)  $npq$
  - c)  $nq$
  - d)  $n/p$
- 6) Which of the following distribution have mean and variance equal?
  - a) Binomial distribution
  - b) Poisson distribution
  - c) Geometric distribution
  - d) All of these
- 7) The function  $f(x)$  is said to be probability density function of the continuous random variable ' $X$ ' if \_\_\_\_\_.
  - a)  $f(x) \geq 0 \forall x$
  - b)  $\int f(x)dx = 1$
  - c) Both a and b
  - d) None of these
- 8) Let  $X \rightarrow N(0,1), Y \rightarrow N(0,1)$  If  $X$  and  $Y$  are independent random variables then  $X + Y \rightarrow$  \_\_\_\_\_.
  - a)  $N(0,1)$
  - b)  $N(0,2)$
  - c)  $N(0, \sqrt{2})$
  - d) None of these

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

- a) State additive property of Binomial distribution.
- b) Define Permutation.
- c) If  $X \rightarrow N(4,9)$  then find distribution of  $2x + 3$
- d) If  $P(A) = 0.4$   $P(B) = 0.3$   $P(A \cap B) = 0.2$  then find  $P(A/B)$
- e) Define probability mass function of discrete random variable.
- f) Define expectation of continuous random variable.

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

- a) Addition and multiplication law of probability
- b) Properties of distribution function of discrete random variable
- c) Define Uniform distribution. State its mean and variance.

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

- a) How many 3-digit numbers can be formed using the digits 1, 2, 3, 4, 5 if -
  - i) repetition of any digit is not allowed
  - ii) repetition of any digit is allowed
- b) A continuous random variable 'X' has p.d.f. given by,
 
$$f(x) = cx^2 \quad ; \text{if } 0 \leq x \leq 1$$

$$= 0 \quad ; \text{otherwise}$$

Find

- i) the value of  $c$
- ii)  $E(X)$
- c) If  $X \rightarrow B(n = 10, P = 0.4)$  then find
  - i)  $P(x = 3)$
  - ii)  $P(0 < x < 3)$

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

- a) State axioms of probability. Prove that probability of any event is always lies between 0 and 1.
- b) A discrete random variable X has p.m.f. given by

X	-2	-1	0	1	2
p(x)	k	2k	2k	0.15	0.10

Find:

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

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

Day & Date: Saturday, 09-12-2023  
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) ALU of 8085 microprocessor consists of \_\_\_\_\_.  
a) accumulator, arithmetic, logic circuits and five flags  
b) accumulator, arithmetic and logic circuits  
c) accumulator, temporary register, arithmetic, logic circuits and five flags  
d) accumulator, temporary register, arithmetic and logic circuits
- 2) The Intel 8086 microprocessor is a \_\_\_\_\_ processor.  
a) 16 bit    b) 32 bit  
c) 8 bit   d) 4 bit
- 3) In which year 8086 microprocessor was introduced?  
a) 1978    b) 1979  
c) 1977   d) 1981
- 4) Which of the following is a type of microprocessor \_\_\_\_\_  
a) CISC   b) RISC  
c) EPIC    d) All of the above
- 5) What is the word length of an 8- bit microprocessor \_\_\_\_\_  
a) 8- bits-64 bits                                       b) 4-bits-32 bits  
c) 8- bits-16 bits                                       d) 8- bits-32 bits
- 6) What is true about microprocessor?  
a) Microprocessor is a controlling unit of micro computer  
b) It is fabricated on a small chip capable of performing ALU operations  
c) It is also communicate with the other devices connected to it  
d) All of this
- 7) In 8- bit microprocessor, how many opcodes are present?  
a) 246   b) 278  
c) 250   d) 256
- 8) Which of the following is a special purpose register of microprocessor?  
a) Program counter                                    b) Instruction register  
c) Accumulator   d) Temporary register

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

08

- a) What are the types of addressing mode in 8085 microprocessor?
- b) What is the microprocessor? Give the power supply and clock frequency of 8085.
- c) What are the purpose of use SID and SOD lines?
- d) Explain priority interrupts of 8085?
- e) Define instruction cycle, machine cycle and T-state.

- Q.3 Write Short Notes (Any Two)** **08**
- a) Draw and explain the basic bus system of 8085 microprocessor.
  - b) Explain how the instructions are classified in 8085 microprocessor.
  - c) Write an assembly language program to multiply and divide two 8-bit numbers.
- Q.4 Answer the following (Any Two)** **08**
- a) Write the difference between microprocessor and microcontroller.
  - b) Explain the features of 8085 in detail.
  - c) Explain the various addressing modes of 8085 microprocessor with example.
- Q.5 Answer the following (Any One)** **08**
- a) Explain with neat block diagram the architecture of 8085 microprocessor.
  - b) Describe different types of interrupts used in 8085 microprocessor.

Seat  
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**B.C.A. (Semester - II) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Software Engineering - II (19409209)**

Day & Date: Sunday, 10-12-2023  
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple choice question****08**

- 1) Decision table is a combination of \_\_\_\_\_.
  - a) Stubs and conditions
  - b) Conditions and actions
  - c) Input and output
  - d) None of these
- 2) Data dictionary is also called as \_\_\_\_\_.
  - a) Catalog
  - b) Central repository
  - c) Both A & B
  - d) None of these
- 3) An entity in ER Model is a real world being, which has some properties called \_\_\_\_\_.
  - a) Attributes
  - b) Relationship
  - c) Domain
  - d) None of these
- 4) The relation between data items and removing unnecessary data item is known as \_\_\_\_\_.
  - a) ERD
  - b) DFD
  - c) Normalization
  - d) None of these
- 5) The testing in which code is checked?
  - a) Black box testing
  - b) White box testing
  - c) Red box testing
  - d) Green box testing
- 6) Level-O DFD is similar to \_\_\_\_\_.
  - a) Use case diagram
  - b) Context diagram
  - c) System diagram
  - d) None of the above
- 7) Which of the following system implementation approach should be used if you want to run the old system and the new system at the same time for a specified period?
  - a) Direct
  - b) Pilot
  - c) phased
  - d) Parallel
- 8) Which of the following is not a content of data dictionary?
  - a) Physical Location of data
  - b) Data composition
  - c) Data Aliases
  - d) None of these

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

- a) What is Flowchart?
- b) What is the purpose of DFD?
- c) What is Data Dictionary?
- d) Define the term Software Testing.
- e) What is Normalization?
- f) Write the steps of traditional approach to implementation.



- Q.3 Write short notes on any two of the following. 08**
- 1) White Box Testing
  - 2) HIPO Chart.
  - 3) State the principles of flowcharting
- Q.4 Answer any two of the following. 08**
- 1) Explain the various contents of Data dictionary.
  - 2) Draw a Decision tree for following case study.  
A Co-operative bank XYZ will grant loans under the following conditions:
    - i) If a customer has an account with the bank and has no loan outstanding, loan will be granted.
    - ii) If a customer has an account with the bank but some amount is outstanding from previous loan, then loan will be granted if special management approval is obtained.
    - iii) Reject loan application in all other cases.
  - 3) Explain various symbols used in DFD.
- Q.5 Answer any One of the following. 08**
- a) Draw a CLD and first level DFD for College Admission System.
  - b) Define the term Entity, Attribute and Relationship. Explain types of relationship with example.

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**B.C.A. (Semester- III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Object Oriented Programming Using Java – I (BCA1301)**

Day & Date: Wednesday, 13-12-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

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

- 1) Which of the following option leads to the portability and security of Java.
  - a) Byte code is executed by JVM
  - b) The applet makes the Java code secure and portable
  - c) Use of exception handling
  - d) Dynamic binding between objects
- 2) Arrays in java are \_\_\_\_\_.
  - a) object references
  - b) object
  - c) primitive data type
  - d) None of these
- 3) Which of these cannot be used for a variable name in Java?
  - a) identifier & keyword
  - b) identifier
  - c) keyword
  - d) None of the above
- 4) Which of the following is not an OOPS concept in Java?
  - a) Polymorphism
  - b) Inheritance
  - c) Compilation
  - d) Encapsulation
- 5) Which of this keyword must be used to inherit a class?
  - a) super
  - b) this
  - c) extent
  - d) extends
- 6) Which of these keywords are used to define an abstract class?
  - a) abst
  - b) abstract
  - c) Abstract
  - d) abstract class
- 7) Which of these keywords is not a part of exception handling?
  - a) try
  - b) finally
  - c) thrown
  - d) catch
- 8) Which of these packages contains abstract keyword?
  - a) java.lang
  - b) java.util
  - c) java.io
  - d) java.system

- Q.2 Answer any four of the following. 08**
- a) What is java programming?
  - b) Define String in java.
  - c) What is Inheritance?
  - d) What is Interface?
  - e) What is Abstract Class?
  - f) Define Class and object in java?
- Q.3 Write short notes on any two of the following. 08**
- a) Write Short note on Switch statement in java.
  - b) Write Short note on String buffer class method.
  - c) Write Short note on Polymorphism.
- Q.4 Answer any Two of the following. 08**
- a) Explain different of Features of Java.
  - b) What is Exception Handling? Explain Try-catch block with example?
  - c) What is method overload? Explain method overload with example?
- Q.5 Answer any one of the following. 08**
- a) What is Array? Explain different types of Array in java.
  - b) Explain Hierarchy of Output Stream and Input Stream class with example?

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Data Structure Using 'C'-I (BCA1302)**

Day & Date: Thursday, 14-12-2023  
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.

**Q.1 Multiple choice questions.**

**08**

- 1) The situation when in a linked list START=NULL is \_\_\_\_\_.
  - a) Underflow
  - b) Overflow
  - c) Houseful
  - d) Saturated
- 2) Which of the following is non-linear data structure?
  - a) Stacks
  - b) List
  - c) Strings
  - d) None of these
- 3) \_\_\_\_\_ form of access is used to add and remove nodes from a queue.
  - a) LIFO, Last In First Out
  - b) FIFO, First In First Out
  - c) Both a and b
  - d) None of these
- 4) A parentheses checker program would be best implemented using \_\_\_\_\_.
  - a) Stack
  - b) Queue
  - c) Linked List
  - d) All of these
- 5) Which of the following linked list does not consist NULL links?
  - a) Single linked list
  - b) Double linked list
  - c) Circular linked list
  - d) None
- 6) A mathematical-model with a collection of operations defined on that model is called \_\_\_\_\_.
  - a) Data Structure
  - b) Abstract Data Type
  - c) Primitive Data Type
  - d) Algorithm
- 7) Which of the following case does not exist in complexity theory?
  - a) Best Case
  - b) Worst Case
  - c) Average Case
  - d) Null Case
- 8) push() and pop() function are found in?
  - a) Stack
  - b) Queue
  - c) Linked list
  - d) All of these

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

**08**

- a) How doubly linked list can be represented?
- b) What are benefits of ADT?
- c) Which are the operations performed in list?
- d) What are the applications of queue?
- e) What are the advantages of linked list?
- f) Differentiate between single and two dimensional array.

- Q.3 Write short notes on (Any Two) 08**
- a) Disadvantages of Array over Linked List
  - b) Priority queue
  - c) Greedy Algorithm
- Q.4 Answer the following (Any Two) 08**
- a) How the queue is implemented by linked list?
  - b) What are the postfix and prefix forms of the expression?  
 $A+B*(C-D)/(P-R)$
  - c) Differentiate between STACK and QUEUE
- Q.5 Answer the following (Any One) 08**
- a) Explain how to evaluate arithmetic expressions using stack with example.
  - b) Write a 'C' Program to implement doubly linked list and perform the following operations:
    - i) Insert in between
    - ii) Reverse the list

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Database Management System - I (BCA1303)**

Day & Date: Friday, 15-12-2023  
 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 necessary diagrams wherever necessary.
  - 4) Non programmable calculators are allowed.

**Q.1 Multiple choice questions.**

**08**

- 1) Schema definition is written by \_\_\_\_\_.  
 a) Database Administrator                      b) Database Application  
 c) Storage Manager                                d) Database Manager
- 2) Which of the following is not Integrity Constraint?  
 a) Primary Key                                      b) Not Null  
 c) Check    d) Union
- 3) The term "Data independence" refers to \_\_\_\_\_.  
 a) Data is defined separately and not included in the programs  
 b) Programs are not dependent on the logical attributes of the data  
 c) Programs are not dependent on the physical attributes of the data  
 d) Both b) & c)
- 4) Generalization is a \_\_\_\_\_ process.  
 a) Bottom - up                                        b) Top - Down  
 c) Left - Right                                        d) None of the above
- 5) TCL stands for \_\_\_\_\_.  
 a) Transaction control languages  
 b) Transaction command languages  
 c) Transaction connect languages  
 d) None of the Mentioned
- 6) An attribute is a \_\_\_\_\_ in a relation.  
 a) Row     b) Column  
 c) Value    d) Tuple
- 7) How many Primary keys can have in a table?  
 a) Only 1    b) Only 2  
 c) Depends on no of Columns                  d) Depends on DBA
- 8) Where subqueries cannot be used?  
 a) Field names in the SELECT statement  
 b) The WHERE clause only in the SELECT statement  
 c) The WHERE clause in SELECT as well as all DML statements  
 d) The FROM clause in the SELECT statement

- Q.2 Answer any Four of the following.** **08**
- a) Write syntax for Insert command?
  - b) List out the string function.
  - c) What is Sub-queries?
  - d) List out the components of DBMS.
  - e) State the difference between DBMS and RDBMS.
  - f) What is Join? List out the types of join.
- Q.3 Write notes on any Two of the following.** **08**
- a) Order by clause
  - b) 2 - tier and 3 - tier architecture
  - c) Specialization
- Q.4 Answer any Two of the following.** **08**
- a) What is Operator? Explain special operator with example.
  - b) Explain relational algebra operations.
  - c) What is Database? Explain Database Structure.
- Q.5 Answer any One of the following.** **08**
- a) What is Database Language? Explain database languages.
  - b) What is Sequence? Explain sequence with example.

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023  
Software Engineering (BCA1304)**

Day & Date: Saturday, 16-12-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple choice questions.**

**08**

- 1) Which model can be selected if user is involved in all the phases of SDLC?
  - a) Waterfall model
  - b) Prototyping model
  - c) RAD model
  - d) None of these
- 2) The 'Big picture' diagram of a system is the \_\_\_\_\_.
  - a) Logic diagram
  - b) Block diagram
  - c) System flowchart
  - d) Program flowchart
- 3) What threatens the quality and timeliness of the software to be produced?
  - a) Known risks
  - b) Business risks
  - c) Project risks
  - d) Technical risks
- 4) Which of the following is not a type of maintenance?
  - a) Adaptive Maintenance
  - b) Preventive Maintenance
  - c) Perfective Maintenance
  - d) Performative Maintenance
- 5) Which of the following is not content of data dictionary?
  - a) Physical Location of data
  - b) Data composition
  - c) Data Aliases
  - d) None of these
- 6) Problem identification is done during \_\_\_\_\_ phase.
  - a) System design
  - b) System analysis
  - c) System testing
  - d) All of the above
- 7) Decision table is a combination of \_\_\_\_\_.
  - a) Stubs and conditions
  - b) Conditions and actions
  - c) Input and output
  - d) None of these
- 8) Which of the following system implementation approach should be used if you want to run the old system and the new system at the same time for a specified period?
  - a) Direct
  - b) Pilot
  - c) phased
  - d) Parallel

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

**08**

- a) Define the term 'System'.
- b) What is the purpose of DFD?
- c) What is Open and closed system?
- d) Who is 'System Analyst'?
- e) Write any 2 benefits of prototyping.
- f) What is Flowchart?



- Q.3 Write short notes on any two of the following. 08**
- a) Elements of the system.
  - b) Feasibility study.
  - c) Explain following qualities of software: i) Performance ii) Productivity
- Q.4 Answer any Two of the following. 08**
- a) Explain Waterfall model.
  - b) Draw a Decision tree for following case study  
A Co-operative bank XYZ will grant loans under the following conditions:
    - i) If a customer has an account with the bank and has no loan outstanding, loan will be granted.
    - ii) If a customer has an account with the bank but some amount is outstanding from previous loan, then loan will be granted if special management approval is obtained.
    - iii) Reject loan application in all other cases.
  - c) Explain various symbols used in DFD.
- Q.5 Answer any One of the following. 08**
- a) What is Normalization? Explain up to 3NF with example.
  - b) Define the term Entity, Attribute and Relationship. Explain types of relationship with example.

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Web Development using PHP (SEC-1)**

Day & Date: Sunday, 17-12-2023  
 Time: 09:00 AM To 12:00 PM

Max. Marks: 80

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

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

**10**

- 1) PHP Stands for \_\_\_\_\_.
  - a) Php Hypertext Processor
  - b) Php Hypertext Preprocessor
  - c) Php Hypermarkup Preprocessor
  - d) Php Hypermarkup Processor
- 2) In PHP, each statement must be end with \_\_\_\_\_.
  - a) . (dot)
  - b) ; (semicolon)
  - c) // (slash)
  - d) : (colon)
- 3) In PHP Language variables name starts with \_\_\_\_\_.
  - a) ! (Exclamation)
  - b) & (Ampersand)
  - c) \* (Asterisk)
  - d) \$ (Dollar)
- 4) Which of the following is not the scope of Variable in PHP?
  - a) Local
  - b) Global
  - c) Static
  - d) Extern
- 5) What does fopen() function do in PHP?
  - a) It used to open files in PHP
  - b) It used to open Remote Server
  - c) It used to open folders in PHP
  - d) It used to open Remote Computer
- 6) What does isset() function do in PHP?
  - a) There is no such function in PHP
  - b) It checks whether variable is set or not
  - c) It checks whether variable is free or not
  - d) It checks whether variable is string
- 7) Which one of the following methods is responsible for sending the query to the database?
  - a) query()
  - b) send\_query()
  - c) sendquery()
  - d) mysqli\_query()

## SLR-DG-32

- 8) The \_\_\_\_\_ function is used to read a single character from a file.
  - a) fgetc()
  - b) fgets()
  - c) fget()
  - d) fgetf()
- 9) The \_\_\_\_\_ function checks if the "end-of-file" (EOF) has been reached.
  - a) f\_eof()
  - b) f\_of()
  - c) feofs()
  - d) feof()
- 10) Which of the following is the Concatenation Operator in PHP?
  - a) + (Plus)
  - b) . (dot)
  - c) & (Ampersand)
  - d) % (Percentage)

**B) Fill in the blank/Definition/One sentence answer/ One word answer/ 06 Give the name/Predict the product etc.**

- 1) What is PHP?
- 2) What is NULL?
- 3) What is the purpose of continue statement?
- 4) What is numeric?
- 5) Which Function used to find the length of a string in PHP?
- 6) How will you get information sent via get method in PHP?

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

16

- a) What is the use of \$\_REQUEST variable?
- b) How will you include the content of a PHP file into another PHP file?
- c) How will you open a file in readonly mode?
- d) How will you start a session in PHP?
- e) How will you access the size of the uploaded file in PHP?
- f) What is the purpose of \$GLOBALS variable in PHP?
- g) How will you get me current date and time using PHP?
- h) How will you connect a MySQL database using PHP?
- i) Explain Dynamic website.
- j) What are arithmetic operators?

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

10

- 1) Explain the difference between Static and Dynamic Websites
- 2) Explain the syntax and usage of Multidimensional Arrays in PHP. Give example
- 3) What are Cookies? How are they created, used and deleted in PHP? Give examples.

**B) How is file opened & closed in PHP? Discuss the various file opening modes.**

06

- Q.4 A) Attempt any Two of the following. 08**
- 1) Discuss the get and post methods used in HTTP to handle form data.
  - 2) Write the PHP code for fetching the data from a database to a webpage.
  - 3) Discuss the various looping statements used in PHP with suitable example.
- B) Explain Ternary operator, Break and continue statements. 08**
- Q.5 Attempt any Two of the following. 16**
- a) What is Session? Explain session state management in detail.
  - b) Explain `str_replace()`, `strcmp()`, `strlen()`, `strpos()` functions.
  - c) What is validation? Create a registration form with validation.

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Financial Accounting with Tally (BCA1305)**

Day & Date: Monday, 18-12-2023  
 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) Solapur university A/c \_\_\_\_\_ type of account.
  - a) Real account
  - b) Personal A/c
  - c) Nominal Ac
  - d) None of these
- 2) Amount invested in business is called as \_\_\_\_\_.
  - a) Drawing
  - b) Capital
  - c) Liability
  - d) None of these
- 3) What is the full form of TDS?
  - a) Tax Declared at Source
  - b) Tax Decided at Source
  - c) Tax Deducted at Source
  - d) None of these
- 4) \_\_\_\_\_ is explanation for the journal entries passed.
  - a) Voucher
  - b) Transaction
  - c) Narration
  - d) Invoice
- 5) In Tally for Receipt Voucher \_\_\_\_\_ key used.
  - a) F6
  - b) F7
  - c) F8
  - d) F9
- 6) Which voucher type is used to transfer amount from one bank to another?
  - a) Payment
  - b) Receipts
  - c) Contra
  - d) Post-dated
- 7) Which short key used for change the period in Tally?
  - a) F2
  - b) F3
  - c) Alt+F3
  - d) Alt+F2
- 8) Which shortcut key is pressed for cancel voucher entry?
  - a) Alt+A
  - b) Alt+C
  - c) Alt+X
  - d) Alt+D

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

**08**

- a) Define Book-keeping.
- b) Explain the Rule of Nominal A/c.
- c) Specimen of Ledger.
- d) How can you create Ledger A/c in Tally?
- e) How can you copy and paste the text in Tally?
- f) How can you create Group in Tally?

- Q.3 Write short notes on (Any Two) 08**
- Accounting Concepts.
  - Debtors and Creditors
  - Explain the features of Tally?
- Q.4 Answer the following (Any Two) 08**
- What is the difference between Book-keeping & Accountancy?
  - Explain the advantages of double entry book-keeping?
  - Explain the importance of Bank Reconciliation Statement?
- Q.5 Answer the following (Any One) 08**
- Explain the list of Groups in Tally?
  - Journalize the following transaction in the books of Vaishnavi for the month of July 2019  
1<sup>st</sup> July 2019, Vaishnavi started business with cash ₹ 1,00,000.  
2<sup>nd</sup>, Deposited cash into bank of ₹ 10,000 for open new bank account  
3<sup>rd</sup>, Purchased furniture from S & Sons ₹ 20,000  
5<sup>th</sup>, Purchased goods from M & Co. on credit ₹ 50,000  
8<sup>th</sup>, Sold goods to G & Co. ₹ 20,000  
12<sup>th</sup>, Sold goods to Ram ₹ 30,000 by cheque  
13<sup>th</sup>, Paid Electricity bill of ₹ 2,000 by cheque  
15<sup>th</sup>, Received commission Rs. 500  
Assuming CGST @8% and SGST@8%

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**B.C.A. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**Operating System - II (BCA1306)**

Day & Date: Tuesday, 19-12-2023  
 Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple choice question.****08**

- 1) A set of processes is deadlock if \_\_\_\_\_.
  - a) Each process is blocked and will remain so forever
  - b) Each process is terminated
  - c) All processes are trying to kill each other
  - d) None of the mentioned
- 2) \_\_\_\_\_ algorithm has lowest page fault rate.
  - a) FIFO
  - b) LRU
  - c) Optimal page replacement
  - d) None of the above
- 3) A process can be terminated due to \_\_\_\_\_.
  - a) Normal exit
  - b) Fatal error
  - c) Killed by another process
  - d) all of the mentioned
- 4) Virtual memory is implemented using \_\_\_\_\_.
  - a) Demand Paging
  - b) Swapping
  - c) Fragmentation
  - d) None of these
- 5) A direct method of deadlock prevention is to prevent the occurrence of \_\_\_\_\_.
  - a) Mutual exclusion
  - b) Hold and Wait
  - c) Circular wait
  - d) All of the above
- 6) File type can be represented by \_\_\_\_\_.
  - a) File name
  - b) File extension
  - c) File identifier
  - d) None of the above
- 7) In a segmentation scheme the logical memory will be divided into \_\_\_\_\_.
  - a) Pages
  - b) Frames
  - c) Blocks
  - d) Segments
- 8) Which directory implementation is used in most Operating System?
  - a) Single level directory structure
  - b) Two level directory structure
  - c) Tree directory structure
  - d) Acyclic directory structure

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

- a) What is paging?
- b) What is Contiguous Memory allocation?
- c) Define the term Segmentation?
- d) What is mean by compaction?
- e) What is Dynamic Loading?
- f) What is Virtual Memory?

- Q.3 Write short notes on any two of the following. 08**
- a) Resource Allocation Graph
  - b) Demand paging
  - c) File concept
- Q.4 Answer any Two of the following. 08**
- a) Define the term deadlock? Explain the necessary conditions for deadlock to occur?
  - b) What is fragmentation? Explain types of fragmentation?
  - c) What is disk scheduling? Explain FCFS disk scheduling algorithms.
- Q.5 Answer any one of the following. 08**
- a) Explain banker's algorithm with example?
  - b) What is page replacement? Write the working of Least Recently used (LRU), page replacement algorithm?



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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023  
OOPS with C++-I (19409301)**

Day & Date: Wednesday, 13-12-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple choice question.****08**

- 1) What are the actual parameters in C++?
  - a) Parameters with which functions are called
  - b) Parameters which are used in the definition of a function
  - c) Variables other than passed parameters in a function
  - d) Variables that are never used in the function
- 2) Which members are inherited but are not accessible in any case?
  - a) Private
  - b) Public
  - c) Protected
  - d) Both private and protected
- 3) C++ is \_\_\_\_\_.
  - a) procedural programming language
  - b) object oriented programming language
  - c) functional programming language
  - d) both procedural and object oriented programming language
- 4) Which of the following is an exit-controlled loop?
  - a) For
  - b) While
  - c) do-while
  - d) all of the mentioned
- 5) What is the other name of compile-time polymorphism?
  - a) Static polymorphism
  - b) Dynamic polymorphism
  - c) Executing polymorphism
  - d) Non-executing polymorphism
- 6) Which of the following is correct?
  - a) A class is an instance of its objects
  - b) An object is an instance of its class
  - c) A class is an instance of the data type that the class have
  - d) An object is an instance of the data type of the class
- 7) The data members and functions of a class in C++ are by default \_\_\_\_\_.
  - a) Protected
  - b) Private
  - c) Public
  - d) public & protected
- 8) Which of the following operator cannot be overloaded?
  - a) +
  - b) ?:
  - c) -
  - d) %

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

- a) Define object-oriented programming.
- b) What is a class?
- c) What is an inline function?
- d) What are the types of a constructor?
- e) What are the different features of C++?
- f) What is function overloading?

- Q.3 Write short notes on any two of the following. 08**
- a) Explain comparison between POP and OOP.
  - b) Explain Applications of OOPs.
  - c) Explain friend function.
- Q.4 Answer any two of the following. 08**
- a) What is pointer to object? Explain with example.
  - b) Explain different access specifier.
  - c) Write a program to calculate factorial of given numbers.
- Q.5 Answer any one of the following. 08**
- a) Write a program for constructor overloading.
  - b) Explain type conversion. Implicit and explicit with example.

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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023  
Data Structures Using 'C'- I (19409302)**

Day & Date: Thursday, 14-12-2023  
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 foil marks.

**Q.1 Multiple choice question.**

**08**

- 1) The data structure required to check whether an expression contains a balanced parenthesis is?
  - a) Stack
  - b) Queue
  - c) Array
  - d) Tree
- 2) Linked list is considered as an example of \_\_\_\_\_ type of memory allocation.
  - a) Dynamic
  - b) Static
  - c) Compile time
  - d) Heap
- 3) A data structure in which elements can be inserted or deleted at/from both ends but not in the middle is?
  - a) Queue
  - b) Circular queue
  - c) Dequeue
  - d) Priority queue
- 4) Which of the following statement(s) about stack data structure is/are NOT correct?
  - a) Linked List are used for implementing Stacks
  - b) Top of the Stack always contain the new node
  - c) Stack is the FIFO data structure
  - d) Null link is present in the last node at the bottom of the stack
- 5) Which of these is not an application of a linked list?
  - a) To implement file systems
  - b) For separate chaining in hash-tables
  - c) To implement non-binary trees
  - d) Random Access of elements
- 6) What are the disadvantages of arrays?
  - a) Data structure like queue or stack cannot be implemented
  - b) There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size
  - c) Index value of an array can be negative
  - d) Elements are sequentially accessed
- 7) Queues serve major role in \_\_\_\_\_.
  - a) Simulation of recursion
  - b) Simulation of arbitrary linked list
  - c) Simulation of limited resource allocation
  - d) Simulation of heap sort
- 8) What is the value of the postfix expression 6 3 2 4 + -\*?
  - a) 1
  - b) 40
  - c) 74
  - d) -18

- Q.2 Answer the following (Any Four) 08**
- a) Convert the infix expression  $a - b / (c + d * e)$  into postfix form.
  - b) Explain Node structure of Doubly Linked List.
  - c) Explain any 2 applications of Queue
  - d) Define 'two dimensional' array and write its declaration syntax.
  - e) Write difference between stack and queue.
  - f) Define Single Linear list.
- Q.3 Write short notes on (Any Two) 08**
- a) Applications of stack.
  - b) Priority Queue
  - c) Singular Linked List.
- Q.4 Answer the following (Any Two) 08**
- a) Write an algorithm that evaluates postfix expression using stack.
  - b) What is Array? Explain types of array in detail.
  - c) What is doubly linear linked list? Implement function that reverses it.
- Q.5 Answer the following (Any One) 08**
- a) Write a program to implement circular queue.
  - b) What is Linear linked list? Explain its following operations:-
    - 1) insert\_last()
    - 2) Search()
    - 3) remove\_after()

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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Database Management System (19409303)**

Day & Date: Friday, 15-12-2023  
 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.

**Q.1 Multiple choice question.**

**08**

- 1) If a transaction does not modify the database until it has committed, it is said to use the \_\_\_\_\_ technique.
  - a) Deferred-modification
  - b) Late-modification
  - c) Immediate-modification
  - d) Undo
- 2) Tree structures are used to store data in \_\_\_\_\_ model.
  - a) Network
  - b) Relational
  - c) Hierarchical
  - d) File based system
- 3) A collection of interrelated records is called a \_\_\_\_\_.
  - a) Database
  - b) Spreadsheet
  - c) Management information system
  - d) Text file
- 4) The overall description of a database is called \_\_\_\_\_.
  - a) Data integrity
  - b) Data manipulation
  - c) Database schema
  - d) Data definition
- 5) The ability to change the conceptual schema without affecting the external schemas or application programs is known as \_\_\_\_\_.
  - a) Program-data independence
  - b) Logical data independence
  - c) Physical data independence
  - d) Data abstraction
- 6) Which of the following is a top-down approach in which the entity's higher level can be divided into two lower sub-entities?
  - a) Aggregation
  - b) Generalization
  - c) Specialization
  - d) All of these
- 7) The number of attributes in relation is called as \_\_\_\_\_.
  - a) Cardinality
  - b) Degree
  - c) Tuples
  - d) Entity
- 8) What does Rollback do?
  - a) Undoes the transactions before commit
  - b) Clears all transactions
  - c) Redoes the transactions before commit
  - d) No action

- Q.2 Answer the following questions briefly. (Any Four) 08**
- a) List out the advantages of DBMS.
  - b) What is relationship and its types?
  - c) What is deadlock?
  - d) What are the types of locks?
  - e) List out the advantages of Data Distribution.
  - f) What is union operation?
- Q.3 Write short notes on any Two of the following. 08**
- a) Distinguish between Serial Schedule and Serializable Schedule
  - b) Generalization
  - c) Database Users
- Q.4 Answer any Two of the following. 08**
- a) Explain shadow paging.
  - b) Explain immediate database modification algorithm.
  - c) Explain ACID properties of transaction.
- Q.5 Answer any One of the following. 08**
- a) Explain timestamp ordering protocol with example.
  - b) Explain various concurrency control problems with example.

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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023  
Software Testing & Quality Assurance (19409304)**

Day & Date: Saturday, 16-12-2023  
Time: 09:00 AM To 11:00 AM

Max. Marks: 40

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

**Q.1 Multiple choice questions.**

**08**

- 1) Black Box Testing is also known as \_\_\_\_\_.  
a) Behavioral Testing                      b) Flow Testing  
c) Data Testing                              d) Control structure testing
- 2) \_\_\_\_\_ is not an appraisal cost in SQA.  
a) Inter-process inspection              b) Quality planning  
c) Maintenance                              d) Testing
- 3) Deferred status in bug life cycle means \_\_\_\_\_.  
a) Developer feels that the bug is not genuine  
b) Bug is repeated twice or the two bugs mention the same concept of the bug  
c) The bug is expected to be fixed in next releases  
d) It is not bug at all
- 4) \_\_\_\_\_ technique we called sometimes as a glass box testing.  
a) White box testing                      b) Control structure testing  
c) Black box testing                      d) Gray box testing
- 5) Faults are found most cost effectively in which test activity \_\_\_\_\_.  
a) Design                                      b) Execution  
c) Planning                                    d) Check Exit criteria completion
- 6) \_\_\_\_\_ is the objective of integration testing.  
a) To verify that system is functioning according to specified requirements  
b) To verify that system meets user expectation and needs  
c) To verify that system separately testable modules are functioning properly  
d) To verify that interfaces between different parts of system
- 7) Alpha testing is done at \_\_\_\_\_.  
a) developer"s end                      b) user"s end  
c) developer"s & user"s end              d) none of the mentioned
- 8) \_\_\_\_\_ is largest bug producer.  
a) code                                        b) design  
c) analysis                                    d) specification

- Q.2 Answers any four of the following. 08**
- a) Soak Testing
  - b) Automation Testing
  - c) Smoke Testing
  - d) Use Case Testing
  - e) Defect Tracking
  - f) Adhoc Testing
- Q.3 Write short notes on any two of the following. 08**
- a) Explain Difference between Bug, Defect, Failure, Error.
  - b) What is Test Case? Explain Types of Test Cases.
  - c) What is Software Testing? Importance or need of software testing.
- Q.4 Answers any Two of the following. 08**
- a) Explain Types of Bugs.
  - b) Explain Integration Testing & Top-Down, Bottom-Up type.
  - c) Explain Advantages & Disadvantages of WBT.
- Q.5 Answer any one of the following. 08**
- a) Explain Statement Coverage Testing, Branch Coverage Testing, Path Coverage Testing in WBT.
  - b) Explain Performance Testing and its types.



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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Web Development Using PHP (19409305)**

Day & Date: Sunday, 17-12-2023  
 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) Who is the father of PHP?
  - a) Rasmus Lerdorf
  - b) William Makepiece
  - c) Drek Kolkevi
  - d) List Barely
- 2) What does SPL stands for in Php?
  - a) Source PHP List
  - b) Standard PHP List
  - c) Standard PHP Library
  - d) None of the above
- 3) Which of the following is used to create a session?
  - a) \$\_SESSION[]
  - b) isset() function
  - c) session\_start() function
  - d) session\_destroy() function
- 4) Which of the following function is used to compress a string?
  - a) zip()
  - b) compress()
  - c) zip\_compress()
  - d) gzcompress()
- 5) Which of the following variables is not a predefined variable in PHP?
  - a) \$get
  - b) \$post
  - c) \$request
  - d) \$ask
- 6) Which PHP function is used to find files?
  - a) file()
  - b) fold()
  - c) glob()
  - d) None of the above
- 7) What is the latest version of PHP?
  - a) PHP 3
  - b) PHP 5
  - c) PHP 7
  - d) PHP 8
- 8) How to define a function in PHP?
  - a) function {function body}
  - b) functionName(parameters) {function body}
  - c) function functionName(parameters) {function body}
  - d) None of the above

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

- a) What is Variables in PHP?
- b) Include () function.
- c) Explain Static website.
- d) Explain any four date and time function with example.
- e) How data type of variable are tested? Explain with example.
- f) What is multidimensional array? Explain with example.

- Q.3 Write short notes on any two of the following. 08**
- a) Explain different forms controls, its properties, methods and events.
  - b) Write note on passing arguments to a function by reference.
  - c) What is array? Types of arrays with example.
- Q.4 Answer any two of the following. 08**
- a) Explain different sorting techniques of arrays with proper examples.
  - b) Difference between Static website vs Dynamic website development.
  - c) What is Control statements in PHP?
- Q.5 Answer any one of the following. 08**
- a) Design web page which insert, delete and update records.
  - b) What is Session? Explain session state management in detail.

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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023  
Computer Networks – I (19409306)**

Day & Date: Monday, 18-12-2023  
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) Computer Network is \_\_\_\_\_.
  - a) Collection of hardware components and computers
  - b) Interconnected by communication channels
  - c) Sharing of resources and information
  - d) All of the Above
- 2) For a \_\_\_\_\_ channel, we need to use the Shannon capacity to find the maximum bit rate.
  - a) Noiseless
  - b) noisy
  - c) low-pass
  - d) band pass
- 3) \_\_\_\_\_ provides a connection-oriented reliable service for sending messages.
  - a) TCP
  - b) IP
  - c) UDP
  - d) All of the above
- 4) Addressing mechanism is done at \_\_\_\_\_.
  - a) Physical Layer
  - b) Data Link Layer
  - c) Application Layer
  - d) Physical Layer
- 5) Coaxial cable consists of \_\_\_\_\_ concentric copper conductors
  - a) 1
  - b) 2
  - c) 3
  - d) 4
- 6) Which one of the following is not a network topology?
  - a) Star
  - b) Ring
  - c) Bus
  - d) Peer to Peer
- 7) Physical or logical arrangement of network is \_\_\_\_\_.
  - a) Networking
  - b) Routing
  - c) Topology
  - d) Linking
- 8) \_\_\_\_\_ Topology there is a central controller or hub
  - a) Mesh
  - b) Star
  - c) Ring
  - d) Bus

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

**08**

- a) Define Computer Network?
- b) Define the term half-duplex and full-duplex.
- c) What are the different transmission media?
- d) Define Analog and Digital signal?
- e) What is Attenuation?
- f) Define the term Period and Phase

- Q.3 Write short notes on any Two of the following. 08**
- a) Write Short on Hubs
  - b) Write short on Twisted Pair Cable
  - c) Write short on Multiple Access Protocol-ALOHA
- Q.4 Answer any Two of the following. 08**
- a) Explain Parallel and Serial Transmission Mode in physical layer?
  - b) What is transmission media? Explain Fiber Optic Cable transmission media
  - c) What is mean by Switching? Explain Message Switching?
- Q.5 Answer any One of the following. 08**
- a) Explain ISO- OSI Reference Model in detail with suitable diagram?
  - b) Explain different Design issues of Data link layer?

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**B.C.A. (Semester - III) (Old) (CBCS) Examination: Oct/Nov-2023**  
**Financial Accounting with Tally (19409307)**

Day & Date: Tuesday, 19-12-2023  
 Time: 09:00 AM To 12:00 PM

Max. Marks: 80

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

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

- 1) In Tally to change the features of the company \_\_\_\_\_ key is used.
  - a) f12
  - b) F4
  - c) F11
  - d) F1
- 2) The \_\_\_\_\_ is an arithmetical check of all transactions done as per date.
  - a) Trial Balance
  - b) Ledger
  - c) Balance Sheet
  - d) Profit & Loss account
- 3) Which option is used to enable VAT, TDS and Services Tax in Tally?
  - a) Accounting features
  - b) Inventory features
  - c) Statutory and taxation
  - d) None of these
- 4) In receipts voucher, cash account has \_\_\_\_\_ type of balance.
  - a) Cash
  - b) Journal
  - c) Credit
  - d) Debit
- 5) Which option is used in tally to make changes in created company?
  - a) Select company
  - b) Shut company
  - c) Alter
  - d) None of these.
- 6) Gradual and permanent decrease in the value of assets is known as \_\_\_\_\_.
  - a) Discount
  - b) Interest
  - c) Depreciation
  - d) Installment
- 7) \_\_\_\_\_ is an explanation of the journal entries passed.
  - a) Invoice
  - b) Voucher
  - c) Transaction
  - d) Narration
- 8) Sales journal records only \_\_\_\_\_ Sales of goods.
  - a) Debit
  - b) Credit
  - c) Excess
  - d) None
- 9) The entire ledger is summarized in the form of a \_\_\_\_\_.
  - a) Journal
  - b) Balance sheet
  - c) Final account
  - d) Trial Balance
- 10) According to law who has to pay TDS to the Income Tax Department?
  - a) Service Provider
  - b) Service Receiver
  - c) Service Provider and Service Receiver both
  - d) There is no such provision

- B) Fill in the blanks. 06**
- 1) Expense incurred on administration come under \_\_\_\_\_ expense group.
  - 2) Stock items can be viewed through \_\_\_\_\_ book.
  - 3) Golden rule of classification of accounts \_\_\_\_\_ the receiver, \_\_\_\_\_ the giver.
  - 4) \_\_\_\_\_ Sub menu is used for voucher entry in Tally.
  - 5) A person who owes money to the business is called \_\_\_\_\_.
  - 6) Total amount invested by the proprietor into the business is called as \_\_\_\_\_.

- Q.2 Solve any Eight of the following. 16**
- a) What is mean by voucher?
  - b) Long form of E-TCS
  - c) TDS stands for
  - d) SLM stands for
  - e) Liability
  - f) Stock Groups
  - g) Godowns
  - h) Ledger
  - i) FIFO stands for
  - j) Depreciation

- Q.3 A) Attempt any Two of the following. 10**
- 1) Define Accounting and Explain Internal and External users of account.
  - 2) What is TDS? and how to create TDS Master and Ledger in Tally.
  - 3) Draw journal specimen ledger specimen, Trial balance and Balance sheet specimen.

- B) What is E-TDS? How to create TDS ledger. 06**

- Q.4 A) Attempt any Two of the following. 08**
- 1) Discuss the different reasons for difference in balance shown in cash book and balance shown in pass book.
  - 2) What are the advantages of computerized accounting software?
  - 3) Explain the features of tally.

- B) What is mean by purchase order? How can create alter and delete purchase order. 08**

- Q.5 Attempt any Two of the following. 16**
- a) Define voucher and explain different type of vouchers.
  - b) Define groups and Explain types of groups with example.
  - c) Give the advantages and disadvantages of computerized Tally?

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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2023  
OOPS with C++-II (19409401)**

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

Max. Marks: 40

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

**Q.1 Multiple choice question. 08**

- 1) A virtual function that has no definition within the base class is called \_\_\_\_\_.  
 a) Pure virtual function                      b) Pure static function  
 c) Pure Const function                        d) Friend function
- 2) We can create objects of the abstract class \_\_\_\_\_.  
 a) True    b) False
- 3) To create an output stream, we must declare the stream to be of class \_\_\_\_\_.  
 a) ofstream                                      b) ifstream  
 c) iostream                                        d) None of these
- 4) Which feature can be implemented using encapsulation?  
 a) Inheritance                                    b) Abstraction  
 c) Polymorphism                                d) Overloading
- 5) An exception is thrown using \_\_\_\_\_ keyword in CPP.  
 a) throws                                         b) throw  
 c) threw    d) thrown
- 6) When a child class inherits traits from more than one parent class, this type of inheritance is called \_\_\_\_\_ inheritance.  
 a) Hierarchical                                   b) Hybrid  
 c) Multilevel                                      d) Multiple
- 7) By default, all the files in C++ are opened in \_\_\_\_\_ mode.  
 a) Text    b) Binary  
 c) ISCII     d) VTC
- 8) \_\_\_\_\_ is used to move the file pointer to start of a file.  
 a) ios::beg                                        b) ios::start  
 c) ios::cur                                        d) ios::first

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

- a) What is file?
- b) Which are the file opening modes used in CPP?
- c) What is mean by pure virtual function.
- d) What is the use of inheritance?
- e) What is mean by polymorphism?
- f) What is mean by containership?

- Q.3 Write short note on any two of the following. 08**
- a) Protected visibility mode.
  - b) Class template.
  - c) Virtual base class.
- Q.4 Answer any two of the following. 08**
- a) Write down characteristics of pure virtual function.
  - b) Explain stream classes.
  - c) Explain virtual function with program.
- Q.5 Answer any one of the following. 08**
- a) Explain error handling mechanism using try, catch keyword.
  - b) Explain any two types of inheritance with program.



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**B.C.A. (Semester -IV) (CBCS) Examination: Oct/Nov-2023  
Data Structures using 'C'- 4.0 II (19409402)**

Day & Date: Thursday, 14-12-2023  
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.
  - 5) (At. Wts.: H=1, C=12, O=16, N= 14, Na =23, Cl = 35.5)

**Q.1 Multiple choice question.**

**08**

- 1) Which of the following properties does a simple graph not hold?
  - a) Must be connected
  - b) Must be unweighted
  - c) Must have no loops or multiple edges
  - d) Must have no multiple edges
- 2) Breadth First Search is equivalent to which of the traversal in the Binary Trees?
  - a) Pre-order Traversal
  - b) Post-order Traversal
  - c) Level-order Traversal
  - d) In-order Traversal
- 3) \_\_\_\_\_ is not a stable sorting algorithm?
  - a) Insertion sort
  - b) Selection sort
  - c) Bubble sort
  - d) Merge sort
- 4) 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
- 5) Heap can be used as \_\_\_\_\_.
  - a) Priority queue
  - b) Stack
  - c) A decreasing order array
  - d) Normal Array
- 6) What is an AVL tree?
  - a) A tree which is balanced and is a height balanced tree
  - b) A tree which is unbalanced and is a height balanced tree
  - c) A tree with three children
  - d) A tree with at most 3 children
- 7) Which of the following is not a non-comparison sort?
  - a) Counting sort
  - b) Bucket sort
  - c) Radix sort
  - d) Shell sort
- 8) The Depth First Search traversal of a graph will result into?
  - a) Linked List
  - b) Tree
  - c) Graph with back edges
  - d) Array

- Q.2 Answer any four of the following.** **08**
- a) Define Leaf Node.
  - b) Define Strictly Binary Tree.
  - c) AVL Tree.
  - d) Undirected Graph.
  - e) Merge sort.
  - f) What Is Pre-Order Traversal?
- Q.3 Write short notes on any two of the following.** **08**
- a) What is Heap Tree? Explain its types.
  - b) Write a note on Partition exchanged sort (Quick sort).
  - c) Explain concept & terminologies used in graph.
- Q.4 Answer any Two of the following.** **08**
- a) What is tree? What are the advantages of tree over linked list?
  - b) What is Hashing? Explain different Hash functions.
  - c) WAP of Binary Search using array.
- Q.5 Answer any one of the following.** **08**
- a) What is searching? Explain categories of searching with advantages and disadvantages.
  - b) Explain BFS traversal of graph in detail.



- Q.2 Answer any four of the following. 08**
- a) What is View?
  - b) What is Join?
  - c) What is mean by transaction?
  - d) Differentiate between the procedure and function
  - e) What is Group Function?
  - f) What is Cursor?
- Q.3 Write short notes on any two of the following. 08**
- a) Explain Alter commands with example.
  - b) Explain any four Numeric functions with example.
  - c) Explain the various operator used in SQL.
- Q.4 Answer any Two of the following. 08**
- a) Explain Aggregate function with example.
  - b) What is sub query? Explain its type with example.
  - c) Explain Union and Intersect set of operations with example.
- Q.5 Answer any one of the following. 08**
- a) Explain Group by clause and Having clause with example.
  - b) Explain primary key and foreign key constraints with example.

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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2023  
Ethics and Cyber Law (19409404)**

Day & Date: Saturday, 16-12-2023  
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) In which year India's IT Act came into existence?
  - a) 2000
  - b) 2001
  - c) 2002
  - d) 2003
- 2) Which of the following term refers to a group of hackers who are both white and black hat?
  - a) Yellow Hat hackers
  - b) Grey Hat hackers
  - c) Red Hat Hackers
  - d) White-Black Hat Hackers
- 3) Release of Message Content and Traffic analysis are type of \_\_\_\_\_.
  - a) Both active and passive attacks
  - b) Neither active and passive attacks
  - c) Active attacks
  - d) Passive attacks
- 4) \_\_\_\_\_ is not a spot from where attackers seek information.
  - a) Domain name
  - b) IP address
  - c) System enumeration
  - d) Document files
- 5) Which one option is not a type of cybercrime?
  - a) Data theft
  - b) Forgery
  - c) Damage to data and systems
  - d) Installing antivirus for protection
- 6) After performing \_\_\_\_\_ the ethical hacker should never disclose client information to other parties.
  - a) Hacking
  - b) Cracking
  - c) Penetration testing
  - d) Exploiting
- 7) \_\_\_\_\_ is a component of the reconnaissance stage that is used to gather possible information for a target computer system or network.
  - a) Fingerprinting
  - b) 3D printing
  - c) Footprinting
  - d) Data printing
- 8) Cyber-crime can be categorized \_\_\_\_\_ types.
  - a) 4
  - b) 3
  - c) 2
  - d) 6

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

- a) Define security aspect.
- b) Define Botnets.
- c) What is password cracking?
- d) Define criminal aspect.
- e) What is Ethical Hacking?
- f) Define Cyberstalking.

- Q.3 Write short notes on any two of the following. 08**
- a) Explain weakness in Information Technology Act.
  - b) Explain Cyber offenses in detail.
  - c) Explain Network Security Challenges.
- Q.4 Answer any Two of the following. 08**
- a) Explain Essential Terminology (Threat, Vulnerability, Target of Evaluation, Attack, Exploit)
  - b) What is a keylogger? Explain types of keyloggers.
  - c) What is Foot Printing? Explain objectives of Foot Printing.
- Q.5 Answer any one of the following. 08**
- a) What is Ethical Hacking? Explain Scope & Limitations of Ethical Hacking?  
What are the skills required for Ethical Hacking.
  - b) Explain any Eight Classifications of Cybercrimes.

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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2023**  
**Angular JS (19409405)**

Day & Date: Sunday, 17-12-2023  
 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) AngularJs is \_\_\_\_\_ framework.
  - a) Javascript
  - b) Java
  - c) Html
  - d) None of the these
- 2) Angularjs is based on \_\_\_\_\_ pattern.
  - a) PVC
  - b) MVC
  - c) TVC
  - d) None of these
- 3) In Angularjs a \_\_\_\_\_ is the HTML which is responsible for displaying the data.
  - a) CSS
  - b) View
  - c) Table
  - d) None of these
- 4) A \_\_\_\_\_ is an object that represents the application model for an Angularjs application.
  - a) \$scope
  - b) data
  - c) view
  - d) None of these
- 5) Each AngularJS application can have only \_\_\_\_\_ root scope.
  - a) One
  - b) Two
  - c) Three
  - d) None of these
- 6) \_\_\_\_\_ is used to build Single Page Application.
  - a) Object
  - b) Routing
  - c) Both a and b
  - d) None of these
- 7) In Angularjs all directives start with \_\_\_\_\_ keyword.
  - a) ng
  - b) \$cng
  - c) sg
  - d) None of these
- 8) AngularJS expressions are placed inside \_\_\_\_\_.
  - a) <expression>
  - b) [expression]
  - c) {{expression}}
  - d) None of these

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

- a) Write any four features of AngularJS.
- b) What is MVC in Angularjs? Draw the diagram of Angularjs architecture.
- c) What is Directive in AngularJS? Give any four names of directives.
- d) What is ng-init directive in Angularjs?
- e) What is data binding in Angularjs?
- f) What is \$apply in Angularjs?

- Q.3 Write short note on any two of the following. 08**
- a) Write Short Notes on Numbers and String Expression in Angularjs with suitable example.
  - b) Write Short Notes on Module and How to create a Module in Angularjs.
  - c) Write short notes on \$rootScope and \$scope in Angularjs.
- Q.4 Answer any two of the following. 08**
- a) Explain two-way data binding in Angularjs with suitable example.
  - b) Write pros and cons of Single Page Application in Angularjs.
  - c) Explain ng-click event in Angularjs with suitable example.
- Q.5 Answer any one of the following. 08**
- a) Write a program in Angularjs to accept two numbers using ng-model and print addition, subtraction, multiplication and division of two numbers.
  - b) What is ngAnimate Module? Explain Directives supporting to animation in Angularjs.



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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2023  
Advance 4.0 d Computer Networks (19409406)**

Day & Date: Monday, 18-12-2023  
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) A collection of hyperlinked documents on the internet forms the \_\_\_\_\_.  
a) World Wide Web (WWW)                      b) E-mail system  
c) Mailing list                                        d) Hypertext markup language
- 2) \_\_\_\_\_ versions available of IP in computer network.  
a) 6 version    b) 4 version  
c) 2 version    d) 1 version
- 3) Why are parity bits used \_\_\_\_\_  
a) To encrypt data                                      b) To detect error  
c) To identify user                                      d) None of these
- 4) When the mail server sends mail to other mail servers it becomes \_\_\_\_\_.  
a) SMTP client    b) SMTP server  
c) Peer    d) Master
- 5) What does a set of rules define \_\_\_\_\_  
a) SMTP    b) FTP  
c) IMAP    d) Protocol
- 6) What does PoP stand for \_\_\_\_\_.  
a) Pre Office Protocol                                      b) Post Office Protocol  
c) Protocol of Post                                      d) None of these
- 7) Which of the following are transport layer protocols used in networking?  
a) TCP and FTP    b) UDP and HTTP  
c) TCP and UDP    d) HTTP and FTP
- 8) Which software prevents the external access to a system \_\_\_\_\_.  
a) Firewall    b) Gateway  
c) Router    d) Virus checker

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

**08**

- a) VPN
- b) Encryption & decryption
- c) Samba Server
- d) Data Compression
- e) Digital Signatures
- f) Optimality Principle

- Q.3 Write short notes on any two of the following. 08**
- a) Explain Congestion Control in Virtual-Circuit Subnets.
  - b) Difference between Transmission Control Protocol and User Datagram Protocol.
  - c) Explain Roles & responsibility of Network Administrator.
- Q.4 Answer any two of the following. 08**
- a) Explain Authentication Mechanisms in network security.
  - b) Explain SSL Encryption, TLS and SET.
  - c) Explain Elements of Transport Protocols.
- Q.5 Answer any one of the following. 08**
- a) Explain Shortest Path Routing algorithm with example.
  - b) Elaborate FTP, DNS, TelNet, SMTP, HTTP, WWW, SNMP, ARP.

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**B.C.A. (Semester - IV) (CBCS) Examination: Oct/Nov-2023**  
**Python Programming (19409407)**

Day & Date: Tuesday, 19-12-2023  
 Time: 12:00 PM To 03:00 PM

Max. Marks: 80

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

**Q.1 A) Choose correct alternative from the following. 10**

- 1) Which collection data type represents a group of elements arranged in the form of key-value pairs?
  - a) List
  - b) Set
  - c) Tuple
  - d) Dictionary
- 2) Which of the following functions is a built-in function in python?
  - a) type()
  - b) id()
  - c) len()
  - d) all of these
- 3) Multi lined comment can be given inside \_\_\_\_\_ quotes.
  - a) single
  - b) double
  - c) triple
  - d) all of these
- 4) Which prefix is used for Octal number system in python?
  - a) 0b
  - b) 0o
  - c) 0x
  - d) 0h
- 5) In python, List is mutable and tuples is immutable.
  - a) True
  - b) False
- 6) Which of these definitions correctly describes a module?
  - a) Denoted by triple quotes for providing the specification of certain program elements.
  - b) Design and implementation of specific functionality to be incorporated into a program.
  - c) Defines the specification of how it is to be used.
  - d) Any program that reuses code.
- 7) Which function is used to read single line from file?
  - a) Readline()
  - b) Readlines()
  - c) Readstatement()
  - d) Readfullline()
- 8) What is the output of the following statement?  
 print('abc'.islower())
  - a) True
  - b) false
  - c) None
  - d) Error
- 9) Which are geometry managers in Tkinter?
  - a) pack
  - b) grid
  - c) place
  - d) all of above
- 10) How many except statements can a try-except block have?
  - a) Zero
  - b) One
  - c) More than one
  - d) More than zero

- B) Fill in the blank.** **06**
- 1) \_\_\_\_\_ Function can be used to create a multidimensional array.
  - 2) To know the length of a string, we can use the \_\_\_\_\_ function.
  - 3) Python provides \_\_\_\_\_ method that returns the number of times a particular element is repeated in the list.
  - 4) A \_\_\_\_\_ is python sequence which stores a group of elements.
  - 5) Dictionary represents a group of elements arranged in the form of \_\_\_\_\_ pairs.
  - 6) Hiding unnecessary data and code from the user is called \_\_\_\_\_.

- Q.2 Solve any Eight of the following.** **16**
- a) What is class?
  - b) What is module?
  - c) What is interface?
  - d) What is File?
  - e) List out advantages of GUI.
  - f) What is operator?
  - g) What is a statement?
  - h) What is command line window?
  - i) What is constructor?
  - j) What is Thread in Python?

- Q.3 A) Attempt any Two of the following.** **10**
- 1) What is inheritance? Explain types of inheritance.
  - 2) Explain List and methods of List with example.
  - 3) Explain looping statement with example.
- B) Write a Short note on various keywords to handle exception.** **06**

- Q.4 A) Attempt any Two of the following.** **08**
- 1) Write a GUI program to check given number is even or odd. (use widgets)
  - 2) Explain file operations in details.
  - 3) Explain Time module in details.
- B) What is root window? Explain any five widgets with example.** **08**

- Q.5 Attempt any Two of the following.** **16**
- a) Write a program to count number of words, lines and characters which is stored into file.
  - b) What is Dictionary? Explain technique to create, update and delete dictionary items.
  - c) Explain User-defined Exception with example.



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

1) What is the importance of 21<sup>st</sup> Century skill?

**OR**

2) Explain the types of 21<sup>st</sup> Century skill.

**Q.4 Write down long answer of the following question 10**

What are the most important learning skills of 21<sup>st</sup> century?

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Set **P**

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

Day & Date: Sunday, 03-12-2023  
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 a method having same name as that of its class?
  - a) finalise
  - b) delete
  - c) class
  - d) constructor
- 2) All the variables of interface should be \_\_\_\_\_.
  - a) default and final
  - b) default & static
  - c) public, static & final
  - d) protect, static, final
- 3) JAR stands for \_\_\_\_\_.
  - a) Java Application File
  - b) Java ARchive
  - c) Both a) & b)
  - d) None of these
- 4) The default layout manager of a frame is \_\_\_\_\_.
  - a) FlowLayout
  - b) BorderLayout
  - c) GridLayout
  - d) BoxLayout
- 5) \_\_\_\_\_ statement is used to call the procedures & functions.
  - a) Simple
  - b) PreparedStatement
  - c) CallableStatement
  - d) All of these
- 6) JDBC stands for \_\_\_\_\_.
  - a) Java db Connectivity
  - b) Java data Connectivity
  - c) Java domain Core
  - d) None of these
- 7) Which of these access specifier can be used for an interface?
  - a) Private
  - b) Public
  - c) Protected
  - d) All
- 8) \_\_\_\_\_ is an abstract class for writing to character stream data.
  - a) FileWriter
  - b) BufferedWriter
  - c) Writer
  - d) None of these
- 9) \_\_\_\_\_ is the return type of a method that does not return any value.
  - a) int
  - b) float
  - c) void
  - d) double
- 10) Which package contains all event handling interface?
  - a) java.lang
  - b) java.awt
  - c) java.awt.event
  - d) java.event

- B) One Sentence Answer. 06**
- 1) Write any two use of 'super' keyword.
  - 2) What is Array?
  - 3) Give the list of JDBC drivers.
  - 4) What is API?
  - 5) Give the use of 'final' keyword.
  - 6) Write any two java operators.
- Q.2 Solve any Eight of the following. 16**
- a) Write any 2 JDBC drivers.
  - b) Definition of Constructor.
  - c) Define throws keyword.
  - d) List the methods of KeyListener.
  - e) Give the steps of Thread Life Cycle.
  - f) Definition of Polymorphism.
  - g) Define try exception.
  - h) Explain callable statement execute().
  - i) What is runtime exception?
  - j) Give the syntax of static method.
- Q.3 a) Attempt any Two of the following. 10**
- 1) Write a java program to give factorial of a number.
  - 2) Explain access specifiers in java.
  - 3) Give note on Method Overriding.
- b) Write a program to check whether number is prime or not. 06**
- Q.4 a) Attempt any Two of the following. 08**
- 1) Explain features of java.
  - 2) What is the use of Layout Manager? Explain Grid Layout with example.
  - 3) Write a note on JDK tools in java.
- b) Write a program to display given number in reverse order. (java program code) 08**
- Q.5 Attempt any Two of the following. 16**
- a) What is Exception? Explain types of it.
  - b) What is JDBC? Explain JDBC architecture.
  - c) What is Listener? Explain types of Listener.



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**B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2023**  
**Visual Programming (19409503)**

Day & Date: Monday, 04-12-2023  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

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

- 1) \_\_\_\_\_ is the necessary condition for implementing delegates.
  - a) Class declaration
  - b) Inheritance
  - c) Run-time Polymorphis
  - d) Exceptions
- 2) The capability of an object in Csharp to take number of different forms and hence display behaviour as according is known as \_\_\_\_\_.
  - a) Encapsulation
  - b) Polymorphism
  - c) Abstraction
  - d) None of the mentioned
- 3) \_\_\_\_\_ classes provide the operation of reading from and writing to the console in C#.NET.
  - a) System.Array
  - b) System.Output
  - c) System.ReadLine
  - d) System.Console
- 4) Correct statement about constructor overloading in C# is?
  - a) Overloaded constructors have the same name as the class
  - b) Overloaded constructors cannot use optional arguments
  - c) Overloaded constructors can have different type of number of arguments as well as differ in number of arguments
  - d) All of the mentioned
- 5) \_\_\_\_\_ options is not a Bitwise Operator in C#?
  - a) &, |
  - b) ^, ~
  - c) <<, >>
  - d) +=, -=
- 6) Choose the class on which all stream classes are defined?
  - a) System.Input.stream
  - b) System.IO.stream
  - c) System.Output.stream
  - d) All of the mentioned
- 7) \_\_\_\_\_ the keyword which declares the indexer.
  - a) base
  - b) this
  - c) super
  - d) extract
- 8) When is no exception thrown at runtime then \_\_\_\_\_ will catch it.
  - a) Loader
  - b) Operating System
  - c) CLR
  - d) Compiler
- 9) Syntax for declaration and initialization of data variable is \_\_\_\_\_.
  - a) <var\_name> = <value>;
  - b) <data type><var\_name>;
  - c) <var\_name><data type>;
  - d) <data type><var\_name> = <Value>;

**10) What Is CTS?**

- a) Common type system
- b) Common type-safe
- c) Compiler type structure
- d) Common type specification

**B) True or false.**

**06**

- 1) Classes are reference types and structs are value types.
- 2) Delegates are object oriented.
- 3) An identifier can contain spaces.
- 4) Graphical User Interface applications can't be developed using Visual Basic tool.
- 5) The value of a constant can be assigned only in the declaration.
- 6) An object cannot be assigned to an enum variable.

**Q.2 Solve any eight questions of the following.**

**16**

- a) Text Stream
- b) Common Language Integration
- c) Constant
- d) Boxing and unboxing
- e) MDI Applications
- f) Anonymous Methods
- g) Reference Type
- h) Stored Procedures
- i) Finally block
- j) Virtual Methods

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

**10**

- 1) Define Menu and explain Context Menus in detail.
- 2) What is Stream? Explain System.IO and Base classes of Stream.
- 3) Explain Data set and its Advantages.

**b) Explain Array List, Hash table, stack and queue.**

**06**

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

**08**

- 1) Explain Rules for Handling Exception.
- 2) Explain Common Language Runtime in detail.
- 3) Explain Parameter passing techniques.

**b) Define delegate. Explain Types of delegate in detail.**

**08**

**Q.5 Attempt any two of the following.**

**16**

- a) Define Inheritance & Polymorphism. Explain Operator and method Overloading and overriding.
- b) Explain DOT Parameter passing techniques.
- c) How to Establish Connection with Database? Write a program of Executing simple Insert, Update and Delete commands.

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**B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2023**  
**Computer Graphics (19409504)**

Day & Date: Tuesday, 05-12-2023  
 Time: 03:00 PM To 06:00 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) The transformation in which an object can be shifted to any coordinate position are called \_\_\_\_\_.
 

a) Translation	b) Scaling
c) Rotation	d) Shearing
- 2) If polygon has total 'n' points then first argument in drawpoly( ) function is \_\_\_\_\_.
 

a) n	b) n - 1
c) n*2	d) n + 1
- 3) By applying \_\_\_\_\_ type of transformation, we will get the mirror image of graphics object.
 

a) Translation	b) Scaling
c) Rotation	d) Reflection
- 4) A translation is applied to an object by \_\_\_\_\_.
 

a) Repositioning it along with straight line path
b) Repositioning it along with circular path
c) Both a and b
d) None of the above
- 5) The matrix representation for translation in homogeneous coordinate's is given by eq. \_\_\_\_\_.
 

a) $P' = T + P$	b) $P' = S * P$
c) $P' = R * P$	d) $P' = T * P$
- 6) In CRT, the electron intensity is adjusted using \_\_\_\_\_.
 

a) Accelerating anode	b) Control grid
c) Electron gun	d) Focusing anode
- 7) The quality of an image depend on \_\_\_\_\_.
 

a) No. of end points used by image
b) No. of line used by image
c) No. of resolution used by image
d) None of these
- 8) \_\_\_\_\_ is responsible for accessing the frame buffer to refresh the screen.
 

a) Graphics package	b) Video controller
c) CPU	d) Monitor
- 9) For scaling parameters, If  $S_x = S_y$  then \_\_\_\_\_?
 

a) Size of image decreases	b) Size of image increases
c) Uniform scaling is done	d) None of these

- 10) \_\_\_\_\_ computer graphics is also called as ‘Passive computer graphics’.
- a) Interactive
  - b) Non-Interactive
  - c) Both a & b
  - d) None of these

**B) Fill in the blank/ Definition/One sentence answer/One word answer/Give the name/Predict the product etc. 06**

- 1) Video graphics array standard is \_\_\_\_\_.
- 2) \_\_\_\_\_ is equivalent graphics function to clrscr( ) in textual mode.
- 3) \_\_\_\_\_ is Cartesian co-ordinate point is equivalent to homogeneous co-ordinate point (78, 12, 3).
- 4) A line graphics object requires \_\_\_\_\_ number of end points for construction.
- 5) To change the position of circle or ellipse, we translate \_\_\_\_\_.
- 6) Types of computer graphics are \_\_\_\_\_.

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

- a) What do you mean by computer graphics?
- b) Write merits and demerits of DDA line drawing algorithm.
- c) List out graphical input devices.
- d) What is clipping?
- e) What is vector graphics?
- f) List out application areas of computer graphics.
- g) What is vanishing point?
- h) What is pixel phasing?
- i) Differentiate between line printer and dot matrix printer.
- j) List out various operations performed by Display controller.

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

- 1) What are the applications of computer graphics?
- 2) Write a short note on any one graphics output device.
- 3) Write the difference between ‘Raster Scan display’ and ‘Random Scan Display’.

**b) Short note solve 06**  
Digitize the line segment having starting point (5,7) & end point (11,15) using Bresenham’s line drawing algorithm.

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

- 1) What is viewing transformation?
- 2) Rotate a triangle defined by A(0,0),B(6,0),C(3,3) by 90° about origin in anticlockwise direction.
- 3) What is Plotter? Explain Pen plotter in details.

**b) Describe /explain /solve 08**  
Translate the square ABCD whose co-ordinates are A(0,0),B(3,0),C(3,3) and D(0,3) by 2- units in both directions and then scale it by 1.5 units in x-direction and 0.5 units in y-direction.

**Q.5 Attempt any Two of the following. 16**

- a) Explain CRT monitor in detail.
- b) What is transformation? Explain its types in detail.
- c) Explain DDA line drawing Algorithm. Also write Advantage & Disadvantages.

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**B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2023  
Recent Trends in IT (19409505)**

Day & Date: Wednesday, 06-12-2023  
Time: 03:00 PM To 06:00 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) Applications and services that run on a distributed network using virtualized resource is Known as \_\_\_\_\_.  
a) Parallel computing                      b) Soft computing  
c) Distributed computing                  d) Cloud computing
- 2) \_\_\_\_\_ has the world's largest Hadoop cluster.  
a) Apple    b) Datamatics  
c) Facebook                                      d) None of the mentioned
- 3) Data science is the process of diverse set of data through?  
a) Organizing data                              b) Processing data  
c) Analysing data                                d) All of the above
- 4) Who is the father of data science?  
a) Rasmus Lerdorf                                b) James Gosling  
c) Guido van Rossum                            d) William S. Cleveland
- 5) Which of the following is the most important language for Data Science?  
a) Ruby    b) R  
c) Java    d) None of these
- 6) Type of matrix decomposition model is \_\_\_\_\_.  
a) Predictive model                              b) descriptive model  
c) logical model                                  d) None of these
- 7) Which of the following is performed by Data Scientist?  
a) Create reproducible code  
b) Challenge results  
c) Define the question  
d) All of the above

- 8) Which architectural layer is used as a backend in cloud computing?
  - a) cloud
  - b) soft
  - c) client
  - d) all of the mentioned
- 9) Which of the following is the application of cloud computing?
  - a) Adobe
  - b) Paypal
  - c) Google G Suite
  - d) All of the above
- 10) In simple term, machine learning is \_\_\_\_\_.
  - a) Prediction to answer a query
  - b) training based on historical data
  - c) Both a) and b)
  - d) None of above

**B) Fill in the blank**

**06**

- 1) Who is the father of cloud computing?
- 2) \_\_\_\_\_ Can best be described as a programming model used to develop Hadoop - based applications that can process massive amounts of data.
- 3) Graphical representation of a data set is called \_\_\_\_\_.
- 4) A relationship between two or more variables is referred to as a \_\_\_\_\_.
- 5) Data with a large size is called as \_\_\_\_\_.
- 6) The process of evaluating data through analytical and statistical tools are called as \_\_\_\_\_.

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

**16**

- a) What is Green IT?
- b) What is Opportunity in Green IT?
- c) What is Hadoop?
- d) What is training phase in Machine Learning?
- e) What is Distributed Processing System?
- f) Define Public Clouds.
- g) What is Testing phase in Machine Learning?
- h) Define the term Multitenancy?
- i) What is the Internet of Things?
- j) What is virtual machine?

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

**10**

- 1) Explain characteristics of Big data?
- 2) Explain in details the role of a Data Scientist.
- 3) Explain Hadoop Architecture.

- B) Short note on** **06**
- 1) Cloud service models
  - 2) Big Data
- Q.4 A) Attempt any Two of the following.** **08**
- 1) What are the Core Components of Hadoop?
  - 2) Explain IoT Architecture.
  - 3) Explain applications of Machine Learning Algorithms
- B) Describe/Explain/Solve** **08**
- Explain in details the architecture of IOT and applications of IOT.
- Q.5 Attempt any Two of the following.** **16**
- a) What are Virtual Machines? Explain Architecture of Virtual Machines in detail.
  - b) What do you mean by virtualization? Explain in details about Virtualization technologies and Architectures.
  - c) What are the Environmental impacts of IT and explain the Holistic Approach to Greening IT.

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**B.C.A. (Semester - V) (New) (CBCS) Examination: Oct/Nov-2023  
Linux and Shell Programming (19409506)**

Day & Date: Thursday, 07-12-2023  
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 the right indicate full marks.

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

- 1) \_\_\_\_\_ command is used to rename Directory.  
a) \$remove                                      b) \$rmdir  
c) \$mv    d) \$rm
- 2) To get list of currently running processes, \_\_\_\_\_ command is used.  
a) \$ps    b) \$ls  
c) \$who    d) \$tty
- 3) \_\_\_\_\_ command is used to remove FILES.  
a) \$remove                                      b) \$mv  
c) \$cp    d) \$rm
- 4) \_\_\_\_\_ command used to paste copied lines of the file in Vi-Editor.  
a) yc    b) P  
c) yy    d) pp
- 5) \_\_\_\_\_ used to Stop/suspend currently running process.  
a) CTRL + Z                                      b) CTRL + D  
c) ALT + Z                                      d) ALT + D
- 6) \_\_\_\_\_ command used to search pattern in a file.  
a) sort    b) search  
c) grep    d) find
- 7) \_\_\_\_\_ used to hide special meaning of metacharacter.  
a) \*    b) ?  
c) \    d) :
- 8) \_\_\_\_\_ is a developer of LINUX O.S.  
a) Linus Torvalds                                      b) Ken Thompson  
c) Denis Ritchie                                      d) Both b & c
- 9) \$rmdir command can have multiple arguments.  
a) True    b) False
- 10) \$head command can be used to display last lines from file.  
a) True    b) False

**B) Define the following terms. 06**

- 1) Shell
- 2) Mount point
- 3) Shell Script
- 4) usage of \$pwd command
- 5) usage of \$who command
- 6) FTP stands for \_\_\_\_\_.



- Q.2 Solve the following (Any Eight) 16**
- a) Define Boot Loader.
  - b) List TWO differences between GRUB and LILO.
  - c) \$find command
  - d) List out any 4 Linux Distributions.
  - e) Define metacharacter.
  - f) What is shell Process?
  - g) State usage of \$mkdir command.
  - h) State the purpose of \$paste command.
  - i) State usage of traceroute command
  - j) What is boot block?
- Q.3 a) Attempt the following (Any Two) 10**
- 1) Explain LINUX Architecture with Diagram.
  - 2) Write Note, on \$uniq command.
  - 3) Write a Shell Script to check entered number is EVEN or ODD.
- b) List Out differences between LINUX & WINDOWS OS. 06**
- Q.4 a) Attempt the following (Any Two) 08**
- 1) Write a note on Super Block.
  - 2) State any FOUR Shell types.
  - 3) Explain Piping with Example.
- b) Explain Hierarchy of file system with diagram. 08**
- Q.5 Attempt the following (Any Two) 16**
- a) Define System Administrator and state different roles of system administrator.
  - b) Explain File and directory permission commands.
  - c) Explain case..esac statement with shell script example.

<b>Seat No.</b>	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2023**  
**ENGLISH**

**Literary Mindscapes - I (19409601)**

Day & Date: Monday, 20-11-2023  
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

**Q.1 Choose the correct alternative.**

**08**

- 1) \_\_\_\_\_ are the names of the children in the story 'Growing up'.  

a) Joss and Kady	b) Jane and Karli
c) Jade and Katie	d) Jenny and Kate
- 2) What was Aksionov fond of when he was younger?  

a) dancing	b) sleeping
c) singing	d) reading
- 3) \_\_\_\_\_ children are listening to the story in the poem 'Sita'.  

a) One	b) Two
c) Three	d) Four
- 4) What was the cause of the death of the duchess?  

a) illness	b) accident
c) drowning	d) the duke
- 5) Complete the following line.  
'A thing of beauty is a \_\_\_\_\_ forever'.  

a) cheerful	b) pleasant
c) joy	d) truth
- 6) Charlotte Bronte says that \_\_\_\_\_ possess the golden wings.  

a) Morning dew	b) Hope
c) Butterflies	d) None of the above
- 7) Choose the correct adverb to fill in the bank  
I am \_\_\_\_\_ tired. I want to sleep for a couple of hours.  

a) extremely	b) extreme
c) insufficiently	d) sufficient
- 8) My teacher often says to me "If you do not work hard, you will fail"  
The correct indirect speech of the above sentence is \_\_\_\_\_.  

a) My teacher often says to me that if I do not work hard, I will fail.
b) My teacher told to me that if I do not work hard, I will fail
c) My teacher said that if I does not work hard, I would fail.
d) My teacher ordered that if I am not working hard, I would fail.

- Q.2 Write short answers of the following questions. (Any Four) 12**
- 1) What do you know about Robert Quick's wife?
  - 2) Why did Aksionov leave the inn early?
  - 3) What is the tragic story told by the narrator in the poem 'Sita'?
  - 4) Describe the personality of the duchess.
  - 5) What objects of nature does John Keats mention as a source of joy?
  - 6) What is the theme of the poem "Life"?
- Q.3 Answer any one of the following. 10**
- a) Explain the three most important literacy skills (IMT).
- OR**
- b) Discuss in detail the life skills, known as (FLIPS).
- Q.4 There is a spate of motor cycle robberies in your city. Give three steps that you would take as a civically literate person and as a leader. 10**

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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2023  
Advanced Java (19409602)**

Day & Date: Tuesday, 21-11-2023  
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) In Session tracking which method is used in a bit of information that is sent by a web server to a browser and which can later be read back from that browser?
  - a) HttpSession
  - b) URL rewriting
  - c) Cookies
  - d) Hidden form fields
- 2) \_\_\_\_\_ Method Returns the parameter value for the specified parameter name in web.xml.
  - a) getInitParameter(String name)
  - b) getParameter(String name)
  - c) setInitParameter(String name)
  - d) setParameter(String name)
- 3) Which are the session tracking techniques?
  - a) URL rewriting
  - b) Using session object
  - c) Using hidden fields
  - d) All of these
- 4) A JSP is transformed into \_\_\_\_\_.
  - a) Java applet
  - b) Java servlet
  - c) Both a) and b)
  - d) None of these
- 5) In Hibernate inheritance mapping which is used when tables are created as per class but related by foreign key, so there are no duplicate columns?
  - a) Table per Hierarchy
  - b) Table Per Concrete Class
  - c) Table Per Subclass
  - d) None of these
- 6) In Spring JDBCTemplate which interface can be used to fetch records from the database?
  - a) PreparedStatement
  - b) RowMapper
  - c) ResultSetExtractor
  - d) JDBCData
- 7) If you don't use @Table annotation, hibernate will use the \_\_\_\_\_ as the table name by default.
  - a) class name
  - b) HibernateTable
  - c) Object Name
  - d) annotationTable

- 8) Spring is developed by \_\_\_\_\_.
  - a) Rod Johnson
  - b) Gavin King
  - c) James Gosling
  - d) Guido van Rossum
- 9) Which is mandatory in <jsp:useBean> tag?
  - a) id, class
  - b) id, type
  - c) type, property
  - d) type, id
- 10) In JSP Action tags which tags are used for bean development?
  - a) jsp:useBean
  - b) jsp:setPoperty
  - c) jsp:getPoperty
  - d) All of these

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

- 1) The life cycle of a servlet is managed by \_\_\_\_\_.
- 2) The \_\_\_\_\_ interface provides the facility of dispatching the request to another resource it may be html,servlet,jsp.
- 3) \_\_\_\_\_ - JSTL tag is used for assigning a value to an object or variable within a specified scope.
- 4) CGI Stands for \_\_\_\_\_.
- 5) Generic-Servlet is a protocol \_\_\_\_\_.
- 6) In JSP \_\_\_\_\_ tag is written to the output stream of the response.

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

- a) What is Servlet?
- b) What is JSTL?
- c) Define JSP life cycle?
- d) What is ORM?
- e) What is Framework?
- f) What is CGI?
- g) Coupling in spring.
- h) Advantages of JSP over Servlet.
- i) List out use of Servlet Container.
- j) List out use of Hibernate.

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

- 1) Explain JSP implicit Object with example.
- 2) Explain Hibernate Architecture.
- 3) Write a program to store book information such as book\_id, book\_name, author, publisher, price, etc into Book\_info table using Hibernate annotation.

**b) Short note on Spring model. 06**

- Q.4 a) Attempt any two of the following. 08**
- 1) What is Inheritance mapping in Hibernate? Explain TPS inheritance mapping with example.
  - 2) Difference between GenericServlet and HttpServlet.
  - 3) Write a servlet to take name as request parameter from the user and display Welcome Page to the user with his name (use HTTP post method).
- b) What is Session? Explain all session tracking mechanism with example. 08**
- Q.5 Attempt any two of the following. 16**
- a) Explain Spring JDBC template with suitable example.
  - b) Explain JSTL SQL tags with Example.
  - c) What is Dependency Injection? Explain Constructor Injection (CI) with collection and Map.

Seat No.	
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2023**  
**Dot Net Technology (19409603)**

Day & Date: Wednesday, 22-11-2023  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

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

- 1) \_\_\_\_\_ control must be used with AJAX Extensions controls.
  - a) Timer
  - b) ScriptManager
  - c) ScriptControl
  - d) ScriptAjax
- 2) \_\_\_\_\_ event in calendar control visits each and every day in the calendar.
  - a) EachDay
  - b) DayRender
  - c) SelectDate
  - d) EachDate
- 3) \_\_\_\_\_ validation control is used to check whether entered data value is even numbers.
  - a) RegularExpression
  - b) RequireField
  - c) Custom
  - d) Compare
- 4) Default value for ShowCheckBoxes property of TreeView control is \_\_\_\_\_.
  - a) Root
  - b) Leaf
  - c) All
  - d) None
- 5) Every master page must contain at least one <asp:ContentPlaceholder>tag.
  - a) True
  - b) False
- 6) \_\_\_\_\_ element of Advertisement file specify category of advertisements.
  - a) Impression
  - b) Alternatetext
  - c) Filter
  - d) Keyword
- 7) \_\_\_\_\_ method of FileUpload control is used to upload file at server location.
  - a) Upload()
  - b) Save()
  - c) SaveAs()
  - d) Store()
- 8) In ASP.NET application DLL files are stored in which folder?
  - a) App\_Code
  - b) App\_Data
  - c) Bin
  - d) App\_LocalResources
- 9) \_\_\_\_\_ property of BulletedList control is used to display item in the form of HyperLink.
  - a) SelectionMode
  - b) DisplayMode
  - c) HyperlinkMode
  - d) BulletStyle

- 10) AJAX is nothing but \_\_\_\_\_.  
 a) Advance Javascript and Xml  
 b) Auto Javascript and Xml  
 c) Asynchronous JSP and Xml  
 d) Asynchronous Javascript and Xml

**B) One sentence answer. 06**

- 1) Which protocol is used to call a Web service?
- 2) In which event are the controls fully loaded?
- 3) How we can force all the validation controls to run?
- 4) What is the file extension of web service?
- 5) What are the components of ADO.NET?
- 6) How long the items in ViewState exists?

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

- 1) What's the use of Response.Output.Write()?
- 2) What are the different validators in ASP.NET?
- 3) List the events in page life cycle.
- 4) What are the different types of caching?
- 5) What are the different types of cookies in ASP.NET?
- 6) Define the types of configuration files.
- 7) Which compiler is used in ASP.NET?
- 8) How many types of Server controls are supported by ASP.NET?
- 9) What is IIS?
- 10) What is the used of "isPostBack" property?

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

- 1) Explain ASP.Net page life cycle.
- 2) What is Proxy in web services? How to create it explain.
- 3) Explain DropDownList control with example.

**B) What is theme? How to create theme and skin explain 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 Custom Validator Control in detail with example.

**B) What is a Dataset? Explain with example. 08**

**Q.5 Attempt any Two of the following. 16**

- a) Why Master page required? Explain nested master pages with example.
- 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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Set **P**

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

Day & Date: Thursday, 23-11-2023  
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) The mapping or classification of a class with some predefined group or class is known as?
  - a) Data Characterization
  - b) Data Discrimination
  - c) Data Set
  - d) Data Sub Structure
- 2) \_\_\_\_\_ may be defined as the data objects that do not comply with the general behavior or model of the data available.
  - a) Outlier Analysis
  - b) Evolution Analysis
  - c) Prediction
  - d) Classification
- 3) Which of the following is a good alternative to the star schema?
  - a) snow flake schema
  - b) star schema
  - c) star snow flake schema
  - d) fact constellation
- 4) Which of the following forms of data mining assigns records to one of a predefined set of classes?
  - a) Classification
  - b) Clustering
  - c) Both A and B
  - d) None
- 5) Which of the following is not a data pre-processing methods?
  - a) Data Visualization
  - b) Data Discretization
  - c) Data Cleaning
  - d) Data Reduction
- 6) \_\_\_\_\_ normalization is not very well efficient in handling the outliers.
  - a) Min max
  - b) Z Score
  - c) Decimal Scaling
  - d) None of the above
- 7) The terms equality and roll up are associated with \_\_\_\_\_.
  - a) OLTP
  - b) Visualization
  - c) Data mart
  - d) Decision Tree

- 8) Data warehouse is which of the following?
  - a) Can be updated by end users
  - b) Contains numerous naming conventions and formats
  - c) Organized around important subject areas
  - d) Contains only current data
- 9) An outlier is a \_\_\_\_\_.
  - a) Description of records in the data
  - b) Data point which is considered different from other data points
  - c) Record with missing attributes
  - d) Duplicate record
- 10) In a snowflake schema which of the following types of tables is considered?
  - a) Fact
  - b) Dimension
  - c) Both (a) and (b)
  - d) None of the above

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

- 1) When you \_\_\_\_\_ the data, you are aggregating the data to a higher level.
- 2) A data cube consist of \_\_\_\_\_.
- 3) \_\_\_\_\_ clustering should be primarily used for exploration.
- 4) In \_\_\_\_\_ we can find the data object which does not comply with the general behavior.
- 5) For clustering we do not require \_\_\_\_\_.
- 6) \_\_\_\_\_ table contain multidimensional data in data warehouse.

**Q.2 Answer the following (Any Eight): 16**

- a) What is data mining?
- b) What is ROLAP?
- c) Define Classification.
- d) Define Dimension table.
- e) Define data cleaning.
- f) Define association rule mining.
- g) Define frequent item set.
- h) Define nominal, ordinal and ratio scaled variables.
- i) Define Text mining.
- j) Define multimedia data mining.

**Q.3 A) Attempt the following. (Any Two) 10**

- 1) List out the difference between OLTP and OLAP.
- 2) Explain the steps involved in data preprocessing.
- 3) Explain the architecture of data mining systems in detail.

**B) Apply all binning methods for the following sorted data with 3 bins: 06**  
3,7,8,13,22,22,24,26,28,28,30,37

- Q.4 A) Attempt the following. (Any Two) 08**
- 1) Explain Bayesian classification.
  - 2) Explain Text Database mining.
  - 3) Distinguish between classification and clustering.
- B) Explain the applications of data mining. 08**
- Q.5 Attempt the following. (Any Two) 16**
- a) Explain the classification of data mining systems.
  - b) Explain the uses and steps involved in Apriori algorithm. Discuss it with suitable example.
  - c) With a suitable example, explain K-Means Clustering algorithm.

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

Day & Date: Friday, 24-11-2023  
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) ECB and CBC are \_\_\_\_\_.
  - a) Block
  - b) Stream
  - c) Field
  - d) None of the above
- 2) A session symmetric key between two parties is used \_\_\_\_\_.
  - a) Only once
  - b) Twice
  - c) Multiple times
  - d) Conditions dependent
- 3) One way to preserve integrity of a document is through use of a \_\_\_\_\_.
  - a) Eye-Rays
  - b) Finger Print
  - c) Biometric
  - d) X-Rays
- 4) Encryption and decryption provide secrecy, or confidentiality, but not \_\_\_\_\_.
  - a) Authentication
  - b) Integrity
  - c) Privacy
  - d) All of the above
- 5) MAC stands for \_\_\_\_\_.
  - a) Message authentication code
  - b) Message arbitrary connection
  - c) Message authentication control
  - d) Message authentication cipher
- 6) In terms of Web Security Threats, "Impersonation of another user" is a Passive Attack.
  - a) True
  - b) False
- 7) The sub key length at each round of DES is \_\_\_\_\_.
  - a) 32
  - b) 56
  - c) 48
  - d) 64
- 8) Network Security provides authentication and access control for resources.
  - a) True
  - b) False
- 9) What is the size of the RSA signature hash after the MD5 and SHA-1 processing?
  - a) 42 bytes
  - b) 32 bytes
  - c) 36 bytes
  - d) 48 bytes
- 10) In \_\_\_\_\_ cipher, a pair of keys is used.
  - a) symmetric-key
  - b) asymmetric-key
  - c) either (a) or (b)
  - d) neither (a) nor (b)

**B) Give the answer of below questions. 06**

- 1) The full form of PGP is \_\_\_\_\_.
- 2) Which layer filters the proxy firewall?
- 3) Transmission mechanisms can be subject to spoofing & attacks based on skilled modified packets.
  - a) True
  - b) False
- 4) The full form of SSL is \_\_\_\_\_.
- 5) Network Security provides authentication and access control for resources.
  - a) True
  - b) False
- 6) The full form of IDEA is \_\_\_\_\_.

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

- a) What are the services provided by PGP services?
- b) Define S/MIME?
- c) What are roles of public and private key?
- d) Define Kerberos.
- e) Specify the components of encryption algorithm.
- f) What is the use of smart cards?
- g) What are the design parameters of Feistel cipher network?
- h) What is the Difference between symmetric and asymmetric encryption?
- i) What is message authentication?
- j) Define steganography.

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

- 1) Explain ELGamal Algorithm.
- 2) What is mean by SET? What are the features of SET?
- 3) Explain the architecture of IP Security

**b) Explain different types of Firewall. 06****Q.4 a) Attempt any Two of the following. 08**

- 1) Explain Types of Security attacks.
- 2) Explain S/MIME.
- 3) Explain Security services.

**b) Explain AES in details. 08****Q.5 Attempt any Two of the following. 16**

- a) Explain DES in detail.
- b) Explain SHA-512.
- c) Explain Playfair cipher & Vernam cipher in detail.

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<b>Set P</b>
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**B.C.A. (Semester - VI) (New) (CBCS) Examination: Oct/Nov-2023  
Advanced Python (19409606)**

Day & Date: Saturday, 25-11-2023  
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) fg in tkinter widget is stands for?
  - a) foreground
  - b) background
  - c) forgap
  - d) None of these
- 2) One of the following applications of the Client and Server Model?
  - a) Email
  - b) Network Printing
  - c) World Wide Web
  - d) All of these
- 3) Which architectural pattern does django follow?
  - a) php
  - b) MVT
  - c) HTML
  - d) None of these
- 4) Which widget are used to get the data from the user?
  - a) Button
  - b) Label
  - c) Entry
  - d) None of the mentioned
- 5) What are the features available in Django web framework?
  - a) Admin Interface (CRUD)
  - b) Templating
  - c) Form handling
  - d) All of these
- 6) XML Is Designed To Store Data And \_\_\_\_\_.
  - a) Design
  - b) Verify
  - c) Both A & B
  - d) Transport
- 7) Tkinter tool in python provide the \_\_\_\_\_.
  - a) database
  - b) OS commands
  - c) GUI
  - d) All of mentioned
- 8) What is the purpose of settings.py?
  - a) To configure settings for the Django project
  - b) To configure settings for an app
  - c) To set the date and time on the server
  - d) To sync the database schema
- 9) One of the following classes are used for connection-less socket programming?
  - a) Datagram Socket
  - b) Datagram Packet
  - c) Both Datagram Socket
  - d) None of the above
- 10) The XML DOM object is \_\_\_\_\_.
  - a) Entity
  - b) Comment Data
  - c) Entity Reference
  - d) Comment Reference

- B) Fill in the blanks.** **06**
- 1) \_\_\_\_\_ is used to display the static text and titles.
  - 2) An XML document can be depicted using \_\_\_\_\_ kind of structure.
  - 3) Django is a web development \_\_\_\_\_.
  - 4) \_\_\_\_\_ is used to accept the connection from the client.
  - 5) GUI stands for Graphical \_\_\_\_\_ Interface.
  - 6) Django supports the \_\_\_\_\_ pattern.
- Q.2 Solve any Eight of the following.** **16**
- a) What is python tkinter?
  - b) What is Geometry Management?
  - c) What is Framework?
  - d) What is XML DOM?
  - e) What is Network?
  - f) What are 'views'?
  - g) What is XML Parser?
  - h) How to do you create a Django project?
  - i) What is TCP?
  - j) What are widgets?
- Q.3 a) Attempt any Two of the following.** **10**
- 1) What is GUI? Explain it's advantages.
  - 2) Difference between app and project.
  - 3) Write a program for sending email application.
- b) Explain pack() Layout Managers. **06**
- Q.4 a) Attempt any Two of the following.** **08**
- 1) Explain parsing XML with SAX API's.
  - 2) Write a program for URL in network Programming.
  - 3) Explain features of Django.
- b) What is IP address? Write a program for IP address. **08**
- Q.5 Attempt any two of the following.** **16**
- a) What is XML? Explain Architecture of XML?
  - b) Explain Button & Spinbox widgets.
  - c) What is Django? Explain the various files that are created when you create a Django Project?