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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019**  
**English (Compulsory)**  
**GOLDEN PETAL**

Day & Date: Thursday, 07-11-2019  
 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 Fill in the blanks by choosing the correct alternatives.**

**08**

- 1) She liked \_\_\_\_\_ books you gave her.
 

a) A	b) An
c) The	d) no article
- 2) Charlie Chaplin's first film was titled as \_\_\_\_\_.
 

a) The Little Tramp	b) Making a Living
c) The Kid Auto Races	d) The Tramp
- 3) Nachiketa's father chose only the \_\_\_\_\_ cows to give away.
 

a) Young	b) Old
c) Expensive	d) Beautiful
- 4) As a matter of compensation \_\_\_\_\_ of Shanti Tigga was offered job with the police.
 

a) Son	b) Daughter
c) Broker	d) Sister
- 5) How are the 'Strains of triumph' described?
 

a) Distant	b) Near
c) Loud	d) Soft
- 6) This is the pilot who saved Japan in the II world war. The underlined word is \_\_\_\_\_ pronoun.
 

a) Distributive	b) Reflexive
c) Relative	d) Demonstrative
- 7) Sir Thomas Wyatt was born in \_\_\_\_\_.
 

a) 1501	b) 1502
c) 1503	d) 1504
- 8) Not one of all the \_\_\_\_\_ Host.
 

a) Red	b) Yellow
c) Purple	d) Blue

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

**12**

- 1) How did the New York writer describe Charlie in his review after release of the first film?
- 2) Which wing of army did Shanti Tigga join? At what age?
- 3) What is the structure of the poem 'I Find No Peace'?
- 4) What made Nachiketa feel troubled?
- 5) What was the reaction of adivasi groups on Shanti Tigga's death?
- 6) What was Nachiketa's third boon? What was the reaction of Yama to Nachiketa's request?

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

1) What are the points that you need to keep in mind when you are encoding a message?

**OR**

2) Write a message to the principal of your college, explaining to him why you are unable to pay all the fee in one installment. Use proper vocabulary, language and specify the medium.

**Q.4 'Discuss the three 'M' approaches to make effective communication.**

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Set **P**

**B.Sc. (E.C.S.) (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019**  
**English (Compulsory)**  
**GOLDEN PETAL**

Day & Date: Thursday, 07-11-2019  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternative given below. 14**

- 1) Charlie Chaplin was of \_\_\_\_\_ years old, when he entered in the film industry.
 

a) 31	b) 29
c) 35	d) 25
- 2) Charlie Chaplin was signed with \_\_\_\_\_ dollars a week by the keystone production company.
 

a) 160	b) 150
c) 170	d) 151
- 3) Charlie Chaplin was born in \_\_\_\_\_.
 

a) 1924	b) 1915
c) 1914	d) 1920
- 4) Shanti Tigga joined the Territorial Army at the age of \_\_\_\_\_.
 

a) 27	b) 35
c) 28	d) 31
- 5) Shanti Tigga was awarded by \_\_\_\_\_ for her extra ordinary achievements.
 

a) Smt. Indira Gandhi	b) Smt. Pratibha Patil
c) Smt. Sushama Swaraj	d) Smt. Sonia Gandhi
- 6) Shanti Tigga was kidnapped on May 29 \_\_\_\_\_.
 

a) 2011	b) 2010
c) 2012	d) 2013
- 7) When the \_\_\_\_\_ dies our soul continues to exists.
 

a) heart	b) body
c) mind	d) voice
- 8) Nachiketa waited at the gates of Yama for \_\_\_\_\_ days without food or water.
 

a) 4	b) 2
c) 5	d) 3
- 9) Vajasrawas told Nachiketa to go to Yama out of \_\_\_\_\_.
 

a) anger and annoyance	b) sadness and melancholy
c) love and affection	d) strength and admiration
- 10) The poem I Find No Peace is written by \_\_\_\_\_.
 

a) Sir Charles	b) Sir Thomas Wyatt
c) Sir Alfred Wyatt	d) Sir Thomas Kyd
- 11) Emily Dickinson is from \_\_\_\_\_.
 

a) Africa	b) America
c) England	d) Ireland











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**B.Sc. (E.C.S.) (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019  
LINEAR ELECTRONICS – I**

Day & Date: Monday, 11-11-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

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

**14**

- 1) In Bridge rectifier \_\_\_\_\_ diodes are used.
  - a) 2
  - b) 4
  - c) 1
  - d) 3
- 2) The electrolyte capacitor uses \_\_\_\_\_ for plate.
  - a) ceramic
  - b) mica
  - c) aluminum
  - d) paper
- 3) The time constant of RC circuit is \_\_\_\_\_.
  - a) RC
  - b) R/C
  - c) C/R
  - d) None of these
- 4) The rectifier is used to convert \_\_\_\_\_.
  - a) ac to dc
  - b) dc to dc
  - c) ac to ac
  - d) None of these
- 5) The collector base junction of transistor is always \_\_\_\_\_.
  - a) both B & D
  - b) reverse
  - c) none of these
  - d) forward
- 6) In P-type semi-conductors \_\_\_\_\_ are majority charge carriers.
  - a) Electrons
  - b) Holes
  - c) Both A and B
  - d) None of these
- 7) The Emitter of transistor is \_\_\_\_\_ doped.
  - a) Lightly
  - b) Heavily
  - c) Both A and B
  - d) None of these
- 8) CMRR = \_\_\_\_\_.
  - a) AC/AD
  - b) AD/AC
  - c) Both A and B
  - d) None of these
- 9) Audio Frequency range \_\_\_\_\_.
  - a) 20 to 20KHZ
  - b) 20 to 30KHZ
  - c) 20 to 20MHZ
  - d) None of these
- 10) The Unit of inductor is \_\_\_\_\_.
  - a) Ohm
  - b) Henry
  - c) Farad
  - d) Volt
- 11) \_\_\_\_\_ is Active component.
  - a) Capacitor
  - b) Inductor
  - c) Diode
  - d) Resister



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**B.Sc. (E.C.S.) (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019  
DIGITAL ELECTRONICS (Paper – I)**

Day & Date: Wednesday, 13-11-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below.****14**

- 1) IC 7432 is \_\_\_\_\_ type gate.
 

a) NOR	b) NAND
c) OR	d) XOR
- 2) IC \_\_\_\_\_ is an decoder.
 

a) 74148	b) 74138
c) 74154	d) 74151
- 3) Full adder uses \_\_\_\_\_ gate.
 

a) AND,XOR	b) OR,NAND
c) AND,NOT	d) OR,XOR,AND
- 4) Base of octal no system is \_\_\_\_\_.
 

a) 2	b) 4
c) 8	d) 16
- 5) IC \_\_\_\_\_ is shift register.
 

a) 7495	b) 7490
c) 74138	d) 74150
- 6) Race condition occurs in \_\_\_\_\_ flip flop.
 

a) JK	b) RS
c) D	d) None of these
- 7) The excess 3 code of 7 is \_\_\_\_\_.
 

a) 1111	b) 1010
c) 1000	d) 0101
- 8) \_\_\_\_\_ is circuit with many input and one output.
 

a) Multiplexer	b) Demultiplexer
c) Encoder	d) Decoder
- 9) BCD equivalent for 77 is \_\_\_\_\_.
 

a) 01110111	b) 01111000
c) 01110101	d) 01010111
- 10) In T flip flop JK input are \_\_\_\_\_.
 

a) 1 , 1	b) 1 , 0
c) 0 , 1	d) 0 , 0
- 11) \_\_\_\_\_ no of flip flops are used to store 2 bits.
 

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



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**B.Sc. (E.C.S.) (Semester – I) (Old) (CBCS) Examination Oct/Nov-2019  
DISCRETE STRUCTURE**

Day & Date: Thursday, 14-11-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) In adjacency matrix of graph  $G$ , if all the diagonal elements are 0 and all non-diagonal elements are 1 then graph  $G$  is \_\_\_\_\_ graph.
  - a) null
  - b) multi
  - c) complete
  - d) none of these
- 2) The graph  $G \oplus G$  is \_\_\_\_\_; where  $G$  is simple graph.
  - a) Null graph
  - b) Graph  $G$  itself
  - c) Complete graph
  - d) Multi graph
- 3) Dijkstra's algorithm is used to find \_\_\_\_\_.
  - a) Shortest spanning tree
  - b) Eulerian circuit
  - c) Hamiltonian circuit
  - d) Shortest path
- 4) In a tree there exists \_\_\_\_\_ path in between every pair of vertices.
  - a) unique
  - b) no
  - c) more than one
  - d) exact two
- 5) A binary tree has always \_\_\_\_\_ number of vertices.
  - a) even
  - b) odd
  - c) any
  - c) infinite
- 6) If  $|A| = 37$ ,  $|B| = 23$  and  $|A \cup B| = 48$  then  $|A \cap B| =$  \_\_\_\_\_.
  - a) 108
  - b) 62
  - c) 12
  - d) Can not be determined
- 7) A trail which covers all the edges of a connected graph  $G$  is called as \_\_\_\_\_.
  - a) Closed trail
  - b) Hamiltonian trail
  - c) Eulerian circuit
  - d) Eulerian trail
- 8) The number of edges in complete graph  $K_8$  is \_\_\_\_\_.
  - a) 28
  - b) 56
  - c) 64
  - d) 32
- 9) A null graph having 'n' vertices is \_\_\_\_\_ regular graph.
  - a) n
  - b) n-1
  - c) 0
  - d) None of these
- 10) If a simple graph  $G_1$  has 'a' number of vertices and 'b' number of edges. A simple graph  $G_2$  has 'c' number of vertices and 'd' number of edges then the number of edges in the graph  $G_1 \times G_2$  are \_\_\_\_\_.
  - a) a.b + c.d
  - b) ac + bd
  - c) ad + bc
  - d) ac

- 11) If a connected graph  $G$  has 5 cut edges and 6 vertices then edge connectivity of the graph  $G$  is \_\_\_\_\_.
  - a) 5
  - b) 6
  - c) 4
  - d) 1
- 12) \_\_\_\_\_ is a particular case of Hamiltonian graph.
  - a) Travelling salesman problem
  - b) Chinese postman problem
  - c) Koningberg's 7 bridge problem
  - d) Fleury's problem
- 13) A connected graph is a tree if it has \_\_\_\_\_.
  - a) exactly one circuit
  - b) more than one circuit
  - c) no any circuit
  - d) none of these
- 14) Order of recurrence relation  $a_n + 5a_{n-2} + 3a_{n-1} = 0$  is \_\_\_\_\_.
  - a) 1
  - b) 2
  - c) 3
  - d) 4

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

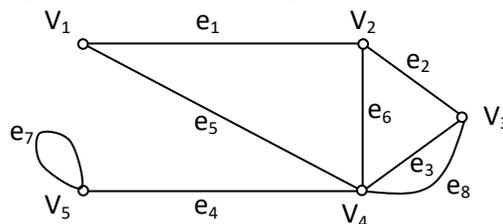
**08**

- 1) Draw the graph  $K_{3,2}$  and  $K_4$ .
- 2) Draw a graph which is both Eulerian and Hamiltonian.
- 3) State the principle of mutual inclusion-exclusion for 3 sets.
- 4) Define vertex deleted subgraph. Give one example.
- 5) Define trail and path.

**B) Answer the following questions. (Any Two)**

**06**

- 1) From the following graph  $G$ , draw the graphs
  - i)  $G - V_1$
  - ii)  $G - \{e_1, e_4\}$
  - iii)  $G - \{V_2, V_4\}$



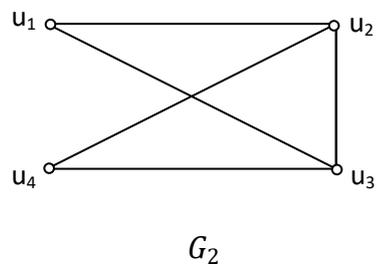
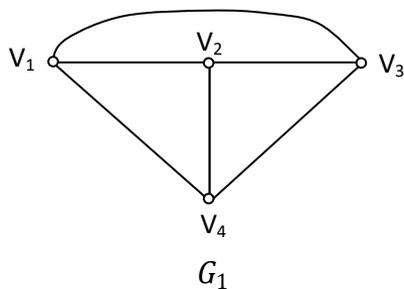
'G'

- 2) Prove that a binary tree has odd number of vertices.
- 3) Define Eulerian circuit, Hamiltonian path and Eulerian trail.

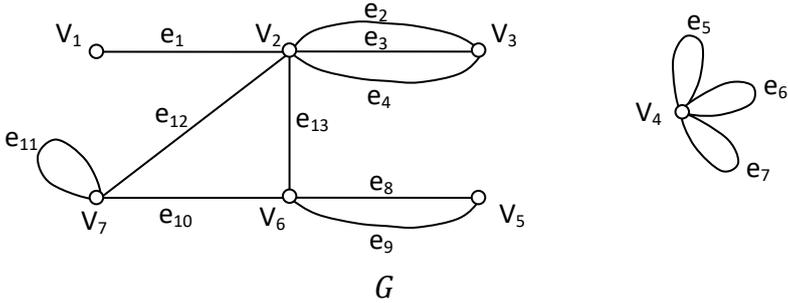
**Q.3 A) Answer the following questions. (Any Two)**

**08**

- 1) From the following graphs  $G_1$  and  $G_2$  draw the graph  $G_1 \times G_2$ . Also find number of edges in  $G_1 \times G_2$ .



2) Write adjacency matrix and incidence matrix for the following graph  $G$ .

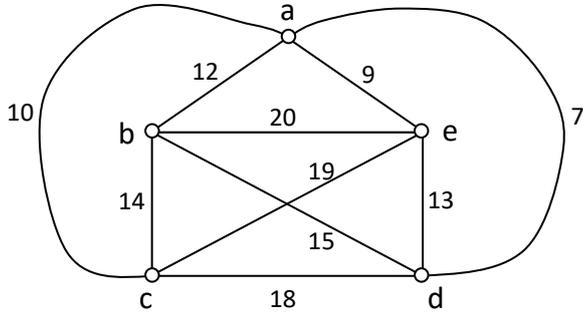


3) Define eccentricity of a vertex, radius, centre and diameter of a connected graph.

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

06

1) Starting from vertex 'a' solve the following Travelling Salesman Problem. Also find minimum distance traveled.

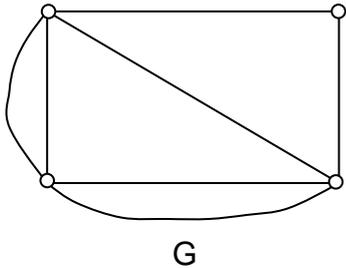


2) Prove that in any graph  $G$ , the number of odd degree vertices is even.

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

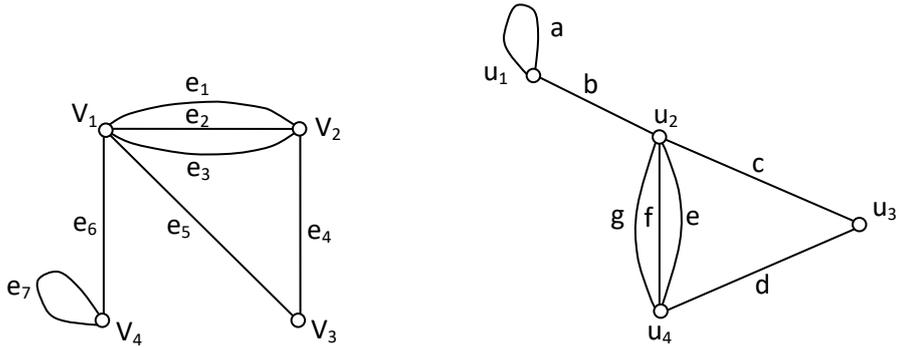
10

1) By using Fleury's algorithm, trace and write Eulerian circuit in the following connected graph  $G$ .



2) Prove that, in a binary tree having 'n' vertices, the number of pendant vertices are  $\frac{n+1}{2}$

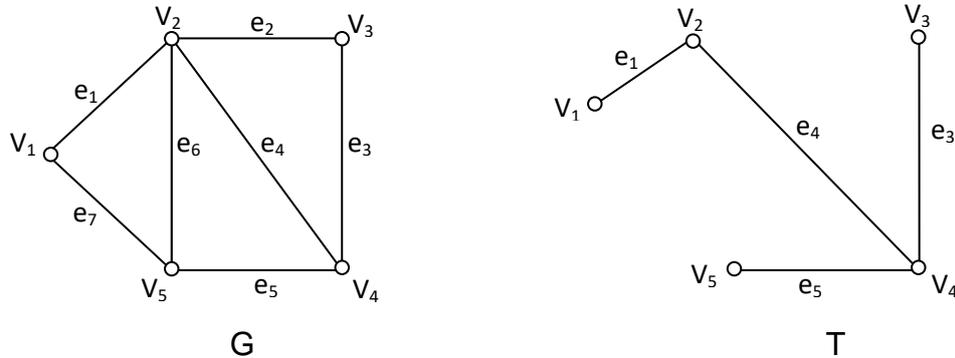
3) Determine whether the following graphs are isomorphic or not.



**B) Answer the following question. (Any One)**

04

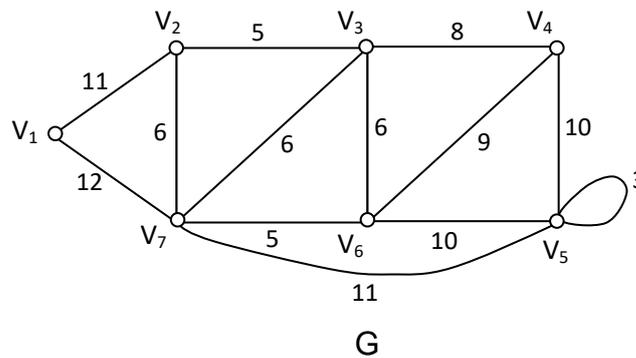
- 1) Define bipartite graph and complete bipartite graph with suitable example.
- 2) Find all branches and chords of following connected graph G w.r.t. spanning tree T. Hence draw all fundamental circuits.



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

14

- a) By using Kruskal's algorithm find shortest spanning tree and its weight for the following weighted connected graph G.



- b) Define the following terms.
  - 1) Complement of a graph
  - 2) Edge deleted subgraphs
  - 3) Ring sum of two graphs
  - 4) Simple graph
- c) State and prove principle of mutual inclusion-exclusion for three sets A, B and C.

Seat No.	
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**B.Sc. (E.C.S.) (Semester – I) (Old) (CBCS) Examination Oct/Nov-2019  
NUMERICAL METHODS**

Day & Date: Friday, 15-11-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below 14**

- 1) The equation  $\tan x - x = 0$  is \_\_\_\_\_ equation.
  - a) linear
  - b) tangent
  - c) transcendental
  - d) none of these
- 2) If we represent the system of m-linear equation in n-variables in the form of augmented matrix its order is \_\_\_\_\_.
  - a)  $m \times n$
  - b)  $m \times (n + 1)$
  - c)  $(m + 1) \times n$
  - d)  $m \times (n - 1)$
- 3) Simpson's  $\frac{1}{3}$ rd rule is obtained by putting  $n =$  \_\_\_\_\_ in general quadrature formula.
  - a) 1
  - b) 2
  - c) 3
  - d) 4
- 4) Order of column matrix is \_\_\_\_\_.
  - a)  $1 \times n$
  - b)  $n \times n$
  - c)  $m \times n$
  - d)  $n \times 1$
- 5) Runge Kutta II order method is used to solve \_\_\_\_\_ equation.
  - a) Differential
  - b) Integral
  - c) Linear
  - d) Interpolating
- 6)  $1 + \Delta =$  \_\_\_\_\_.
  - a)  $E^{-1}$
  - b)  $\frac{1}{E}$
  - c)  $E$
  - d)  $\nabla$
- 7) Inverse of matrix 'A' exist iff \_\_\_\_\_.
  - a)  $|A| = 1$
  - b)  $|A| = \infty$
  - c)  $|A| \neq 0$
  - d) None of these
- 8) The one of the roots of the equation  $f(x) = x^2 - 4x - 10 = 0$  lies in the interval \_\_\_\_\_.
  - a) (5, 6)
  - b) (-1, 0)
  - c) (4, 5)
  - d) (3, 4)
- 9)  $0.8467 E_3 \times 0.9876 E_4$  \_\_\_\_\_.
  - a)  $0.8362 E_7$
  - b)  $8.3620 E_1$
  - c)  $0.8362 E_{12}$
  - d)  $0.8362 E_{-1}$



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

- 1) Find the approximate value of root of equation  $x^3 - 4x - 9 = 0$  by bisection method take only four iterations.
- 2) Write an algorithm to solve system of m-linear equations in n- variables by using Gauss-elimination method.

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

- 1) Derive Newton-Raphson formula to find root of the equation  $f(x) = 0$ .
- 2) Given that  $\frac{dy}{dx} = x + y$ ,  $y(1) = 0$ , obtain Taylor's series for  $y(x)$  to compute  $y(1.1)$  correct upto 4 decimal places.
- 3) Evaluate  $\int_0^7 e^x dx$  by trapezoidal rule take  $h = 1$

**B) Answer the following questions. (Any One) 04**

- 1) Evaluate the following. Write your answer in normalized floating point form.
  - i)  $0.7656 E5 + 0.6896 E4$
  - ii)  $0.8692 E3 - 0.4653 E2$
  - iii)  $3.1428 E - 2 \times 2.1819 E4$
  - iv)  $0.7172 E5 \div 0.21660 E - 3$
- 2) Evaluate  $\left[\frac{\Delta^2}{E}\right] x^3$  take  $h = 1$

**Q.5 Answer the following questions. (Any Two) 14**

- a) By using Newton's forward difference interpolation formula find  $f(0.21)$  from the following data.

$x$	0.20	0.22	0.24	0.26
$y = f(x)$	1.6596	1.6698	1.6804	1.6912

- b) Evaluate  $\int_0^4 (1 + x^2) dx$  by dividing the interval into 8 equal parts by using Simpson's  $\frac{1}{3}$  rd rule.
- c) Use Range Kutta fourth order method to obtain the value of  $y$  at  $x = 0.2$  for the differential equation  $\frac{dy}{dx} = 1 + y^2$  with initial condition  $x_0 = 0$  and  $y_0 = 0$  take  $h = 0.2$



- 11) For negatively skewed distribution \_\_\_\_\_.
  - a)  $\mu_3 > 3$
  - b)  $\mu_3 = 3$
  - c)  $\mu_3 < 3$
  - d)  $\mu_3$  does not exist
- 12) The sum of squares of deviations taken from mean is \_\_\_\_\_.
  - a) Maximum
  - b) Minimum
  - c) Zero
  - d) Negative
- 13) If mean is 5 and Variance is 9 then C.V. is \_\_\_\_\_.
  - a)  $(5/9)*100$
  - b)  $(5/3)*100$
  - c)  $(3/5)*100$
  - d)  $(9/5)*100$
- 14) The measure of dispersion that based on extreme observations is \_\_\_\_\_.
  - a) Range
  - b) Variance
  - c) S.D.
  - d) C.V.

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

- 1) Define variance.
- 2) If mean is 32.1 and mode is 35.4 then find the median.
- 3) Find 1<sup>st</sup> quartile for 12, 25, 14, 24, 20, 17, 30, 32.
- 4) Define Median.
- 5) Given :  $n = 10, \sum X = 25, \sum X^2 = 313$ , find S.D.

**B) Answer the following questions. (Any Two) 06**

- 1) Calculate SD from following data  
280, 180, 96, 98, 104, 75, 80, 94
- 2) The price of brand A of tea is Rs. 120 per kg and price of brand B of tea is Rs. 90 per kg. if these two brands are mixed together in the ratio of 3:4 than find the price of average mixture.
- 3) If first three moments of a distribution about two are 1, 22 and 10 then find 3<sup>rd</sup> order central moments.

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

- 1) Write the procedure to construct the less than Ogive.
- 2) Given :  $Q_1 = 35, Q_2 = 43, Q_3 = 62$ , comment on skewness of distribution.
- 3) Find mode from following distribution

Class	10-20	20-30	30-40	40-50	50-60
Frequency	5	10	15	9	3

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

- 1) Explain the concept of Stratified sampling and give illustrative example
- 2) Compute Q.D. of following data.

X	1	2	3	4	5
F	2	5	10	3	1

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

- 1) The marks of 25 students are given below

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	2	7	10	---	1

Calculate missing frequency and hence find mean.

- 2) Explain the concept of Dispersion.
- 3) The 1<sup>st</sup> four raw moments of a distribution are 2, 15, 110, 540 respectively, comment of kurtosis.

**B) Answer the following questions. (Any One)** **04**

- 1) Define Census method and state its limitations.
- 2) The A. M. of salary of all workers in a factory was Rs. 5000. The A. M. of salary of male and female workers was Rs. 6200 and Rs. 4200 respectively. Find ratio of male and female workers in the factory.

**Q.5 Answer the following questions. (Any Two)** **14**

- a) Find mode graphically for the following distribution.

Class	10-20	20-30	30-40	40-50	50-60
Freq.	5	8	15	10	4

- b) Define skewness, explain types of skewness. State different measures of skewness.
- c) For the frequency distribution Bowley's coefficient of skewness is 0.6. the sum of first quartiles is 100 and median is 38. Find the two quartiles.

Seat  
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**B.Sc. (E.C.S.) (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019**  
**PROBABILITY THEORY – I**

Day & Date: Monday, 18-11-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) A captain and vice-captain out of 11 players team of cricket can be chosen in \_\_\_\_\_ ways.
  - a)  ${}^{11}P_2$
  - b)  ${}^{11}P_9$
  - c)  ${}^{11}C_2$
  - d)  ${}^{11}C_9$
- 2) Number of ways in which 5 different balls can be put in 4 different boxes, such that any ball can be placed in any box and any box contains any number of balls is \_\_\_\_\_.
  - a)  $4^5$
  - b)  $5^4$
  - c)  ${}^5P_4$
  - d)  ${}^5C_4$
- 3) 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
- 4) If  ${}^nC_x = {}^nC_y$ , then \_\_\_\_\_.
  - a)  $x = y$
  - b)  $x = (n - y)$
  - c)  $y = (n - x)$
  - d) all of these
- 5) A coin is tossed two times. If A: getting 3 heads, then A is \_\_\_\_\_ events.
  - a) impossible
  - b) certain
  - c) sure
  - d) none of these
- 6) An unbiased dice is rolled. If A: getting even number and B: getting odd number, then A and B are \_\_\_\_\_ events.
  - a) equally likely
  - b) mutually exclusive
  - c) exhaustive
  - d) all of these
- 7) If event A is sub-set of event B, then \_\_\_\_\_.
  - a)  $P(A) \leq P(B)$
  - b)  $P(A) < P(B)$
  - c)  $P(A) + P(B) = 1$
  - d) none of these
- 8)  $P(A/A) = \underline{\hspace{2cm}}$ , where A is any event defined on sample space.
  - a) 1
  - b) 0
  - c) any real number lies between 0 and 1
  - d) none of these
- 9) If  $F(x)$  is c.d.f of discrete r.v. X, then  $P(a \leq X \leq b) = \underline{\hspace{2cm}}$ , where a and b are the constants.
  - a)  $F(b) - F(a) + P(a)$
  - b)  $F(b) - F(a)$
  - c)  $F(b) - F(a) - P(a)$
  - d) none of these



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

- 1) Define – Cumulative distribution function (c.d.f.) of a discrete r.v. and state its properties.
- 2) A box contains 16 tomatoes of which 7 are rotten. A sample of 5 tomatoes is selected at random without replacement. Find probability of getting at least 4 rotten tomatoes.
- 3) Given:  $P(A) = 0.4$ ,  $P(B) = 0.6$  and  $P(A \cup B) = 0.7$  Find  $P(A/B)$  and  $P(B/\bar{A})$

**B) Answer the following questions. (Any One) 04**

- 1) Define - Discrete uniform distribution, state its mean and variance.
- 2) Find  $P(X > 8)$  if  $X \rightarrow B(10, 0.45)$

**Q.5 Answer the following questions. (Any Two) 14**

- 1) Define Poisson distribution, state the conditions under which Poisson distribution is limiting case of Binomial distribution. Give three real life examples where Poisson distribution is applicable.
- 2) A box contains 4 black and 7 white balls. Two balls are drawn at random without replacement. Find probability that second ball drawn will be black.
- 3) Following is the p.m.f. of discrete r.v. X

X	0.1	0.2	0.3	0.4	0.5	0.6
P(x)	0.12	0.1+k	0.2+k	0.05+k	0.15	0.2

Find

- i) value of k
- ii) mean
- iii) variance





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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
FUNDAMENTALS OF PROGRAMMING USING C AND C++ – I**

Day & Date: Friday, 08-11-2019  
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 Fill in the blanks by choosing correct alternatives given below. 08**

- 1) "C++" programs are converted into machine language with the help of \_\_\_\_\_.
  - a) Editor
  - b) Assembler
  - c) Compiler
  - d) Operating system
- 2) The \_\_\_\_\_ variable stores multiple values of same data type only.
  - a) Constant
  - b) String
  - c) Array
  - d) None of these
- 3) C++ follows \_\_\_\_\_ approach.
  - a) Top-down
  - b) Bottom-up
  - c) Top-up
  - d) Bottom-down
- 4) ++a is an example of \_\_\_\_\_.
  - a) Post-increment
  - b) Pre-increment
  - c) Post-decrement
  - d) Pre-decrement
- 5) What is correct syntax of loop?
  - a) For(initialization; condition; increment/decrement)
  - b) For(increment/decrement; initialization; condition)
  - c) For(initialization, condition, increment/decrement)
  - d) None of these
- 6) To eliminate the cost of calls to small function, C++ proposes a new features called \_\_\_\_\_.
  - a) Call by reference
  - b) Inline function
  - c) Reference variable
  - d) Default argument
- 7) Pointer is nothing but variable used to hold memory address of another variable.
  - a) True
  - b) false
- 8) Which keyword is used for structure definition?
  - a) structure\_def
  - b) struct
  - c) def\_struct
  - d) none of these

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

- a) Explain difference between Procedure Oriented Programming and Object Oriented Programming.
- b) List out different rules to declare variable in C language.
- c) What is the difference between entry-controlled and exit-controlled loop?
- d) State the syntax printf() function and scanf() function.
- e) What is reference variable?
- f) List out operators in C++.

- Q.3 Answer the following questions. (Any Two) 08**
- a) Explain conditional statements.
  - b) What is inline function? Explain with example.
  - c) What is data type? Explain data type in C language detail.
- Q.4 Answer the following questions. (Any Two) 08**
- a) What is array of structure? Explain with example.
  - b) What is function? List out types of function. Explain function returning value with example.
  - c) Write a program to find out factorial of any number.
- Q.5 Answer the following questions. (Any One) 08**
- a) What is array? Explain types of array with examples.
  - b) What is pointer? Write a program that swaps two number using pointers.

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**B.Sc. (E.C.S.) (Semester - II) (CBCS) Examination Oct/Nov-2019**  
**INTRODUCTION TO WEB DESIGNING**

Day & Date: Monday, 07-10-2019  
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

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

**14**

- 1) \_\_\_\_\_ is a common attribute for <a> tag and <link> tag.
  - a) src
  - b) href
  - c) name
  - d) target
- 2) External CSS has \_\_\_\_\_ file extension.
  - a) .html
  - b) .css
  - c) .css.html
  - d) both a & b
- 3) \_\_\_\_\_ tag is used to define different form elements.
  - a) <form>
  - b) <textarea>
  - c) <input>
  - d) None of these
- 4) MAN Stands for \_\_\_\_\_.
  - a) Metropolitan Area Network
  - b) Metro Area Network
  - c) Metropolitan All Network
  - d) None of these
- 5) \_\_\_\_\_ event handler executes a when an image is stopped from loading before completely loaded.
  - a) onAbort
  - b) onChange
  - c) onReset
  - d) onUnload
- 6) JavaScript language attributes writes within \_\_\_\_\_ tag.
  - a) <head>
  - b) <html>
  - c) <style>
  - d) <script>
- 7) The <input> type date display date on browser in \_\_\_\_\_ format.
  - a) dd/mm/yyyy
  - b) mm/dd/yyyy
  - c) yyyy/mm/dd
  - d) yyyy/dd/mm
- 8) \_\_\_\_\_ attribute of <img> tag is used to display alternate text for image.
  - a) alternate
  - b) alter
  - c) alt
  - d) altText
- 9) Which of the following property is used to set the background image of an element?
  - a) background-img
  - b) background-image
  - c) backgroundimage
  - d) background-color
- 10) In JavaScript 6 % 2 will return the \_\_\_\_\_ value.
  - a) 0
  - b) 3
  - c) 2
  - d) 6
- 11) \_\_\_\_\_ attribute of <frame> tag is used to insert another file in frame.
  - a) href
  - b) src
  - c) rows
  - d) cols



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**B.Sc. (E.C.S.) (Semester - II) (CBCS) Examination Oct/Nov-2019**  
**INTRODUCTION TO PROGRAMMING USING C – II**

Day & Date: Wednesday, 09-10-2019  
 Time: 08:00 AM to 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct given below. 14**

- 1) What is the meant by 'a' in the following operation?  
`fp = fopen("Random.txt", "a");`
  - a) Attach
  - b) Append
  - c) Amend
  - d) Add
- 2) Size of a union is determined by size of the \_\_\_\_\_.
  - a) First member in the union
  - b) Last member in the union
  - c) Biggest member in the union
  - d) Sum of the sizes of all members
- 3) Which of the following is a correct format for declaration of function?
  - a) return-type function-name(argument type);
  - b) return-type function-name(argument type) { }
  - c) return-type (argument type)function-name;
  - d) Both (a) and (b)
- 4) Which function gives the current position of the file?
  - a) fseek()
  - b) fsetpos()
  - c) ftell()
  - d) rewind()
- 5) A data structure that can store related information of different data types together is \_\_\_\_\_.
  - a) Array
  - b) String
  - c) Structure
  - d) All of these
- 6) Which one is used during memory deallocation in C?
  - a) remove(p);
  - b) delete(p);
  - c) free(p);
  - d) terminate(p);
- 7) A structure member is generally accessed using the \_\_\_\_\_.
  - a) address operator
  - b) dot operator
  - c) comma operator
  - d) ternary operator
- 8) #include is called \_\_\_\_\_.
  - a) Preprocessor directive
  - b) Inclusion directive
  - c) File inclusion directive
  - d) None of the mentioned
- 9) Union contains related information of the same data type only, \_\_\_\_\_.
  - a) True
  - b) False
- 10) What is the default return type if it is not specified in function definition?
  - a) void
  - b) int
  - c) double
  - d) short int
- 11) \_\_\_\_\_ of the following is a storage specifier?
  - a) enum
  - b) union
  - c) auto
  - d) volatile



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**B.Sc. (E.C.S.) (Semester - II) (CBCS) Examination Oct/Nov-2019**  
**LINEAR ELECTRONICS – II**

Day & Date: Thursday, 10-10-2019  
 Time: 08:00 AM to 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below.****14**

- 1) \_\_\_\_\_ uses trigger input to change state.
  - a) AMV
  - b) BMV
  - c) oscillator
  - d) none of these
- 2) Capacitor is tapped in \_\_\_\_\_ oscillator.
  - a) PSO
  - b) Colpitts
  - c) Hartley
  - d) WBO
- 3) IC 555 has \_\_\_\_\_ no pin as output.
  - a) 6
  - b) 1
  - c) 3
  - d) 2
- 4) Humidity sensor detects \_\_\_\_\_ in air.
  - a) Water
  - b) Temp.
  - c) Co2
  - d) H
- 5) Thermocouple sensor has minimum range \_\_\_\_\_ degree.
  - a) 270
  - b) 1700
  - c) 2700
  - d) 3700
- 6) RC network in PSO has phase shift of \_\_\_\_\_.
  - a) 60
  - b) 90
  - c) 180
  - d) 360
- 7) PLA uses AND, and \_\_\_\_\_ gate for construction.
  - a) OR
  - b) NOT
  - c) NOR
  - d) XOR
- 8) DMOSFET uses \_\_\_\_\_ on gate side.
  - a) CO<sub>2</sub>
  - b) SiO<sub>2</sub>
  - c) Al<sub>2</sub>O<sub>2</sub>
  - d) GeO<sub>2</sub>
- 9) Hartley Oscillator converts signal from \_\_\_\_\_.
  - a) dc to dc
  - b) ac to dc
  - c) dc to ac
  - d) ac to ac
- 10) IR sensor consists of \_\_\_\_\_ a Transmitter.
  - a) Diode
  - b) zener
  - c) LED
  - d) photodiode
- 11) Output impedance of JFET is \_\_\_\_\_.
  - a) low
  - b) small
  - c) high
  - d) zero



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**B.Sc. (E.C.S.) (Semester - II) (CBCS) Examination Oct/Nov-2019**  
**DIGITAL ELECTRONICS AND MICROPROCESSOR – II**

Day & Date: Friday, 11-10-2019  
 Time: 08:00 AM to 10:30 AM

Max. Marks: 70

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

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

**14**

- 1) IC 1208 is \_\_\_\_\_ bit DAC.
 

a) 12	b) 8
c) 4	d) 2
- 2) \_\_\_\_\_ is volatile memory.
 

a) ROM	b) PROM
c) EPROM	d) SRAM
- 3) 8085 is \_\_\_\_\_ bit microprocessor.
 

a) 4	b) 8
c) 16	d) 32
- 4) Binary weighted network is \_\_\_\_\_.
 

a) DAC	b) ADC
c) flash ADC	d) None of these
- 5) ADC 0800 is \_\_\_\_\_ bit ADC.
 

a) 2	b) 4
c) 8	d) 12
- 6) Bipolar memory cell uses \_\_\_\_\_.
 

a) MOS	b) CMOS
c) FET	d) BJT
- 7) \_\_\_\_\_ is used in data acquisition system.
 

a) ADC	b) DAC
c) DAM	d) None of these
- 8) 8085 is \_\_\_\_\_ pin IC.
 

a) 8	b) 14
c) 20	d) 40
- 9) IC 2764 is \_\_\_\_\_ EPROM chip.
 

a) 2K X 8	b) 8K X 8
c) 1K X 8	d) 4K X 8
- 10) 8085 has \_\_\_\_\_ no of addressing modes.
 

a) 5	b) 10
c) 15	d) 25
- 11) To access 2K memory \_\_\_\_\_ no of address line.
 

a) 16	b) 12
c) 8	d) 4
- 12) MVI A, 90H is \_\_\_\_\_ addressing mode.
 

a) register	b) direct
c) implied	d) immediate







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

- 1) Find real and imaginary part of the complex number  $z = \left(\frac{4-5i}{-1-3i}\right)^2$
- 2) Let  $a, b \in \mathbb{Q}$ . Let  $*$  be the binary operation defined on the set  $\mathbb{Q}$  by  $a * b = \frac{a+b}{3}$ ; check whether the operation  $*$  is commutative and associative.
- 3) Test the validity of the following argument.

$$p \leftrightarrow \sim q, \sim p \rightarrow r, \sim r \vdash p \rightarrow \sim q$$

**B) Answer the following questions. (Any One) 04**

- 1) Show that composition of two one-one functions is also one-one.
- 2) Let  $A = \{1,2,3,4,5, \}$ . Let  $R$  be the relation defined on the set  $A$  by  $aRb$  if and only if  $|a - b| \leq 4$ , for  $a, b \in A$ . Write relation  $R$ . Also write matrix of relation  $R$ .

**Q.5 Answer the following questions. (Any two) 14**

- a) Define transitive closure. Hence find transitive closure of the relation  $R = \{(x, x), (x, w), (y, x), (x, y), (z, z), (w, z), (w, w)\}$  defined on the set  $A$  by using Warshall's algorithm.
- b) If  $z_1, z_2 \in \mathbb{C}$  then show that  $\left|\frac{z_1}{z_2}\right| = \frac{|z_1|}{|z_2|}$  and  $\arg\left(\frac{z_1}{z_2}\right) = \arg z_1 - \arg z_2$
- c) State generalized principle of finite induction. Hence show that  $(2n + 1) \leq 2^n$ , for all  $n \geq 3$ .





2) Find IBFS of following T.P. by using VAM.

	$W_1$	$W_2$	$W_3$	$W_4$	$a_i$
$F_1$	5	2	4	3	22
$F_2$	4	8	1	6	15
$F_3$	4	6	7	5	18
$b_j$	12	7	17	19	

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

10

1) Solve the following A.P. to minimize the cost.

	X	Y	Z	W
I	18	22	26	30
II	12	17	22	27
III	12	17	22	27
IV	0	7	14	21

- 2) Write a short note on degeneracy in T.P.  
 3) Define feasible solution of L.P.P. and optimum solution of L.P.P. Also define alternate optimum solution of L.P.P.

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

04

1) Find IBFS by least cost method.

	$W_1$	$W_2$	$W_3$	$a_i$
$F_1$	75	80	85	100
$F_2$	90	75	82	150
$F_3$	82	97	84	200
$b_j$	75	125	250	

2) Give the difference between A.P. and T.P.

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

14

a) Solve the following L.P.P. by simplex method.

Maximize  $z = 5x_1 + 3x_2$ , subject to  
 $3x_1 + 5x_2 \leq 15$   
 $6x_1 + 2x_2 \leq 24$   
 $x_1; x_2 \geq 0$

b) Solve the following A.P. to maximize the profit.

	I	II	III	IV	V
P	30	37	40	28	40
Q	40	24	27	21	36
R	40	32	33	30	35
S	25	38	40	36	36
T	29	32	41	34	39

c) Find IBFS. Hence find the optimum solution by using MODI.

	$F_1$	$F_2$	$F_3$	$F_4$	$a_i$
$W_1$	6	5	8	5	30
$W_2$	5	11	9	7	40
$W_3$	8	9	7	13	50
$b_j$	35	28	32	25	120

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**B.Sc. (E.C.S.) (Semester - II) (CBCS) Examination Oct/Nov-2019**  
**DESCRIPTIVE STATISTICS - II**

Day & Date: Tuesday, 15-10-2019  
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.  
 2) Figures to the right indicate full marks.  
 3) Each question carry equal marks.  
 4) Soundless calculator is allowed.  
 5) Graph paper will be supplied on request.

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Karl Pearson's coefficient of correlation gives \_\_\_\_\_ of linear relationship between two variables.
  - a) magnitude
  - b) direction
  - c) magnitude and direction
  - d) None of these
- 2) If  $r_{xy} = 0.2$  then  $r_{uv} =$  \_\_\_\_\_ where  $u = \left(\frac{X-30}{10}\right)$  and  $v = \left(\frac{25-Y}{15}\right)$ 
  - a) 0.2
  - b) - 0.2
  - c) 0.15
  - d) None of these
- 3) If two variables are changes in proportion, then there is \_\_\_\_\_ correlation between them.
  - a) perfect + ve
  - b) perfect - ve
  - c) perfect + ve or - ve
  - d) None of these
- 4) The lines of regression X on Y and Y on X are coincides, then  $r_{xy} =$  \_\_\_\_\_.
  - a) +1
  - b) -1
  - c)  $\pm 1$
  - d) None of these
- 5) The equation of line of regression Y on X is  $4X + 3Y = 40$ , then  $b_{yx} =$  \_\_\_\_\_.
  - a)  $-(4/3)$
  - b)  $(4/3)$
  - c)  $(3/4)$
  - d)  $-(3/4)$
- 6) If  $b_{yx} = -0.5$  and  $b_{xy} = -1.25$ , then  $r_{xy} =$  \_\_\_\_\_.
  - a)  $-\sqrt{0.625}$
  - b)  $\sqrt{0.625}$
  - c)  $\sqrt{-0.625}$
  - d) None of the above
- 7) If  $r_{12} = r_{13} = 0$  then  $R_{1.23} =$  \_\_\_\_\_.
  - a) 1
  - b) 0
  - c) unpredictable
  - d) None of these
- 8) The partial regression coefficient \_\_\_\_\_ denotes the rate of change in  $X_2$  per unit change in  $X_1$ .
  - a)  $b_{21.3}$
  - b)  $b_{12.3}$
  - c)  $b_{23.1}$
  - d) None of these
- 9) Let  $X_1 = 45 + 3X_2 - 4X_3$  be the equation of plane of regression  $X_1$  on  $X_2$  and  $X_3$ . If  $X_3$  increases by 1 unit (keeping  $X_2$  constant)  $X_1$  will \_\_\_\_\_.
  - a) increases by 3 units
  - b) decreases by 3 units
  - c) increases by 4 units
  - d) decreases by 4 units



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

- 1) Explain scatter diagram method of studying correlation between two variables.
- 2) Obtain trend values by assuming 4 yearly cycle from the following time series.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sales (1000 Rs.)	14	18	22	26	23	27	30	32	31	34

- 3) The equations of lines of regression are  $5X + 4Y = 200$  and  $3X + 6Y = 21$ . Find  $\bar{X}$ ,  $\bar{Y}$  and  $r_{xy}$ .

**B) Answer the following questions. (Any One) 04**

- 1) Explain concept of multiple regression.
- 2) Obtain Fisher's price index number from the following data.

Community	Base period		Current period	
	Price (in 1000Rs.)	Qty. (in 100Kg.)	Price (in 1000Rs.)	Qty. (in 100Kg.)
AB	175	5	200	7
BC	200	9	195	10
CD	80	4.2	90	3.2

**Q.5 Answer the following questions. (Any Two) 14**

- a) State and explain the problems in construction of index number.
- b) Fit second degree parabola to the following time series and obtain trend values.

Year	2010	2011	2012	2013	2014
Profit (in 10000Rs.)	56	66	80	98	120

- c) Given:  $n = 10$ ,  $\sum X = 155$ ,  $\sum Y = 144$ ,  $\sum X^2 = 2965$ ,  $\sum Y^2 = 2690$ ,  $\sum XY = 2605$ . Obtain equations of line of regression and hence estimate Y when X=20 and X when Y=18.





- 3) The joint pmf of  $(X, Y)$  is
- $$P(X, Y) = \frac{2X + 3Y}{24} \quad \begin{array}{l} \text{if } X = 1, 2 \\ Y = 0, 2 \end{array}$$
- $$= 0 \quad \text{if o. w.}$$

Find  $E(X)$

**Q.3 A) Attempt any two of the following questions. 08**

- 1) Define uniform distribution. State mean and variance of it.
- 2) Define pdf of r.v.  $X$ . verify whether the following function is pdf or not.

$$f(X) = 2 \quad \text{if } 0 \leq X \leq \frac{1}{2}$$

$$= 0 \quad \text{if o. w.}$$

- 3) Let r.v.  $X$  have an exponential distribution with mean  $\theta = 4$ . Find  $P(X \leq 2)$

**B) Attempt any one of the following question. 06**

- 1) Write the test procedure for testing equality of two population means.
- 2) The joint pmf of  $(X, Y)$  is

$$P(X, Y) = \frac{(X + 2Y)}{45} \quad \begin{array}{l} \text{if } X = 1, 3, 5 \\ Y = 0, 1, 2 \end{array}$$

$$= 0 \quad \text{if o. w.}$$

Find:

- i) Marginal probability distribution of  $X$
- ii) Marginal probability distribution of  $Y$
- iii)  $P(X = 3/Y = 2)$

**Q.4 A) Attempt any two of the following questions. 10**

- 1) Define cumulative distribution function of r.v.  $X$ . State any three properties of it.
- 2) In a hospital 138 female babies and 162 male babies were born in a month. Do these figures confirm to the hypothesis that male and female are born in equal proportion.
- 3) The joint pmf of  $(X, Y)$  is

X \ Y	1	2
0	$2/24$	$4/24$
2	$8/24$	$10/24$

Test variables  $X$  and  $Y$  are independent?

**B) Attempt any one of the following question. 04**

- 1) Define mathematical expectation and variance of continuous r.v.  $X$ .
- 2) If  $X \rightarrow U[a, b]$  with mean 3 and variance 3. Find parameters " $a$ " and " $b$ ".

**Q.5 Attempt any two of the following questions. 14**

- 1) Write test procedure for testing equality of two population proportion.
- 2) Define normal distribution. State important properties of it.
- 3) A r.v.  $X$  has pdf given by

$$f(X) = C X^2 \quad \text{if } 0 \leq X \leq 1$$

$$= 0 \quad \text{if o. w.}$$

Find:

- 1) The value of  $C$
- 2)  $E(X)$
- 3)  $V(X)$

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**B.Sc. (E.C.S.) (Semester - III) (CBCS) Examination Oct/Nov-2019**  
**OBJECT ORIENTED PROGRAMMING USING C++**

Day & Date: Saturday, 05-10-2019  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Friend function can access \_\_\_\_\_ data of class.
  - a) private
  - b) public
  - c) protected
  - d) All of these
- 2) Wrapping of data and functions into a single unit is called as \_\_\_\_\_.
  - a) Constructor
  - b) data encapsulation
  - c) polymorphism
  - d) inheritance
- 3) In public derivation of class, private data of base class becomes \_\_\_\_\_ for derived class.
  - a) Private
  - b) Public
  - c) protected
  - d) not inherited
- 4) Compile time polymorphism is achieved by \_\_\_\_\_.
  - a) Function overloading
  - b) operator overloading
  - c) Both (a) and (b)
  - d) Virtual function
- 5) << is called \_\_\_\_\_.
  - a) insertion operator
  - b) Extraction operator
  - c) object
  - d) external operator
- 6) When a virtual function is redefined by the derived class, it is called \_\_\_\_\_.
  - a) overloading
  - b) overriding
  - c) Rewriting
  - d) none of the above
- 7) While overloading unary operators using member function, it requires \_\_\_\_\_ argument(s).
  - a) zero
  - b) one
  - c) two
  - d) Three
- 8) The members declared in the \_\_\_\_\_ section of class can be accessed by any function from outside world.
  - a) public
  - b) private
  - c) protected
  - d) none
- 9) The single copy of \_\_\_\_\_ data of class is common to all objects.
  - a) inline
  - b) private
  - c) static
  - d) friend
- 10) Abstract class contains at least one \_\_\_\_\_ function.
  - a) Virtual
  - b) Friend
  - c) Pure virtual
  - d) None of the above
- 11) In protected derivation of class, public data of base class becomes \_\_\_\_\_ for derived class.
  - a) private
  - b) public
  - c) protected
  - d) not inherited



Seat No.	
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**B.Sc. (E.C.S.) (Semester - III) (CBCS) Examination Oct/Nov-2019  
SOFTWARE ENGINEERING**

Day & Date: Monday, 07-10-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Modifying the software to match changes in the ever changing environment is called \_\_\_\_\_ maintenance.
  - a) Preventive
  - b) Adaptive
  - c) Corrective
  - d) Perfective
- 2) The most important feature of spiral model is \_\_\_\_\_.
  - a) Risk management
  - b) Quality management
  - c) Performance management
  - d) Efficiency management
- 3) "Black" refers in the black box testing means?
  - a) I-O is hidden
  - b) Design is hidden
  - c) User is hidden
  - d) All of these
- 4) In \_\_\_\_\_ Model, development should be done in specified time frame.
  - a) Incremental
  - b) Waterfall
  - c) RAD
  - d) Spiral
- 5) Which one of the following are data validation checks?
  - a) Length check
  - b) Type check
  - c) Range check
  - d) All of the above
- 6) Software feasibility is based on which of the following?
  - a) Business and marketing concerns
  - b) Cope, constraints, market
  - c) Technology, finance, time, resources
  - d) None of these
- 7) \_\_\_\_\_ is an object that has its own unique identity.
  - a) Relationship
  - b) Entity
  - c) Attribute
  - d) None of these
- 8) Problem identification is done during \_\_\_\_\_ phase.
  - a) system design
  - b) systems analysis
  - c) system test
  - d) All of the above
- 9) In \_\_\_\_\_ system the interaction between various subsystems cannot be defined with certainty.
  - a) Open
  - b) Closed
  - c) Deterministic
  - d) Probabilistic
- 10) \_\_\_\_\_ is graphical representation of decision tables.
  - a) Data base
  - b) Decision Tree
  - c) Flowchart
  - d) ERD

- 11) The process of getting the data to the computer for processing is called as \_\_\_\_\_.
  - a) Data Collection
  - b) Recording Data
  - c) Data element
  - d) Data
- 12) Which of the following coupling uses the same global data?
  - a) Control coupling
  - b) Stamp coupling
  - c) Data coupling
  - d) Content coupling
- 13) \_\_\_\_\_ gives defining the flow of the data through and organization or a company or series of tasks that may or may not represent computerized processing.
  - a) System process
  - b) System flowchart
  - c) System design
  - d) Structured System
- 14) \_\_\_\_\_ feasibility focuses on the existing computer hardware, software & resources.
  - a) Technical
  - b) Economic
  - c) Organizational
  - d) Operational

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

- 1) What are the benefits of Case tools?
- 2) What is software engineering? List out software characteristics.
- 3) State the principles of flow charting.
- 4) Distinguish between Physical & Abstract Systems.
- 5) Define Entity and Attribute.

**B) Write the Notes on (Any Two) 06**

- 1) Structured English
- 2) Feasibility study
- 3) Software quality - Reliability and Efficiency

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

- 1) What is the use of a data flow diagram? Explain DFD Symbol.
- 2) Draw an ER diagram for Library System.
- 3) Solve Decision Tree example-  
Bookstores get a trade discount of 25%; for orders from libraries and individuals, 5% allowed on orders of 6-14 copies per book title; 10% on orders for 15-29 copies per book title; 15% on orders for 30 copies or more per book title.

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

- 1) What is Data Dictionary? Explain each component of data dictionary?
- 2) Explain V shape Model.

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

- 1) Explain the various roles played by the system analyst.
- 2) Explain Fact finding techniques.
- 3) Explain 4NF and 5NF.

**B) Answer the following questions. (Any One) 04**

- 1) Discuss the problems faced during software maintenance.
- 2) Draw the HIPO chart for college admission system.

**Q.5 Answer the following (Any Two) 14**

- a) Draw the CLD and first level DFD for Mark sheet printing system.
- b) Explain the different methods of conversions from old system to new system
- c) What do you mean by Software Testing? Explain different types of testing techniques.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
FUNDAMENTALS OF PROGRAMMING USING C AND C++ – II**

Day & Date: Saturday, 09-11-2019  
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 Fill in the blanks by choosing correct alternatives given below. 08**

- 1) What does a class in C++ holds?
  - a) data
  - b) functions
  - c) both data & functions
  - d) none of the mentioned
- 2) Syntax for Pure Virtual Function is \_\_\_\_\_.
  - a) virtual void show()==0
  - b) void virtual show()==0
  - c) virtual void show()=0
  - d) void virtual show()=0
- 3) C++ Programming employs \_\_\_\_\_ programming approach.
  - a) bottom-up
  - b) procedural
  - c) top-down
  - d) all of these
- 4) Which among the following is called first, automatically, whenever an object is created?
  - a) Class
  - b) Constructor
  - c) New
  - d) Trigger
- 5) The following feature supports extensibility and reusability of classes \_\_\_\_\_.
  - a) Inheritance
  - b) operator overloading
  - c) function overloading
  - d) data encapsulation
- 6) The process of deriving a class from another derived class is \_\_\_\_\_.
  - a) single inheritance
  - b) multilevel inheritance
  - c) multiple inheritance
  - d) none of the above
- 7) The members of a class \_\_\_\_\_.
  - a) by default are public
  - b) are made private by declaring as private
  - c) by default are private
  - d) none of the above
- 8) The following operators cannot be overloaded \_\_\_\_\_.
  - a) scope resolution operator
  - b) size of operator
  - c) conditional operator
  - d) all of the above

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

- a) What is macro?
- b) Write syntax for a class declaration.
- c) What do you mean by function overloading?
- d) Differentiate between static memory and dynamic memory allocation.
- e) Define exception? How exception is handled in C++?
- f) What is pure virtual function?

- Q.3 Attempt any two of the following questions. 08**
- a) Write a program for multiple inheritance.
  - b) Explain access specifiers used in C++.
  - c) What is the use of new and delete operator.
- Q.4 Attempt any two of the following questions. 08**
- a) Write a program for Constructor overloading.
  - b) Explain Preprocessor Directives with example.
  - c) Write a program to accept and display student information using class.
- Q.5 Attempt any one of the following questions. 08**
- a) What is polymorphism? How it is achieved in C++?
  - b) Define constructor. Explain types of constructors in detail.

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**B.Sc. (E.C.S.) (Semester - III) (CBCS) Examination Oct/Nov-2019  
OPERATING SYSTEM**

Day & Date: Wednesday, 09-10-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which scheduler select which processes should be brought into the ready queue?
  - a) real-term
  - b) long-term
  - c) mid-term
  - d) short-term
- 2) Bring a page into memory when it is needed are called \_\_\_\_\_.
  - a) demand memory
  - b) demand paging
  - c) page fault
  - d) page segmentation
- 3) Multiprogramming system:
  - a) are easier to develop the single programming systems
  - b) execute each job faster
  - c) execute the more jobs in the same time period
  - d) are used only one large mainframe computers
- 4) Which is not the function of operating system?
  - a) memory management
  - b) disk management
  - c) application management
  - d) virus protection
- 5) What are the requirements for the solution to critical section problem?
  - a) mutual exclusion
  - b) progress
  - c) bounded waiting
  - d) all of above
- 6) What is thrashing?
  - a) A high paging activity is called thrashing
  - b) A high executing activity is called thrashing
  - c) A extremely long process is called thrashing
  - d) A extremely long virtual memory is called thrashing
- 7) The Banker's algorithm is used \_\_\_\_\_.
  - a) to rectify deadlock
  - b) to detect deadlock
  - c) to prevent deadlock
  - d) to solve deadlock
- 8) Paging is implemented in \_\_\_\_\_.
  - a) operating system
  - b) h/w
  - c) s/w
  - d) All of them
- 9) Copying a process from memory to disk to allow space for other processes is called \_\_\_\_\_.
  - a) swapping
  - b) deadlock
  - c) demand paging
  - d) page fault
- 10) A page fault occurs when \_\_\_\_\_.
  - a) the deadlock happens
  - b) the segmentation starts
  - c) the page is found in memory
  - d) the page is not found in memory

- 11) The O.S. kept the information of files in a table called \_\_\_\_\_.
  - a) File Folder Table(FFT)
  - b) File Index Table(FIT)
  - c) File Allocation Table(FAT)
  - d) Directory Index Table(DIT)
- 12) Virtual memory is \_\_\_\_\_.
  - a) extremely large main memory
  - b) extremely large secondary memory
  - c) an illusion of extremely large main memory
  - d) an illusion of extremely large secondary memory
- 13) Which of the following is the allocation method of a disk space?
  - a) contiguous allocation
  - b) linked allocation
  - c) indexed allocation
  - d) all of above
- 14) What do you mean by memory compaction?
  - a) Combine multiple equal memory holes into one big hole
  - b) Combine multiple small memory holes into one big hole
  - c) Divide big memory hole into small holes
  - d) divide memory hole by 2

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

- 1) Define deadlock
- 2) What is critical section?
- 3) Define process scheduling
- 4) Define overlays
- 5) Define multiprogramming

**B) Write Notes on (Any Two) 06**

- 1) Swapping
- 2) System call
- 3) Preemptive and Non-preemptive scheduling

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

- 1) Define file. Explain at least three types of file.
- 2) Define process and explain its various states.
- 3) Solve the following problem by using preemptive SJF

Process	P1	P2	P3	P4
Arrival Time	0	1	2	3
CPU Burst Time(msec.)	8	4	9	5

Perform the following operations:

- i) Draw Gantt chart for the schemes
- ii) Calculate average waiting time

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

- 1) State the scheduling algorithm criteria's.
- 2) Define semaphore with its operations.

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

- 1) What is concept of free space management and explain its techniques?
- 2) Explain FIFO page replacement algorithm with example.
- 3) What is segmentation?

**B) Answer the following questions. (Any One) 04**

- 1) What is wait-for-graph?
- 2) Note on Time Sharing operating system

**Q.5 Answer the following questions. (Any two)**

- a) Define operating system and explain services provided by operating system.
- b) Explain PCB with neat labeled diagram.
- c) Consider the following scenario of the system

Process	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P <sub>0</sub>	0	1	0	7	5	3	3	3	2
P <sub>1</sub>	2	0	0	3	2	2			
P <sub>2</sub>	3	0	2	9	0	2			
P <sub>3</sub>	2	1	1	2	2	2			
P <sub>4</sub>	0	0	2	4	3	3			

Perform the following operations by using Banker's algorithm

- 1) What will be the content of the Need matrix?
- 2) Is the system in safe state? If Yes, then what is the safe sequence?





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**B.Sc. (E.C.S.) (Semester - III) (CBCS) Examination Oct/Nov-2019  
EMBEDDED SYSTEM - I**

Day & Date: Friday, 11-10-2019  
Time: 03:00 PM To 05:30 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) The ARM has \_\_\_\_\_ bus architectures.
  - a) Address bus
  - b) Port bus
  - c) AMBA bus
  - d) None of these
- 2) The embedded system is designed by using \_\_\_\_\_ type of device.
  - a) Microprocessor
  - b) Microcontroller
  - c) D.S.P.
  - d) All of these
- 3) SPI stands for \_\_\_\_\_.
  - a) Serial peripheral interface
  - b) Serial and parallel interface
  - c) Synchronous peripheral interface/ interconnect
  - d) None of these
- 4) The data is read from the pipe in \_\_\_\_\_ order.
  - a) FIFO
  - b) FILO
  - c) LIFO
  - d) All of these
- 5) ARM has \_\_\_\_\_ type of controller.
  - a) RISC
  - b) CISC
  - c) Both a and b
  - d) None of these
- 6) \_\_\_\_\_ type of RAM is designed by using flip-flop.
  - a) Static
  - b) Dynamic
  - c) Virtual
  - d) Both a and b
- 7) \_\_\_\_\_ are the type of semaphore.
  - a) Binary
  - b) Counting
  - c) Both a and b
  - d) none of these
- 8) In LCD interfacing \_\_\_\_\_ pin are used for data read write operation.
  - a) R/W
  - b) E
  - c) RS
  - d) VCC
- 9) In \_\_\_\_\_, type of communication the data can transfer and receive with same clock frequency.
  - a) Serial asynchronous communication
  - b) Serial synchronous communication
  - c) Serial communication
  - d) Parallel communication
- 10) Kernel is the \_\_\_\_\_ of the operating system.
  - a) Brain
  - b) Heart
  - c) Both a and b
  - d) None of these

- 11) 8086 microprocessor has \_\_\_\_\_ bit processor.
  - a) 8 bit
  - b) 16 bit
  - c) 32 bit
  - d) 64 bit
- 12) \_\_\_\_\_ type of timer used to automatic restart or reboot the system.
  - a) Timer 0
  - b) Timer 1
  - c) Watchdog timer
  - d) None of these
- 13) C Programme are converted into machine level language by using \_\_\_\_\_.
  - a) Compiler
  - b) Interpreter
  - c) Operating system
  - d) None of these
- 14) 8051 microcontroller has \_\_\_\_\_ byte of data memory (RAM).
  - a) 128 byte
  - b) 256 byte
  - c) 64 byte
  - d) 1 kb

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

- 1) Define embedded system.
- 2) What is Watchdog timer in embedded system?
- 3) What is scheduler?
- 4) Draw the block diagram of embedded system.
- 5) State the different types of ARM development tools.

**B) Write short notes. (Any Two) 06**

- 1) Write any three features of embedded system.
- 2) Give the recent trends in embedded system.
- 3) Types of I/O Ports in embedded system.

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

- 1) Explain the designing challenges in the embedded system.
- 2) Write a note on flash memory.
- 3) Give the different applications of embedded system.

**B) Write short notes. (Any one) 06**

- 1) Explain in detail serial and parallel communication protocols. (any four)
- 2) Explain in detail ARM Core Data Flow Model.

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

- 1) Explain DMA with diagram.
- 2) Write a note on multitasking and multiprocessing.
- 3) Explain the concept Exception handling in ARM.

**B) Write short notes. (Any one) 04**

- 1) Give the features of 8051 microcontroller.
- 2) Give the difference between CISC and RISC.

**Q.5 Answer the following questions. (Any Two) 14**

- a) Explain in detail the interfacing of LCD (16\*2) display with 8051 microcontroller.
- b) Explain the concept of 3 stage pipeline in ARM organization.
- c) Write a note on Memory Mapping.



- 13) Mean Time before Failure related to \_\_\_\_\_.
- |                |                |
|----------------|----------------|
| a) Reliability | b) Access Time |
| c) Cost        | d) Capacity    |
- 14) Data Stored on Magnetic tape in \_\_\_\_\_ tracks.
- |                 |                 |
|-----------------|-----------------|
| a) Circular     | b) Longitudinal |
| c) Semicircular | d) Spiral       |

- Q.2 A) Answer the following questions. (Any Four) 08**
- 1) Write any Four Characteristics of Memory.
  - 2) Define Communication Interface.
  - 3) Define Interrupt.
  - 4) Write down Arithmetical Instruction.
  - 5) Write down definition of Stack.
- B) Answer the following questions. (Any Two) 06**
- 1) Explain Data transfer Instruction.  
i) MOV ii) IN iii) OUT
  - 2) What is mean by cache memory and types of cache?
  - 3) Explain CPU-IOP communication.
- Q.3 A) Answer the following questions. (Any Two) 08**
- 1) Explain Memory Hierarchy.
  - 2) Explain Register and Memory Stack.
  - 3) Explain Asynchronous Data transfer and Strobe Method.
- B) Answer the following questions. (Any One) 06**
- 1) Explain Data Manipulation Instruction.
  - 2) Explain any four types of Addressing Modes.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) With Suitable diagram explain General Register Organization.
  - 2) Explain State table Method.
  - 3) Explain Combinational and Sequential ALU.
- B) Answer the following questions. (Any One) 04**
- 1) Explain Segmentation in Virtual Memory.
  - 2) Explain Sequence Counter Method.
- Q.5 Answer the following questions. (Any Two) 14**
- a) Explain Bit Slice Processors.
  - b) What is DMA? Explain DMA transfer with block diagram?
  - c) Explain Virtual Memory in detail.

Seat No.	
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Set **P**

**B.Sc. (E.C.S.) (Semester - IV) (CBCS) Examination Oct/Nov-2019  
OBJECT ORIENTED PROGRAMMING USING JAVA**

Day & Date: Saturday, 19-10-2019  
Time: 08:00 AM to 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) A variable declared inside the for loop control cannot be referenced outside the loop.
  - a) True
  - b) False
- 2) All the bitwise operators have the same level of precedence in java.
  - a) True
  - b) False
- 3) The default value for char type variable is \_\_\_\_\_.
  - a) '\u0020'
  - b) '\u00ff'
  - c) " "
  - d) '\u0000'
- 4) What is wrong in the following class definitions?
 

```
abstract class print
{
    abstract show( );
}
class Display extends print
{
}
```

  - a) Nothing is wrong
  - b) Wrong. Method show( ) should have a return type
  - c) Wrong. Method show( ) is not implemented in Display
  - d) Wrong. Display does not contain any members
- 5) Which of the following control expressions are valid for an if statement?
  - a) an integer expression
  - b) a boolean expression
  - c) either a or b
  - d) Neither a nor b
- 6) A package is a collection of \_\_\_\_\_.
  - a) classes
  - b) Interfaces
  - c) editing tools
  - d) classes and interfaces
- 7) The concept of multiple inheritance is implemented in java by \_\_\_\_\_.
  - a) extending two or more classes
  - b) implementing two or more interfaces
  - c) extending one class and implementing one or more interfaces
  - d) All the above
- 8) The methods wait( ) and notify( ) are defined in \_\_\_\_\_.
  - a) java.lang.String
  - b) java.lang.Runnable
  - c) java.lang.Object
  - d) java.lang.Thread
- 9) Which of the following methods can be used to change the size of component?
  - a) dimension( )
  - b) setSize( )
  - c) area( )
  - d) resize( )



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Set	P
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**B.Sc. (E.C.S.) (Semester - IV) (CBCS) Examination Oct/Nov-2019**  
**DBMS USING ORACLE**

Day & Date: Saturday, 02-11-2019  
Time: 08:00 AM to 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) A \_\_\_\_\_ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.
  - a) Procedures
  - b) Triggers
  - c) Functions
  - d) None of the mentioned
- 2) Specialization is \_\_\_\_\_ process.
  - a) Bottom up
  - b) Top Down
  - c) Left Right
  - d) None of the above
- 3) \_\_\_\_\_ join condition contains an equality operator.
  - a) Cross Join
  - b) Cartesian
  - c) Equi Join
  - d) None of the above
- 4) The \_\_\_\_\_ constraint can only be applied at column level.
  - a) Foreign key
  - b) Primary key
  - c) Not null
  - d) None of Above
- 5) Relationships among relationships can be represented in an E-R model using \_\_\_\_\_.
  - a) Aggregation
  - b) Association
  - c) Weak entity sets
  - d) Weak relationship sets
- 6) What is degree of table with 10 row and 5 columns?
  - a) 10
  - b) 5
  - c) 15
  - d) 50
- 7) Grant and revoke are \_\_\_\_\_ statements.
  - a) DDL
  - b) TCL
  - c) DCL
  - d) DML
- 8) To change column value in a table the \_\_\_\_\_ command can be used.
  - a) create
  - b) insert
  - c) alter
  - d) update
- 9) In a dirty read problem \_\_\_\_\_.
  - a) one transaction reads an uncommitted value of another transaction
  - b) one transaction reads the committed value for another transaction
  - c) one transaction reads another transaction
  - d) one transaction commits another transaction
- 10) Which of the following has "all-or-none" property?
  - a) Atomicity
  - b) Durability
  - c) Isolation
  - d) All of the mentioned

- 11) In a two-phase locking protocol, a transaction release locks in \_\_\_\_\_ phase.
  - a) shrinking phase
  - b) growing phase
  - c) running phase
  - d) initial phase
- 12) Which type of cursor is automatically declared by Oracle every time an SQL statement is executed?
  - a) An Implicit
  - b) An Explicit
  - c) Both A & B
  - d) None of the above
- 13) Which of the following is used to input the entry and give the result in a variable in a procedure?
  - a) Put and get
  - b) Get and put
  - c) Out and In
  - d) In and out
- 14) Which SQL function is used to count the number of rows in a SQL query?
  - a) COUNT()
  - b) NUMBER()
  - c) SUM()
  - d) COUNT(\*)

- Q.2 A) Answer the following questions. (Any Four) 08**
- 1) Draw the state diagram of a transaction.
  - 2) What are the advantages of DBMS?
  - 3) What is view?
  - 4) Define the term:
    - i) Tuple
    - ii) Domain
  - 5) List database users
- B) Write Notes. (Any Two) 06**
- 1) Schemas and instances
  - 2) SQL Index
  - 3) Network data model
- Q.3 A) Answer the following questions. (Any Two) 08**
- 1) Write a PL/SQL block to check given number is prime or not.
  - 2) What is transaction? Explain its ACID property.
  - 3) Explain String function with example.
- B) Answer the following questions. (Any One) 06**
- 1) Explain the various operator used in SQL.
  - 2) Explain primary key and foreign key constraints with example.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) What is sub query? Explain its type with example.
  - 2) Explain PL/SQL procedure with example.
  - 3) Explain 2- tier and 3-tier client server architecture.
- B) Write Notes. (Any One) 04**
- 1) Explain the Group by and having clause with example.
  - 2) What is DDL? Explain Alter commands with example.
- Q.5 Answer the following questions. (Any Two) 14**
- a) What is SQL Join? Explain types of join with example.
  - b) What is a cursor? Explain explicit cursor and its attributes with example.
  - c) What is serializability? Explain view serializable schedule.





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**B.Sc. (E.C.S.) (Semester - IV) (CBCS) Examination Oct/Nov-2019**  
**COMPUTER GRAPHICS**

Day & Date: Wednesday, 23-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which of the following character generation method requires special computer software to convert bit pattern of character.
  - a) Stroke
  - b) Starburst
  - c) Bitmap
  - d) Dot matrix
- 2) Which term refers to the sharpness or clarity of an image?
  - a) Pitch
  - b) Pixel
  - c) Signal
  - d) Resolution
- 3) Video graphics array standard is \_\_\_\_\_.
  - a) 640 x 480 pixels
  - b) 670 x 580 pixels
  - c) 1280 x 1024 pixels
  - d) 800 x 600 pixels
- 4) Consider 'Sx' and 'Sy' are scaling parameters used in Scaling. 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
- 5) \_\_\_\_\_ is equivalent graphics function to `clrscr()` in textual mode.
  - a) `clrgraph()`
  - b) `cleargraph()`
  - c) `cleardevice()`
  - d) `clrall()`
- 6) The general expression for translation in homogeneous coordinate system is?
  - a)  $P' = T + P$
  - b)  $P' = T * P$
  - c)  $P' = T - P$
  - d) both a and b
- 7) Let  $(x_k, y_k)$  be the present point. In DDA line algorithm, if slope ' $m$ '  $> 1$  then next point is determined by \_\_\_\_\_.
  - a)  $x_{k+1} = x_k + 1$        $y_{k+1} = y_k + m$
  - b)  $x_{k+1} = x_k + 1$        $y_{k+1} = y_k + (1/m)$
  - c)  $x_{k+1} = x_k + (1/m)$        $y_{k+1} = y_k + 1$
  - d)  $x_{k+1} = x_k + 1$        $y_{k+1} = y_k + 1$
- 8) The transformation that slants the shape of a graphics object is called \_\_\_\_\_.
  - a) Translation
  - b) Scaling
  - c) Rotation
  - d) Shear
- 9) Which of the following algorithm uses floating arithmetic to rasterize the line?
  - a) DDA
  - b) Bresenham's
  - c) Both a and b
  - d) None of these

- 10) Which of the following is not a part of computer graphics?
  - a) Pixel
  - b) line
  - c) polygon
  - d) sound
- 11) In which file, image definition is stored in terms of pixel intensity values?
  - a) Frame buffer
  - b) Display file
  - c) Pseudo file
  - d) Metafile
- 12) \_\_\_\_\_ is Cartesian co-ordinate point is equivalent to homogeneous co-ordinate point (78, 12, 3).
  - a) (24,4)
  - b) (26,5)
  - c) (26,4)
  - d) (24,5)
- 13) Which of the following graphics function that retrieves colour value of pixel?
  - a) setpixel( )
  - b) putpixel()
  - c) getcolor()
  - d) getpixel( )
- 14) \_\_\_\_\_ is maximum value on Y-axis in Turbo 'C' graphics mode.
  - a) 480
  - b) 640
  - c) 479
  - d) 639

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

- 1) List out advantages and disadvantages of Plotter.
- 2) Write syntax and use of floodfill().
- 3) What are the merits and demerits of DDA algorithm?
- 4) What is interactive and non-interactive computer graphics?
- 5) What is display controller? List out different tasks performed by it.

**B) Write short notes on (Any Two) 06**

- 1) CRT
- 2) 2D shearing transformation
- 3) Starbust character generation method

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

- 1) Digitize the line with end points (20, 10) and (30, 18) using DDA algorithm.
- 2) A line segment having end points (3, 2) and (7, 2) is rotated anticlockwise by an angle  $90^\circ$ . Find rotation matrix and the resultant points after rotation.
- 3) Differentiate between raster scan and random scan display.

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

- 1) What is aliasing? Briefly explain anti-aliasing methods.
- 2) Find the final co-ordinates of a figure bounded by the co-ordinates (1, 1), (3, 4), (5, 7) and (10, 3) when scaled by 2 units in X-direction and 3 units in Y-direction.

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

- 1) If polygon is translated by 2 units in X-direction and 3 units in Y-direction then we get A'(5,11), B'(9,9), C'(9,4) and D'(5,5). Apply inverse transformation and find its original end points.
- 2) Explain DDA circle drawing algorithm with example.
- 3) Explain 2D reflection in details.

**B) Answer the following questions. (Any One) 04**

- 1) Write an algorithm to insert command in display file.
- 2) Write a graphics program in 'C' language that translates pentagon.

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

- 1) Explain Bresenham's line drawing algorithm. And rasterize the line segment having end points A(4,9) and B(8,14) using Bresenham's algorithm.
- 2) Derive the transformation matrix for the rotation of graphics object about an arbitrary point.
- 3) What is homogeneous co-ordinate system? Write need of homogeneous co-ordinate System and give the homogeneous co-ordinate matrices for 2D translation, rotation and scaling.

Seat  
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**B.Sc. (E.C.S) (Semester - IV) (CBCS) Examination Oct/Nov-2019**  
**EMBEDDED SYSTEM - II**

Day & Date: Thursday, 24-10-2019  
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Software development process is performed on \_\_\_\_\_ type of system.
  - a) Host system
  - b) Target system
  - c) Both a & b
  - d) None of these
- 2) \_\_\_\_\_ are the Network elements.
  - a) Router
  - b) Switch
  - c) Both a & b
  - d) None of these
- 3) The file format of Motorola is \_\_\_\_\_.
  - a) S-Record
  - b) Hex file
  - c) .exe file
  - d) None of these
- 4) In IDE Includes \_\_\_\_\_.
  - a) Editor
  - b) Compiler
  - c) Simulator
  - d) All of these
- 5) \_\_\_\_\_ is the communication link between processor & peripherals.
  - a) Serial port
  - b) Interface
  - c) USB
  - d) None of these
- 6) In \_\_\_\_\_ type of embedded system the classification is based on the performance & functional requirement of embedded system.
  - a) Stand-alone
  - b) Medium scale
  - c) Small scale
  - d) None of these
- 7) The \_\_\_\_\_ method is used to design and analysis the software before implementation.
  - a) Software design
  - b) Hardware design
  - c) Program modeling
  - d) All of these
- 8) In \_\_\_\_\_ type of programming model the data determines the flow as well as execution steps of program.
  - a) FSM Model
  - b) DFG Model
  - c) CDFG Model
  - d) all of these
- 9) Mp3 players, digital camera are the examples of \_\_\_\_\_ type of embedded system.
  - a) Small scale
  - b) Stand alone
  - c) Real time
  - d) Networked
- 10) \_\_\_\_\_ type of device used for modulation & demodulation process of signals.
  - a) Modulator
  - b) Modem
  - c) Demodulator
  - d) All of these

- 11) IEEE stands for \_\_\_\_\_.  
 a) Institute of Electrical and Electronics Engineering  
 b) International Electrical and Electronic Engineering  
 c) Both a & b  
 d) None of these
- 12) \_\_\_\_\_ type of software tool are used to create the object files from the complete set of Opcodes.  
 a) Assembler  
 b) Compiler  
 c) Interpreter  
 d) None of these
- 13) In sequential programming model the multiple functions are executed in the Sequence of \_\_\_\_\_.  
 a) LIFO  
 b) FILO  
 c) FIFO  
 d) None of these
- 14) \_\_\_\_\_ is a software used to link the compile codes, object codes and the kernel of O.S.  
 a) Locating software  
 b) Linking software  
 c) Both a & b  
 d) None of these

- Q.2 A) Answer the following questions. (Any Four) 08**  
 1) What do you mean by Compiler?  
 2) Give the examples of stand-alone and mobile embedded system.  
 3) Give the names of Laboratory tools.  
 4) Draw the pin diagram of RS232 Connector.  
 5) Write the names of programming models in embedded system.
- B) Answer the following questions. (Any two) 06**  
 1) Write any three features of USB.  
 2) Give any three features of IDE.  
 3) Define the role of Linker, Locater & Interpreter in embedded software development process.
- Q.3 A) Answer the following questions. (Any two) 08**  
 1) Explain target system in embedded system.  
 2) Explain the concept of Programming model.  
 3) Explain the steps in software development process.
- B) Answer the following questions. (Any One) 06**  
 1) Write a note on Linking and Locating software.  
 2) Explain the any three network elements.
- Q.4 A) Answer the following questions. (Any Two) 10**  
 1) Give the communication parameters of RS232.  
 2) Explain the concept of Host and Target system.  
 3) Explain the skill required for embedded system designer.
- B) Answer the following questions. (Any One) 04**  
 1) What is the need of interface?  
 2) Write a note on IEEE 802.11 protocol.
- Q.5 Answer the following questions.(Any two) 14**  
 1) Explain the issues in Hardware & Software design & co-design.  
 2) Explain in detail with applications the different software development tools in embedded system.  
 3) Explain in detail with e.g. the classification of embedded system.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - IV) (CBCS) Examination Oct/Nov-2019  
PERIPHERALS AND INTERFACING**

Day & Date: Friday, 25-10-2019  
Time: 08:00 AM to 10:30 AM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.  
3) Neat Diagram must be Drawn Wherever Necessary.

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

**14**

- 1) The 8086 has \_\_\_\_\_ Bit Data Bus.
  - a) 16
  - b) 20
  - c) 8
  - d) 70
- 2) For Clock Generator \_\_\_\_\_ IC is used.
  - a) 8286
  - b) 8282
  - c) 8284
  - d) 8288
- 3) In 8086 \_\_\_\_\_ byte Instruction Queue.
  - a) 6
  - b) 4
  - c) 5
  - d) 8
- 4) 8086 \_\_\_\_\_ Active Flags is used.
  - a) 9
  - b) 3
  - c) 4
  - d) 8
- 5) The 8255 can Operates in \_\_\_\_\_ Mode and I/O Mode.
  - a) BSR
  - b) BRS
  - c) BMW
  - d) RBS
- 6) The Intel 8257 is \_\_\_\_\_ Controller.
  - a) PPI
  - b) PIC
  - c) DMA
  - d) DAC
- 7) XCHG is \_\_\_\_\_ type of Instruction.
  - a) Arithmetic
  - b) Data Transfer
  - c) String
  - d) Bit Manipulation
- 8) In Maximum Mode of 8086 Pin 33 is connected to \_\_\_\_\_.
  - a) VCC
  - b) Ground
  - c) Open
  - d) Clock
- 9) Instruction get of 8086 include \_\_\_\_\_ Instruction.
  - a) 77
  - b) 131
  - c) 133
  - d) 130
- 10) The 8253 Works in \_\_\_\_\_ Mode.
  - a) 4
  - b) 5
  - c) 6
  - d) 2
- 11) The 80386 Processor have a Real Memory \_\_\_\_\_.
  - a) 2 GB
  - b) 4 GB
  - c) 8 GB
  - d) 16 GB
- 12) The Intel 8086 can Supports for \_\_\_\_\_ Processor Mode.
  - a) Single
  - b) Multiprocessor
  - c) Double
  - d) None of these





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

- a) Explain 4:1 Multiplexer with logic diagram and truth table.
- b) Explain Bus System in computer organization.
- c) Explain Floating point representation in binary number system with example.

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

- a) Explain with neat diagram 3-bit SIPO register.
- b) Define Universal Gates? Convert NAND gate into NOT, AND, OR, and NOR gates.

Seat  
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**B.Sc. (E.C.S.) (Semester - V) (New) (CBCS) Examination Oct/Nov-2019**  
**English**  
**LITERARY QUEST**

Day & Date: Saturday, 05-10-2019  
 Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

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

- 1) World's Parliament of Religious was held in the \_\_\_\_\_ year.
  - a) 1893
  - b) 1891
  - c) 1890
  - d) 1896
- 2) A 'Sister' according to Mother Teresa must give up all her \_\_\_\_\_.
  - a) education
  - b) life
  - c) possessions
  - d) job
- 3) \_\_\_\_\_ when our mind is tranquil says Grenville Kleiser.
  - a) You feel insults keenly
  - b) I'll thoughts cease
  - c) Become Selfish
  - d) Become unhappy
- 4) A man feels a real \_\_\_\_\_ if he hands out a ten pound note.
  - a) tremor
  - b) sad
  - c) bad
  - d) happy
- 5) Science is addressed as \_\_\_\_\_.
  - a) daughter of Old Times
  - b) enemy of Old Times
  - c) wife of Old Times
  - d) herald of New Times
- 6) T. Ramalingam \_\_\_\_\_ (speak: simple present) Marathi fluently.
  - a) Speaks
  - b) Spoke
  - c) Speaking
  - d) Speak
- 7) Vishal is \_\_\_\_\_ (strong: use comparative) than Dinesh.
  - a) Strongest
  - b) Strong
  - c) Strongest
  - d) Stronger
- 8) \_\_\_\_\_ said, "Father! you come again."
  - a) Sick man's wife
  - b) Sick man's son
  - c) Sick man
  - d) Sick man's daughter
- 9) \_\_\_\_\_ is the best message conveyed by the Parliament of Religions.
  - a) Holiness and purity are not exclusive to any one religion
  - b) Assimilation, and not destruction
  - c) All religions have produced men and women of exalted character
  - d) None of the above.
- 10) \_\_\_\_\_ has made man cruel.
  - a) Gold
  - b) Money
  - c) Silver
  - d) Position

- 11) Father Gilligan is humbled by the experience because \_\_\_\_\_.
  - a) he realizes God takes care of everyone
  - b) he feels that the dying man waited for him
  - c) he feels nature soothed him because he was so tired
  - d) God could show his concern for his community
- 12) The priest has understood that God has sent one of his \_\_\_\_\_ to help him.
 

a) Priest	b) Father
c) Angel	d) Adam
- 13) The comparative form of strange is \_\_\_\_\_.
 

a) Strangerly	b) Stranger
c) More Strange	d) Most strange
- 14) The Superlative form of ill is \_\_\_\_\_.
 

a) more ill	b) worse
c) worst	d) most ill

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

**16**

- 1) What does one gain from being clam according to the poet Grenville Kleiser?
- 2) How has money made the individual nervous, afraid and insecure? What are its long term effects?
- 3) What has science taken away from humans?
- 4) Why is Father Gilligan so weary? Why is he so struck by Grief and Guilt?
- 5) Why does the poet not support the cause of science? Describe in your own words the reasons he gives for this.
- 6) Why does Lawrence say that the present attitude towards money is all wrong? What are the changes he wants to see in society?

**Q.3 Attempt any two of the following questions.**

**12**

- 1) What are the evils that prevent the advancement of society according to Swami Vivekananda?
- 2) What do we learn from Mother's Teresa's life?
- 3) Write the dialogues for the situations:  
Rajesh goes to his friend Ramesh's Birthday Party where in he introduces himself to Ramesh's elder brother.
- 4) Write the dialogue for the situation:  
Smita and Sita are good childhood friends, After a long gap, they meet in a Reception.

**Q.4 Attempt any one of the following question.**

**14**

Write an argumentation speech on 'Ban of Polythene'.

**OR**

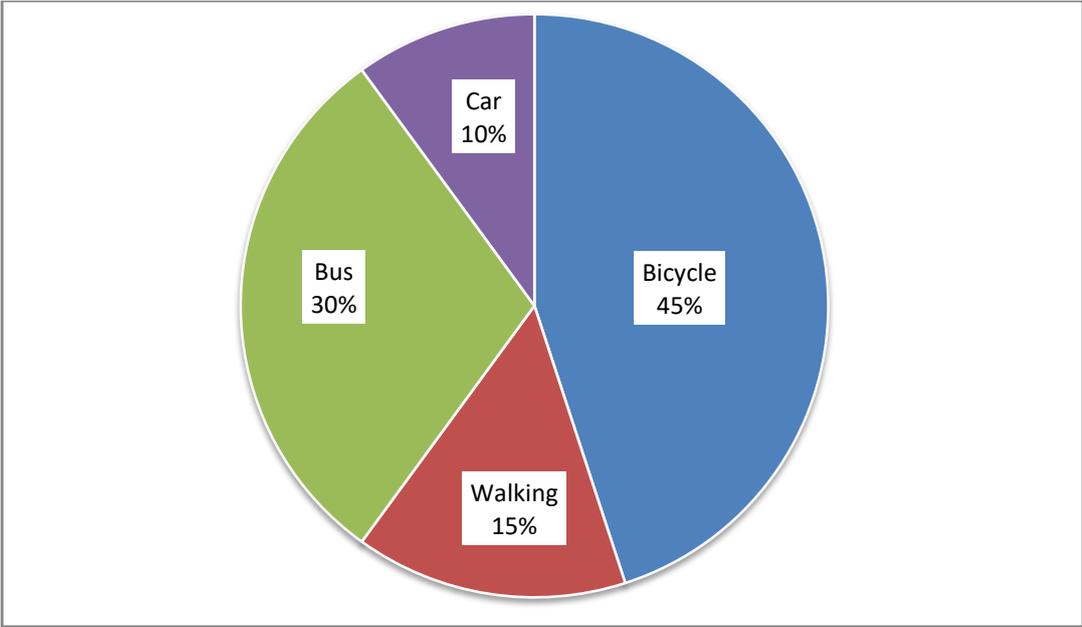
Write a debate on 'Should Students Study ethics in colleges'?

**Q.5 Read the following passage and summarize it.**

**14**

The pie chart below shows the percentages of types of transportation used by 800 students to come to college.

Study the pie chart and answer the questions :



- 1) How many students come to the college by bicycles?
- 2) How many students do not walk to college?
- 3) How many students come to college by bus or car?
- 4) Write in brief, your observation and analyze the pie chart.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - V) (New) (CBCS) Examination Oct/Nov-2019  
DATA COMMUNICATION AND NETWORKING – I**

Day & Date: Monday, 07-10-2019  
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

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

**14**

- 1) Network layer is responsible for \_\_\_\_\_.  
 a) Logical addressing                      b) Physical addressing  
 c) Port addressing                         d) MAC addressing
- 2) A set of communication line or router is called as \_\_\_\_\_.  
 a) Subnet                                      b) LAN  
 c) MAN                                         d) None of these
- 3) \_\_\_\_\_ technique is used for error correction.  
 a) CRC                                         b) Parity Check  
 c) Checksum check                         d) Hamming code
- 4) PCM is an example of \_\_\_\_\_ conversion.  
 a) Digital To Analog                        b) Digital To Digital  
 c) Analog To Digital                        d) None of Above
- 5) A telephone network uses a \_\_\_\_\_.  
 a) Message Switching                      b) Packet Switching  
 c) Circuit Switching                         d) None of Above
- 6) \_\_\_\_\_ topology uses multipoint technology.  
 a) Star                                         b) Bus  
 c) Ring                                         d) Mesh
- 7) \_\_\_\_\_ layer is responsible for process to process delivery.  
 a) Network layer                              b) Transport Layer  
 c) Session layer                              d) Datalink layer
- 8) \_\_\_\_\_ layer defines the actual medium which is for carrying data from one computer to another.  
 a) Physical                                      b) Datalink  
 c) Network                                      d) Transport
- 9) \_\_\_\_\_ layer takes care of syntax and semantics of the information exchanged between two communication system.  
 a) Physical                                      b) Datalink  
 c) Session                                      d) Presentation
- 10) OSI stands for \_\_\_\_\_.  
 a) Open System Interconnection        b) Open Syntax Interconnection  
 c) Open System Internet                    d) Object System Interconnection
- 11) In \_\_\_\_\_ communication data can be travel in both direction, but only one direction at a time.  
 a) Simple                                        b) Half Duplex  
 c) Full Duplex                                 d) None of above

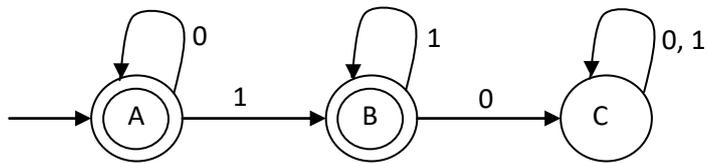






**Q.5 Answer the following questions. (Any Two)**

**a)** Construct RE for following DFA.



**b)** Construct PDA that accepts the language generated by CFG.

$$S \rightarrow S + S | S^* S | 4$$

Give the acceptance of string "2+2\*4" by PDA.

**c)** Construct Turing Machine for checking well formedness of parenthesis.

Seat  
No.

**B.Sc. (E.C.S.) (Semester - V) (New) (CBCS) Examination Oct/Nov-2019  
VISUAL PROGRAMMING – I**

Day & Date: Thursday, 10-10-2019  
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) CTS stands for \_\_\_\_\_.  
a) Common Type System                      b) Common Time System  
c) Common Type Software                  d) Combine Type System
- 2) \_\_\_\_\_ is not components of CLR.  
a) Garbage Collector                      b) Class Loader  
c) JIT Compiler                              d) CSC Compiler
- 3) Size of 'int' data type is \_\_\_\_\_ bits.  
a) 64    b) 32  
c) 48    d) 8
- 4) Namespace contains \_\_\_\_\_.  
a) Classes                                      b) Interfaces  
c) Both (a) and (b)                          d) None of Above
- 5) \_\_\_\_\_ operator creates object of the specified class and returns a reference to that object.  
a) Allocate                                      b) New  
c) Use    d) None of these
- 6) Property can have \_\_\_\_\_ accessor.  
a) get    b) set  
c) Both (a) and (b)                          d) None of above
- 7) The properties of one class may be inherited by more than one class. This process is known as \_\_\_\_\_ inheritance.  
a) Hierarchical                              b) Multilevel  
c) Single    d) Multiple
- 8) Which of these access specifier should be used for Mian() method?  
a) Private                                      b) Protected  
c) Pubic    d) None of Above
- 9) Any code that absolutely must be executed before a method returns is put in a \_\_\_\_\_ block.  
a) try    b) finally  
c) catch    d) None of Above
- 10) Which of the following is not .net exception class?  
a) DivideByZeroException                  b) StackMemoryException  
c) OutofMemoryException                  d) Exception
- 11) \_\_\_\_\_ is not Thread class method.  
a) Sleep()                                      b) Start()  
c) Join()    d) ISAlive



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Set **P**

**B.Sc. (E.C.S.) (Semester - V) (New) (CBCS) Examination Oct/Nov-2019  
WEB TECHNOLOGY AND E-COMMERCE - I**

Day & Date: Friday, 11-10-2019  
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) \_\_\_\_\_ technique is used to manage states in ASP.Net application.
  - a) Session Object
  - b) View State
  - c) Application Objects
  - d) All of these
- 2) Which property of validation summary control is used to display error message in bulleted style?
  - a) DisplayMode
  - b) DisplayStyle
  - c) ShowList
  - d) None of these
- 3) \_\_\_\_\_ is the by default mode of session object.
  - a) InProc
  - b) StateServer
  - c) SQLServer
  - d) Off
- 4) What is true about master page?
  - a) Master page contain a @Master directives on page
  - b) <asp:ContentPlaceHolder> control can be added only master page
  - c) Master page attach content pages
  - d) All of these
- 5) Which of the following classification include example of eBay.com and Amazon.com?
  - a) B2B
  - b) B2C
  - c) C2B
  - d) C2C
- 6) \_\_\_\_\_ object is used to fill DataSet or DataTable with query results in ADO.Net.
  - a) DataReader
  - b) DataSet
  - c) DataTables
  - d) DataAdapter
- 7) \_\_\_\_\_ is the first event of ASP.Net page.
  - a) PreLoad
  - b) Load
  - c) Init
  - d) PreInit
- 8) \_\_\_\_\_ validation control is used to validate phone numbers, pin code and email address.
  - a) CompareValidator
  - b) RequiredFieldValidator
  - c) RegularExpressionValidator
  - d) RangeValidator
- 9) In ASP.Net application DLL files are stored in \_\_\_\_\_ folder.
  - a) App\_Code
  - b) App\_Data
  - c) Bin
  - d) none of these
- 10) ASP.Net web application configuration setting are defined in \_\_\_\_\_.
  - a) machine.config
  - b) system.config
  - c) web.config
  - d) Both a & b



Seat  
No.

**B.Sc.(E.C.S) (Semester - V) (New) (CBCS) Examination Oct/Nov-2019  
PYTHON – I**

Day & Date: Friday, 11-10-2019  
Time: 11:30 AM To 02:00 PM

Max. Marks: 70

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

**Q.1 A) Fill in the blanks by choosing correct alternatives given below. 07**

- 1) Python is \_\_\_\_\_ Language.
  - a) High level
  - b) Middle Level
  - c) Low level
  - d) All above
- 2) To handle Multidimensional Arrays, Python use \_\_\_\_\_ package.
  - a) timepy
  - b) randompy
  - c) numpy
  - d) Neither
- 3) The standard python compiler is written in \_\_\_\_\_ language.
  - a) python
  - b) 'C++'
  - c) Java
  - d) 'C'
- 4) In python function should be all \_\_\_\_\_.
  - a) Lowercase
  - b) Uppercase
  - c) Toggle case
  - d) Title case
- 5) DocString is String written inside \_\_\_\_\_.
  - a) \*\*\* or +++
  - b) ### or ///
  - c> """ or "
  - d) "" or "
- 6) The Elements of List are inside \_\_\_\_\_.
  - a) < >
  - b) ( )
  - c) { }
  - d) [ ]
- 7) Function written a Class is called \_\_\_\_\_.
  - a) method
  - b) function
  - c) variable
  - d) constant

**Q.1 B) State True or False 07**

- 1) Extension of Python file is .pyc
- 2) Python is called Interpreted Language.
- 3) When we create Class in Python, each word of a class name should start with a Capital letter.
- 4) Python does not have a datatype to represent single letter.
- 5) The elements of frozenset can not be modified but elements of set can be modify.
- 6) An operator acts on variables which are called as operands.
- 7) tuples( ) are Mutable whereas Lists[ ] are Immutable.

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

- 1) What is use of super () method?
- 2) What is Lambda? Explain with example.
- 3) What is File? List Different modes of file.
- 4) What is variable? Differentiate Local & Global variable.
- 5) What is Regular Expression? Give any example.

- B) Write notes on. (Any Two) 06**
- 1) What are the conditional statements used in python explain with syntax?
  - 2) Define Mutable & Immutable. Explain all of them.
  - 3) What is Module? Explain any 4 built-in modules.
- Q.3 A) Answer the following questions. (Any Two) 08**
- 1) Explain working of PVM during execution of program in python. (draw diagram).
  - 2) What is String? Explain any 5 methods of String with example.
  - 3) What is function? Write a program to confirm entered no. is odd/even using function.
- B) Answer the following questions. (Any One) 06**
- 1) Explain User defined datatypes in python.
  - 2) Compare python programming with C programming.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) What is else-suite control statement used in python? Explain with syntax & example.
  - 2) What you mean by Literals? Explain different types of Literals in python.
  - 3) Explain Looping statement with example.
- B) Answer the following questions. (Any One) 04**
- 1) Write a program to find factorial of entered no.
  - 2) What is constructor & destructor? Give example.
- Q.5 Answer the following questions. (Any Two) 14**
- a) Explain Abstract classes & Interfaces with Example.
  - b) What is Exception? Write a program to handle ZeroDivisionError Exception.
  - c) Explain Function overloading and overriding with suitable example.

Seat  
No.

**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019**  
**English**  
**LITERARY QUEST**

Day & Date: Saturday, 05-10-2019  
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) In the beginning of his speech, Kipling calls himself a \_\_\_\_\_ scholar.
  - a) brilliant
  - b) intelligent
  - c) wondering
  - d) moral
- 2) Kipling advises \_\_\_\_\_ is the only thing we must not take seriously.
  - a) money
  - b) yourselves
  - c) myself
  - d) health
- 3) \_\_\_\_\_ are the simplest and commonest words are in any language, according to Shaw.
  - a) "Yes" and "no"
  - b) "Am" and "are"
  - c) "Is" and "was"
  - d) "Shall" and "should"
- 4) According to Shaw we all have \_\_\_\_\_ manners and \_\_\_\_\_ manners.
  - a) speaking, listening
  - b) reading, writing
  - c) company, home
  - d) good, bad
- 5) The speaker in 'My Grandmother's House' has lost his/her way and now begs love at \_\_\_\_\_ doors.
  - a) friends'
  - b) grandmother's
  - c) strangers'
  - d) relatives'
- 6) My captain does not answer; his \_\_\_\_\_ are pale and still.
  - a) hands
  - b) legs
  - c) eyes
  - d) lips
- 7) 'All that is best of \_\_\_\_\_ and \_\_\_\_\_ meet in the woman's aspects and her eyes,' according to Byron.
  - a) day and night
  - b) day and bright
  - c) dark and bright
  - d) dark and night
- 8) The woman, in the poem 'Upagupta', is suffering from the contagious disease called \_\_\_\_\_.
  - a) flu
  - b) cholera
  - c) measles
  - d) small-pox
- 9) \_\_\_\_\_ is the synonym for 'faith'.
  - a) fortunate
  - b) lucky
  - c) unfortunate
  - d) belief
- 10) 'Poetry' is the antonym for \_\_\_\_\_.
  - a) prose
  - b) poem
  - c) lyric
  - d) song

- 11) \_\_\_\_\_ is the antonym for 'untidy'.
- |         |          |
|---------|----------|
| a) neat | b) chaos |
| c) tiny | d) large |
- 12) \_\_\_\_\_ is the synonym for 'filthy'.
- |           |            |
|-----------|------------|
| a) Good   | b) Cunning |
| c) clever | d) dirty   |
- 13) \_\_\_\_\_ is the synonym for 'rude'.
- |           |                |
|-----------|----------------|
| a) polite | b) impolite    |
| c) good   | d) intelligent |
- 14) \_\_\_\_\_ is the antonym for 'despair'.
- |           |             |
|-----------|-------------|
| a) hope   | b) hopeless |
| c) repair | d) pair     |

**Q.2 Attempt any four of the following questions. 16**

- a) Comment on the theme of love in 'My Grandmother's House'.
- b) What does the speaker often think about the grandmother's house in the poem 'My Grandmother's House'?
- c) Why does the speaker ask captain to rise up in the poem 'O Captain! My Captain!'?
- d) Analyze any two metaphors used in the poem 'O Captain! My Captain!'.
- e) How does Byron describe the beauty of the woman?
- f) What is the subject matter of the poem 'Upagupta'?

**Q.3 Attempt any two of the following questions. 12**

- a) What will the students, whom Kipling is addressing, do when they go out into "the battle of life"?
- b) Who were the members of the committee formed by the British Broadcasting Corporation and for what purpose it was formed, according to Shaw?
- c) What are Prefixes? Explain any four prefixes with examples.
- d) What are Suffixes? Explain any four suffixes with examples.

**Q.4 Attempt any one of the following question. 14**

- a) What are the characteristics of a good leader?
- OR**
- b) What are the essential qualities required to become an effective team member?

**Q.5 What causes the stress? Write in detail about the ways of coping with the stress. 14**

Seat No.	
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Set **P**

**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019**  
**DATA COMMUNICATION AND NETWORKING – II**

Day & Date: Monday, 07-10-2019  
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Pretty Good Privacy (PGP) is used in \_\_\_\_\_.  
 a) Browser security                      b) E-mail security  
 c) FTP security                            d) None of the above
- 2) \_\_\_\_\_ partition holds the kernel in UNIX.  
 a) Root                                        b) Boot  
 c) Home                                        d) Swap
- 3) FTP uses \_\_\_\_\_ parallel TCP connections to transfer a file.  
 a) 1    b) 4  
 c) 3    d) 2
- 4) Global Positioning Service (GPS) is based on a principle called \_\_\_\_\_.  
 a) Arbitration                                b) Trilateration  
 c) Orbiteration                                d) Globalization
- 5) Digital signature provides \_\_\_\_\_.  
 a) Authentication                            b) Non Repudiation  
 c) Both a and b                                d) None
- 6) \_\_\_\_\_ is a static-content Web server designed within the Linux kernel.  
 a) Squid                                        b) Samba  
 c) Tux    d) INN
- 7) Class \_\_\_\_\_ addresses were designed for multicasting.  
 a) A    b) B  
 c) C    d) D
- 8) Which of the following devices works at the Network layer of the OSI reference model?  
 a) Routers                                      b) Bridges  
 c) Repeaters                                    d) Gateways
- 9) \_\_\_\_\_ provides either authentication or encryption, or both, for packets at the IP level.  
 a) AH    b) PGP  
 c) ESP    d) SSL
- 10) Bluetooth network consists of one primary device and up to \_\_\_\_\_ devices.  
 a) 5    b) 7  
 c) 9    d) 11
- 11) \_\_\_\_\_ algorithms are more efficient for short messages.  
 a) DES    b) Symmetric  
 c) Asymmetric                                d) None

- 12) \_\_\_\_\_ provides a set of fundamental operations for monitoring and maintaining an internet.
- a) ARP
  - b) RTP
  - c) SNMP
  - d) TCP
- 13) In asymmetric key cryptography, the private key is kept by \_\_\_\_\_.
- a) Sender
  - b) Receiver
  - c) Sender and receiver
  - d) None
- 14) What is the header size of UDP packet?
- a) 8 bytes
  - b) 8 bits
  - c) 16 bytes
  - d) 124 bytes

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

- 1) What is the use of samba server in Linux?
- 2) What is an anonymous FTP?
- 3) Which are the various classes of Network?
- 4) What is the use of Courier and Qmail?
- 5) Convert following word by using ceaser cipher by shift down key 7  
"MEET ME IN THE GARDEN TOMORROW"

**B) Write Notes on (Any Two) 06**

- 1) Explain TELNET in short.
- 2) Explain S / MIME in short.
- 3) Explain bridges in short.

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

- 1) Explain ARP protocol.
- 2) Explain VPN in detail.
- 3) Explain CUPS in short.

**B) Answer the following question. (Any One) 06**

- 1) Explain SNMP protocol in detail.
- 2) Explain various security services.

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

- 1) Which device is used to connect two networks using different protocols?  
Explain in detail.
- 2) Explain SET in detail.
- 3) Explain SQUID server in detail.

**B) Answer the following question. (Any One) 04**

- 1) Three way handshaking mechanism
- 2) Proxy firewall

**Q.5 Answer the following questions. (Any Two) 14**

- a) Explain IPsec in detail.
- b) Explain Remote Sensing in detail.
- c) Explain Digital Signature in detail.

Seat No.	
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Set **P**

**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019  
ADVANCED JAVA**

Day & Date: Wednesday, 09-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which JDBC driver Types are use to over communications networks?
  - a) network protocol driver
  - b) Thin drive
  - c) both a) & b)
  - d) None of the above
- 2) Which of the following code is used to get an attribute in a HTTP Session object in servlets?
  - a) session.getAttribute(String name)
  - b) session.alterAttribute(String name)
  - c) session.updateAttribute(String name)
  - d) session.setAttribute(String name)
- 3) Which of the following is not an implicit object?
  - a) date
  - b) out
  - c) pagecontext
  - d) application
- 4) A JSP is transformed into a \_\_\_\_\_.
  - a) Java applet
  - b) Java Servlet
  - c) either one or two
  - d) none of these
- 5) JApplet class extends the Applet class \_\_\_\_\_.
  - a) True
  - b) False
- 6) Java swing components are platform-independent.
  - a) True
  - b) False
- 7) \_\_\_\_\_ classes are used for connection-oriented socket programming.
  - a) DatagramSocket
  - b) DatagramPocket
  - c) ServerSocket
  - d) none of these
- 8) \_\_\_\_\_ bridge driver uses ODBC driver to connect to the database.
  - a) thin driver
  - b) jdbc-odbc bridge driver
  - c) native api driver
  - d) none of these
- 9) \_\_\_\_\_ is used to return the text of the button.
  - a) void setText(String str)
  - b) String getText()
  - c) void buttonName()
  - d) none of these
- 10) \_\_\_\_\_ is an file, from which Web Container gets the information about the servlet to be invoked.
  - a) servlet.xml
  - b) web.html
  - c) web.servlet
  - d) web.xml
- 11) \_\_\_\_\_ is a prefix for function tag in JSTL tag library.
  - a) funprefix
  - b) fun
  - c) fn
  - d) functions



Seat  
No.

**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019  
VISUAL PROGRAMMING – II**

Day & Date: Thursday, 10-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) \_\_\_\_\_ delegate can hold and invoke multiple methods.
  - a) Unicast Delegate
  - b) Multicast Delegate
  - c) SingleCast Delegate
  - d) All of Above
- 2) \_\_\_\_\_ is a delegate type class member that is used by the class or object to provide notification to other objects.
  - a) Event
  - b) Delegate
  - c) Action
  - d) None of Above
- 3) \_\_\_\_\_ property of Form class enables or disables the control box of title bar.
  - a) MaximizeBox
  - b) MinimizeBox
  - c) ControlBox
  - d) Hide
- 4) \_\_\_\_\_ control is used to select or deselect multiple options from a list of options.
  - a) Option Button
  - b) Check Box
  - c) Radio Button
  - d) Text Box
- 5) The default event of Text Box is \_\_\_\_\_.
  - a) Enter
  - b) Move
  - c) KeyPress
  - d) TextChanged
- 6) \_\_\_\_\_ is the extension of crystal report.
  - a) .rpt
  - b) .report
  - c) .cs
  - d) .rtp
- 7) \_\_\_\_\_ letter is used for underline in the button control.
  - a) -
  - b) &
  - c) #
  - d) \*
- 8) LINQ query can work with \_\_\_\_\_.
  - a) Dataset
  - b) List<T>
  - c) Array
  - d) All of the above
- 9) \_\_\_\_\_ is the namespace which should be included while making use of LINQ operations.
  - a) System.Text
  - b) System.Collections.Generic
  - c) System.Linq
  - d) None of the above
- 10) Progress Bar can be incremented using \_\_\_\_\_ property.
  - a) Values
  - b) Value
  - c) Text
  - d) Increment
- 11) Interval property in Timer control takes values in form of \_\_\_\_\_.
  - a) Second
  - b) Minutes
  - c) Milliseconds
  - d) Microseconds





- Q.3 Write notes. (Any Two)** **08**
- 1) Write a note on programmed I/O technique
  - 2) What is mapping? Explain associative mapping.
  - 3) Write a note on register stack.
- Q.4 Attempt any two of the following question.** **08**
- 1) What is difference between machine and assembly language?
  - 2) Explain arithmetic and logical micro-operations.
  - 3) Write a note on cache memory.
- Q.5 Attempt any one of the following.** **08**
- What are the types of CPU organization? Explain register organization with neat and labeled diagram.

**OR**

What are the data transfer techniques? Explain DMA in detail.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019  
WEB TECHNOLOGY AND E-COMMERCE – II**

Day & Date: Friday, 11-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) \_\_\_\_\_ attributes can be used for data validation in MVC.
  - a) DataAnnotations
  - b) Fluent API
  - c) DataModel
  - d) HtmlHelper
- 2) How many 'ScriptManager' control can be added on a ASP.NET web page?
  - a) Only One
  - b) More than One
  - c) Only Two
  - d) None of the above
- 3) What are the different types of Session Mode in ASP.NET?
  - a) InProc
  - b) StateServer
  - c) SQLServer
  - d) All of the above
- 4) What are the disadvantages of AJAX?
  - a) Dependent on JavaScript
  - b) Security issues
  - c) Debugging is difficult
  - d) All of the above
- 5) ASP.NET validation controls works (handle validation) at \_\_\_\_\_.
  - a) Client side only
  - b) Server side only
  - c) Both client side and server side
  - d) None of the above
- 6) How many types of authentication ASP.NET supports?
  - a) Windows Authentication
  - b) .NET Passport Authentication
  - c) Forms Authentication
  - d) All of the above
- 7) You need to programmatically configure page output caching. Which object would you use?
  - a) Request
  - b) Response
  - c) Application
  - d) Server
- 8) Which namespace is used for ASPX View Engine?
  - a) System.Web.Razor
  - b) System.Web.Mvc.WebFormViewEngine
  - c) Both A & B
  - d) None
- 9) Which of the below is not a session tracking method?
  - a) URL rewriting
  - b) History
  - c) Cookies
  - d) SSL sessions
- 10) Validation events of server controls occur before the page is post back to the server.
  - a) True
  - b) False

- 11) Which of the following is not a party of SCM?
  - a) Suppliers
  - b) Manufacturers
  - c) Distributors
  - d) Customers
- 12) What type of data can Cookies store?
  - a) String
  - b) DateTime
  - c) System.Int32
  - d) None of the above
- 13) Which object is used to fill a DataSet/DataTable with query results in ADO.net.
  - a) DataReader
  - b) Dataset
  - c) DataAdapter
  - d) DataTables
- 14) How many types of caching ASP.NET supports?
  - a) Page Output Caching
  - b) Partial Page Caching
  - c) Both a & b
  - d) None of these

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

- 1) What is Role?
- 2) What is hidden variable?
- 3) Define E-Market.
- 4) What is .Net MVC?
- 5) What is Cookies?

**B) Write notes (Any Two) 06**

- 1) What are component of ASP.Net AJAX Client library?
- 2) What is site map path?
- 3) Write the E-Commerce Security.

**Q.3 A) Answer the following questions. (Any two) 08**

- 1) Write the advantages & disadvantages of EDI.
- 2) Explain the Update panel & Update Progress in AJAX.
- 3) Write .Net MVC framework in brief.

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

- 1) Explain the client server architecture of AJAX.
- 2) Write a Credit Transaction Trade cycle of E-Market.

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

- 1) Explain different modes of online payment.
- 2) What is authentication & its mode?
- 3) What is cookies & its types?

**B) Answer the following questions. (Any One) 04**

- 1) Write a folder structure of web application.
- 2) Explain about session Tracking.

**Q.5 Answer the following questions. (Any two) 14**

- a) Define EDI & Explain its benefits with explanation.
- b) Explain tree view & menu view control.
- c) Write Short note on-
  - i) E-Shop
  - ii) Internet Banking

Seat No.	
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**B.Sc. (E.C.S.) (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019  
PYTHON – II**

Day & Date: Friday, 11-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which method Returns a list of all thread objects that are currently active?
  - a) threading.activeCount()
  - b) threading.currentThread()
  - c) threading.enumerate()
  - d) none of these
- 2) How to detect the status of a python thread?
  - a) isAlive()
  - b) isActive()
  - c) isDaemon()
  - d) None
- 3) Which method is used to identify a thread?
  - a) getName()
  - b) get\_ident()
  - c) getThread()
  - d) None
- 4) How to terminate a blocking thread?
  - a) thread.stop()
  - b) thread.wait()
  - c) thread.terminate()
  - d) both a) and b)
- 5) URL stands for Universal Resource Locator.
  - a) True
  - b) False
- 6) Which of the following method binds address (hostname, port number pair) to socket?
  - a) bindsocket()
  - b) socketbind()
  - c) addr()
  - d) bind()
- 7) What is the correct syntax of the declaration which defines the XML version?:
  - a) <xml version= "A.0" />
  - b) <?xml version= "A.0" ?>
  - c) <?xml version= "A.0" />
  - d) None of the above
- 8) In XML, which attribute used to define a new namespace?
  - a) XMLNS
  - b) XmlNameSpace
  - c) Xmlns
  - d) XmlINs
- 9) CGI stands for Common Gateway Interface.
  - a) True
  - b) False
- 10) What is extension of Common Gateway Interface Script?
  - a) .cg
  - b) .cgi
  - c) .cgt
  - d) .cgl
- 11) To create an image, use \_\_\_\_\_.
  - a) image = Photolmage (imagefilename)
  - b) image = Image (file = imagefilename)
  - c) image = Photolmage (file = imagefilename)
  - d) image = Photolmage (imagefilename)

- 12) \_\_\_\_\_ is an object that defines a screen element used to display information or Allow the user to interact with a program in a certain way.
- a) GUI
  - b) Component
  - c) Listener
  - d) AWT
- 13) The \_\_\_\_\_ widget is used to draw shapes, such as lines, ovals, polygons and rectangles, in your application.
- a) Canvas
  - b) Frame
  - c) Entry
  - d) Window
- 14) Which type of database management system is MySQL?
- a) Object-oriented
  - b) Hierarchical
  - c) Relational
  - d) Network

- Q.2 A) Answer the following questions. (Any Four) 08**
- 1) What is XML?
  - 2) What is the difference between threading.Lock and threading.RLock?
  - 3) What is CGI?
  - 4) List out advantages of Thread.
  - 5) What is process?
- B) Write the notes (Any Two) 06**
- 1) Cookies
  - 2) URL
  - 3) Message Widget
- Q.3 A) Answer the following questions. (Any two) 08**
- 1) Differentiate between Get and Post method.
  - 2) Explain steps for Database connectivity.
  - 3) Write a GUI program to check given number is Armstrong or not. (use Widgets)
- B) Answer the following questions. (Any One) 06**
- 1) Explain CGI architecture.
  - 2) Explain Layout management with example.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) Write a program to display protocol, host, port, file name of a given URL.
  - 2) Explain XML parser architecture.
  - 3) Explain Validation and Authentication in CGI
- B) Answer the following questions. (Any One) 04**
- 1) Write a program to retrieving employee information such as eid,ename,salary, etc from Employee table.
  - 2) Explain server socket methods.
- Q.5 Answer the following questions. (Any two) 14**
- a) Explain deadlock of threads with example.
  - b) Explain Entry and Menu widgets with example?
  - c) Write a program to implement "Thread synchronization".

Seat No.	
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**B.Sc. (E.C.S.) (Semester - VI) (Old) (CGPA) Examination Oct/Nov-2019  
DATABASE MANAGEMENT SYSTEM – II**

Day & Date: Saturday, 05-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which of the following has "all-or-none" property?
  - a) Atomicity
  - b) Durability
  - c) Isolation
  - d) All of the mentioned
- 2) Which of the following is used to input the entry and give the result in a variable in a procedure?
  - a) Put and get
  - b) Get and put
  - c) Out and In
  - d) In and out
- 3) The \_\_\_\_\_ is default name of Implicit cursor.
  - a) User given
  - b) sql
  - c) Implicit
  - d) none of these
- 4) The \_\_\_\_\_ data type is used to match the data type of column value and data type of that variable.
  - a) char
  - b) varchar2
  - c) %type
  - d) %rowtype
- 5) All loop statements must end with a \_\_\_\_\_ statement.
  - a) End loop
  - b) End if
  - c) Else
  - d) None of these
- 6) What are the ways of dealing with deadlock?
  - a) Deadlock prevention
  - b) Deadlock recovery
  - c) Deadlock detection
  - d) All of above
- 7) A system is in a \_\_\_\_\_ state if there exists a set of transactions such that every transaction in the set is waiting for another transaction in the set.
  - a) Idle
  - b) Waiting
  - c) Deadlock
  - d) Ready
- 8) The \_\_\_\_\_ scheme uses a page table containing pointers to all pages; the page table itself and all updated pages are copied to a new location.
  - a) Shadow copy
  - b) Shadow Paging
  - c) Update log records
  - d) All of above
- 9) Which of the following is not a recovery technique?
  - a) Deferred update
  - b) Immediate update
  - c) Two-phase commit
  - d) Recovery management
- 10) Which of the following returns the current error message text?
  - a) SQLERRM
  - b) SQLCODE
  - c) Both A & B
  - d) None of the above
- 11) A package will have which of these mandatory parts?
  - a) Package specification
  - b) Package body or definition
  - c) Both A & B
  - d) None of the above



Seat No.	
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Set **P**

**B.Sc. (E.C.S.) (Semester - VI) (Old) (CGPA) Examination Oct/Nov-2019  
DATABASE COMMUNICATION AND NETWORKING – II**

Day & Date: Monday, 07-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Transport layer protocols deals with \_\_\_\_\_.  
 a) application to application communication  
 b) process to process communication  
 c) node to node communication  
 d) none of the mentioned
- 2) A piece of icon or image on a web page associated with another webpage is called \_\_\_\_\_.  
 a) url  
 b) hyperlink  
 c) plugin  
 d) none of the mentioned
- 3) \_\_\_\_\_ allows you to connect and login to a remote computer.  
 a) Telnet  
 b) FTP  
 c) HTTP  
 d) None of the mentioned
- 4) If an Address Resolution Protocol (ARP) request is broadcast, an ARP reply is \_\_\_\_\_.  
 a) Universal  
 b) Unicast  
 c) Multicast  
 d) Generated locally
- 5) Which of the following is / are the types of firewall?  
 a) Packet Filtering Firewall  
 b) Dual Homed Gateway Firewall  
 c) Screen Host Firewall  
 d) All of the mentioned
- 6) An interconnected collection of piconet is called \_\_\_\_\_.  
 a) scatternet  
 b) micronet  
 c) mininet  
 d) none of the mentioned
- 7) SSL provides \_\_\_\_\_.  
 a) message integrity  
 b) confidentiality  
 c) compression  
 d) all of the above
- 8) Pretty good privacy (PGP) is used in \_\_\_\_\_.  
 a) Browser security  
 b) Email security  
 c) FTP security  
 d) None of the mentioned
- 9) In asymmetric key cryptography, the private key is kept by \_\_\_\_\_.  
 a) sender  
 b) receiver  
 c) sender and receiver  
 d) all the connected devices to the network
- 10) DNS database contains \_\_\_\_\_.  
 a) name server records  
 b) hostname-to-address records  
 c) hostname aliases  
 d) all of the mentioned



Seat  
No.

**B.Sc. (E.C.S.) (Semester - VI) (Old) (CGPA) Examination Oct/Nov-2019  
ADVANCED JAVA**

Day & Date: Wednesday, 09-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Which JDBC driver Types are for use over communications networks?
  - a) Type 3 only
  - b) Type 4 only
  - c) Both type 3 and type 4
  - d) None of these
- 2) \_\_\_\_\_ classes are used for connection-less socket programming.
  - a) DatagramPacket
  - b) DatagramSocket
  - c) ServerSocket
  - d) both a and b
- 3) JSP stands for \_\_\_\_\_.
  - a) Java Server Pages
  - b) Java Server Programming
  - c) Java Service Pages
  - d) Java Service Programming
- 4) Preprocessing filter is not possible in servlet.
  - a) True
  - b) False
- 5) AWT stands for \_\_\_\_\_.
  - a) Abstract Window Toolkit
  - b) Abstract window Tool
  - c) Advanced Window Toolkit
  - d) none of these
- 6) syntax of expression tag in jsp \_\_\_\_\_.
  - a) <%! %>
  - b) <% %>
  - c) <%= %>
  - d) none of these
- 7) How are java web applications packaged?
  - a) .class
  - b) war
  - c) zip
  - d) None of these
- 8) What does MIME stand for\_\_\_\_\_?
  - a) Multipurpose Internet Messaging Extension
  - b) Multipurpose Internet Mail Extension
  - c) Multipurpose Internet Media Extension
  - d) Multipurpose Internet Mass Extension
- 9) Which class represents an Internet Protocol address?
  - a) InetAddress
  - b) Address
  - c) IP Address
  - d) TCP Address
- 10) URL stands for \_\_\_\_\_.
  - a) Url Resource Locator
  - b) Uniform Relocate Language
  - c) Uniform Relocate Locator
  - d) none of these
- 11) Which of the below is not a session tracking model?
  - a) URL rewriting
  - b) History
  - c) Cookies
  - d) SSL sessions
- 12) Application is instance of which class?
  - a) javax.Servlet.Application
  - b) javax.servlet.HttpContext
  - c) javax.servlet.Context
  - d) javax.servlet.ServletContext



Seat No.	
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Set P

**B.Sc. (E.C.S.) (Semester - VI) (Old) (CGPA) Examination Oct/Nov-2019  
VISUAL PROGRAMMING AND APPLICATION SOFTWARE – II**

Day & Date: Thursday, 10-10-2019  
Time: 08:00 AM To 10:30 AM

Max. Marks: 70

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

**Q.1 Fill in the blanks by choosing correct alternatives given below. 14**

- 1) Fields placed in \_\_\_\_\_ section of crystal report are printed at the bottom of last page only.
  - a) Report Footer
  - b) Page Footer
  - c) Page Header
  - d) Report Bottom
- 2) SDI stands for \_\_\_\_\_.
  - a) Sami Document Information
  - b) Single Data Information
  - c) Single Document Interface
  - d) Simple Data Interface
- 3) \_\_\_\_\_ control is used to select or deselect multiple options from a list of options.
  - a) Option Button
  - b) Check Box
  - c) Radio Button
  - d) Text Box
- 4) \_\_\_\_\_ letter is used for underline in the button control.
  - a) -
  - b) &
  - c) #
  - d) \*
- 5) \_\_\_\_\_ event occur when the mouse pointer is moved over a control.
  - a) MouseUp
  - b) MouseHover
  - c) MouseDown
  - d) MouseMove
- 6) \_\_\_\_\_ control does not have a Text property.
  - a) GroupBox
  - b) TextBox
  - c) Panel
  - d) Button
- 7) \_\_\_\_\_ syntax is used in LINQ.
  - a) From --- where --- select
  - b) Select --- from --- where
  - c) Where --- select --- from
  - d) None of the above
- 8) \_\_\_\_\_ is a delegate type class member.
  - a) Class
  - b) Delegate
  - c) Event
  - d) None of these
- 9) \_\_\_\_\_ is the namespace which should be included while making use of LINQ operations.
  - a) System.Text
  - b) System.Collections.Generic
  - c) System.Linq
  - d) None of the above
- 10) ComboBox DropDownStyle property provides \_\_\_\_\_ values
  - a) Simple
  - b) DropDown
  - c) DropDownList
  - d) All of the Above
- 11) \_\_\_\_\_ property is used to sets or gets the text of the windows form.
  - a) Caption
  - b) Font
  - c) Name
  - d) Text





- 12) How many types of authentication ASP.NET supports?  
a) Windows Authentication                      b) .NET Passport Authentication  
c) Forms Authentication                        d) All of the above
- 13) What are the element of code access security?  
a) Evidence, Permission                        b) SQLSecurity  
c) UserInterface                                d) SQL Injection
- 14) Which one of the following is not one of the major types of e-commerce?  
a) C2B    b) B2C  
c) B2B    d) C2C

- Q.2 A) Answer the following questions. (Any Four)                      08**  
1) What is exception handling?  
2) Write a purpose of online payment.  
3) What is ADO.Net?  
4) Use of AJAX.  
5) Define View State.
- B) Write notes. (Any Two)    06**  
1) Write the User.Identity & User.IsInRole.  
2) Explain site map path.  
3) What is cookies & Write its types.
- Q.3 A) Answer the following questions. (Any Two)                      08**  
1) Explain the many view & Tree view.  
2) Write the benefits of AJAX in ASP.Net.  
3) Debugging & error handling in ASP.Net.
- B) Answer the following questions. (Any One)                              06**  
1) Write the website evaluation mode.  
2) Define Authentication. Explain in detail.
- Q.4 A) Answer the following questions. (Any Two)                      10**  
1) Write the server side state with its types.  
2) Write the authentication control in ASP.Net.  
3) Write the elements of E-Commerce.
- B) Answer the following questions. (Any One)                              04**  
1) What are the payment modes for E-Commerce?  
2) Write the basic steps on how to ADO.Net connect to database.
- Q.5 Answer the following questions. (Any Two)                              14**  
a) Write Short note Note on-  
    i) E-Diversity                                ii) E-Visibility  
b) Write Script manager & Time control in AJAX.  
c) Explain State management in ASP.Net.







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

- 1) What are the advantages and disadvantages of Computer? Explain.
- 2) Explain Architecture of computer with suitable block diagram.
- 3) Write a Note on CLR, IDE and JVM.

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

- 1) Explain various types of Computers.
- 2) Define Computer Language? Explain Types of Computer language.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
FUNDAMENTAL OF COMPUTER SYSTEM – II**

Day & Date: Friday, 15-11-2019  
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.  
3) Draw neat diagrams and give equations wherever necessary.

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

**08**

- 1) \_\_\_\_\_ is the volatile memory that holds data temporarily.
  - a) ROM
  - b) Memory board
  - c) PROM
  - d) RAM
- 2) \_\_\_\_\_ is output device designed to get hard copy output.
  - a) LCD
  - b) Monitor
  - c) Printer
  - d) CRT
- 3) ALU stands for \_\_\_\_\_.
  - a) Application Logic Unit
  - b) Arithmetic Logic Unit
  - c) Array Logic Unit
  - d) None of above
- 4) In MICR commonly used font is \_\_\_\_\_.
  - a) F13D
  - b) E13D
  - c) E13B
  - d) F13B
- 5) \_\_\_\_\_ is most popular storage medium that are accessed and processed data sequentially.
  - a) Optical Disc
  - b) Hard Disk
  - c) Magnetic tape
  - d) None of above
- 6) A light sensitive device that converts drawing, printed text or other images in to digital form are \_\_\_\_\_.
  - a) Plotter
  - b) Scanner
  - c) OMR
  - d) keyboard
- 7) \_\_\_\_\_ is main circuit board of computer.
  - a) Motherboard
  - b) SMPS
  - c) Serial port
  - d) None of above
- 8) The speed of Dot matrix printer is measured in \_\_\_\_\_.
  - a) dpi
  - b) cps
  - c) ppm
  - d) None of above

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

**08**

- a) How data is stored on a CD-ROM?
- b) What is meant by soft copy and hard copy output? Give examples of soft copy and hard copy output devices.
- c) What is application of MICR?
- d) What is sequential access storage device and direct access storage device?
- e) What is Computer?
- f) What is serial port?

- Q.3 Write short notes (Any Two)** **08**
- a) Motherboard
  - b) Bar- code readers
  - c) Printers
- Q.4 Answer any two the following questions.** **08**
- a) What is computer memory? Explain storage structure of hard disk.
  - b) What is pointing device? Explain the types of mouse.
  - c) What is different types of memory? Explain in details.
- Q.5 Answer any one the following questions.** **08**
- Draw block diagram of computer and explain all its units with neat diagram.
- OR**
- Define and list the output device? Explain working of dot matrix printer.

Seat No.	
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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
NUMERICAL METHODS – I**

Day & Date: Saturday, 16-11-2019  
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 Fill in the blanks by choosing correct alternatives given below.****08**

- 1) A matrix having only one row is called \_\_\_\_\_ matrix.
  - a) Column
  - b) Row
  - c) Identify
  - d) Zero
- 2) A square matrix is said to be \_\_\_\_\_ if  $A^t = A$ .
  - a) Symmetric
  - b) Skew-symmetric
  - c) Identify
  - d) Null matrix
- 3) If  $f(x) = 0$  be a non-linear eq<sup>n</sup> then location of root exists if  $f(x_0)$  and  $f(x_1)$  have \_\_\_\_\_ sign.
  - a) Negative
  - b) Opposite
  - c) Zero
  - d) Positive
- 4)  $0.5603E_2 \div 0.2112E_1 = \underline{\hspace{2cm}}$ .
  - a)  $0.3596E_1$
  - b)  $2.6529E_1$
  - c)  $1.6544E_1$
  - d)  $2.0905E_1$
- 5) The system of linear equation of the matrix of the form  $[A/B]$  is said to be \_\_\_\_\_ matrix.
  - a) Augmented
  - b) Homogeneous
  - c) Diagonal
  - d) Symmetric
- 6)  $0.4399E_{10} \times 0.5789E_{-12} = \underline{\hspace{2cm}}$ .
  - a)  $0.4399E_{-2}$
  - b)  $0.5789E_{-12}$
  - c)  $0.2546E_{-2}$
  - d)  $0.1526E_{-12}$
- 7) Location of the root of the equation  $f(x) = x^3 - 2x - 5 = 0$  is \_\_\_\_\_.
  - a) [1,3]
  - b) [2,3]
  - c) [3,4]
  - d) [0,1]
- 8) A scalar matrix in which all the diagonal element's are equal to one is called \_\_\_\_\_ matrix.
  - a) Symmetric
  - b) Identity
  - c) Null
  - d) Empty

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

- 1) Define square matrix.
- 2) Define upper triangular matrix.
- 3) Find location of root of non-linear eq<sup>n</sup>  $f(x) = x^3 - 4x - 9 = 0$  lies.
- 4) Define Column matrix.
- 5) Define Absolute error.
- 6) Define system of linear equation's.

- Q.3 Write short notes on any two of the following. 08**
- 1) Augmented matrix
  - 2) Row echelon form
  - 3) Location of root's
- Q.4 Answer any two of the following questions. 08**
- 1) Solve the following system of linear equation by using gauss elimination method  
 $x + y + 3z = 0;$   
 $3x - 4y + 4z = -2;$   
 $5x + y + 6z = 5;$
  - 2) Solve the following system of non-linear equation by using Newton-raphson method (correct upto three iteration's)  
 $f(x) = x^3 - 2x - 5 = 0$
  - 3) Write an algorithm to find root of the eq<sup>n</sup>  $f(x) = 0$  by bisection method
- Q.5 Answer any one of the following questions. 08**
- 1) Solve the following system of linear equation by using Jacobi- iterative method  
 $20x + y - 2z = 17;$   
 $3x + 20y - z = -18;$   
 $2x - 3y + 20z = 25;$
  - 2) Solve the following system of linear equation by Gauss-Jordan method  
 $x + y + 2z = 9;$   
 $2x + 4y - 3z = 1;$   
 $3x + 6y - 5z = 0;$

Seat No.	
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**B.Sc. (E.C.S.) (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
NUMERICAL METHODS – II**

Day & Date: Monday, 18-11-2019  
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.  
3) Use of scientific calculator is allowed.

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

- 1) The first order divided difference of \_\_\_\_\_.  
 a)  $\frac{f(x_1) - f(x_0)}{x_1 - x_0}$                       b)  $f(x_1) - f(x_0)$   
 c)  $\frac{f(x_1) + f(x_0)}{x_1 - x_0}$                       d)  $f(x_0) - f(x_1)$
- 2) \_\_\_\_\_ rule can be obtained by putting  $n = 2$  in the general quadrature formula for equidistant ordinates.  
 a) Trapezoidal                                      b) Newton's – Cotes  
 c) Simpson's (3/8)<sup>th</sup>                              d) None of these
- 3) In Runge – Kutta fourth order method,  $K_2 =$  \_\_\_\_\_.  
 a)  $hf(x_0 + h, y_0 + k_1)$                       b)  $hf(x_0 + h/2, y_0 + k_{1/2})$   
 c)  $f(x_0 + h/2, y_0 + k_{1/2})$                       d)  $h \cdot f(x_0, y_0)$
- 4) Which of the following relation is true?  
 a)  $E = 1 - \Delta$                                       b)  $\Delta = E + 1$   
 c)  $E = 1 + \Delta$                                       d)  $E = \Delta$
- 5) Simpson's (3/8)<sup>th</sup> rule is obtained by putting  $n =$  \_\_\_\_\_ in general quadrature formula for equidistant ordinates.  
 a) 0    b) 1  
 c) 2    d) 3
- 6) In \_\_\_\_\_ method of solving O.D.E., we get first general solution and then by putting particular value we get a particular numerical solution.  
 a) Euler's    b) Modified Euler's  
 c) Runge – Kutta                                      d) Taylor's
- 7) \_\_\_\_\_ is the process of finding the required numerical value of  $f(x)$ , where 'x' lies within the given range of the data.  
 a) Integration                                      b) Extrapolation  
 c) Interpolation                                      d) Differentiation

- 8) The Trapezoidal rule to find value of  $I = \int_a^b f(x). dx$  for the entries  $y_0, y_1, y_2, y_3$  and  $y_4$  is \_\_\_\_\_.
- a)  $h[(y_0 + y_4) + 2(y_1 + y_2 + y_3)]$
  - b)  $\frac{h}{2}[(y_0 + y_4) + 4(y_1 + y_2 + y_3)]$
  - c)  $\frac{h}{2}[(y_0 + y_4) + 2(y_1 + y_2 + y_3)]$
  - d)  $\frac{h}{2}(y_0 + y_4) + 2(y_1 + y_2 + y_3)$

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

**08**

- a) State formulae for  $K_1$  and  $K_2$  in Runge-Kutta second order method.
- b) State Simpson's  $(3/8)^{th}$  rule for integration.
- c) Prepare forward difference table for the following data.

$x$	5	10	15	20
$y = f(x)$	4.1820	6.7345	12.8686	10.2240

- d) Define  $\Delta f(x)$  and  $\nabla f(x)$ .
- e) State General Quadrature formula for equidistant ordinates.
- f) Define degree and order of a differential equation.

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

**08**

- a) Prove that  $(\Delta - \nabla) = \Delta \nabla$ .
- b) Evaluate  $\int_2^7 (x^3 - 1) dx$  by using Trapezoidal rule. Take  $h = 1$ .
- c) State the formulae for  $k, k_1, k_3$  and  $k_4$  in Runge - Kutta fourth order method to solve ordinary Differential Equation.

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

**08**

- a) Use Euler's method to estimate the value of  $y$  at  $x = 2.8$ , for the differential equation  $\frac{dy}{dx} = 1 + xy$ ; with initial conditions  $x_0 = 2, y_0 = 3$ . Take  $h = 0.2$
- b) By using Lagrange's interpolation formula, find  $f(5.8)$  from the data given below.

$x$	0	4	5	6
$y = f(x)$	-10	10	45	104

- c) Evaluate:  $\int_5^{14} \log_{10} x. dx$  by using Simpson's  $(1/3)^{rd}$  rule, by dividing the interval of integration into 5 equal parts.

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

**08**

- a) Derive Newton's Forward Difference Interpolation Formula.
- b) By stating General Quadrature formula for equidistant ordinates, derive Simpson's  $(1/3)^{rd}$  rule