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B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
ENGLISH (COMMUNICATION SKILL)

Day & Date: Thursday, 07-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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) Nachiketa waited for the God of Death for three days by _____.
   a) dancing   b) reading
   c) meditating   d) singing

2) _____ is on screen person by Charlie Chaplin.
   a) Making a Living   b) The Tramp
   c) Kid Auto Races at venice   d) None of the above

3) In which year did Shanti Tigga passed away?
   a) 2016   b) 2005
   c) 2013   d) 2014

4) God of Death granted _____ boons.
   a) four   b) two
   c) three   d) All

5) I find no peace, and all my _____ is done.
   a) war   b) work
   c) sorrow   d) happiness

6) To comprehend a nector, Requires _____ need.
   a) urgent   b) sorest
   c) poor   d) none of the above

7) _____ is a naming word.
   a) pronoun   b) noun
   c) verb   d) Adverb

8) I want to buy _____ laptop next week.
   a) a   b) an
   c) The   d) All

Q.2 A) Answer the following questions. (Any Four)   **12**
1) Describe the makers of Charlie Chaplin's first film.
2) What's so special about Shanti Tigga being a Jawan in the army?
3) Write about boons given by God of death to Nachiketa.
4) What is the central idea of the poem "I Find No Peace"?
5) What is the theme of the poem success is counted sweetest?
6) What is noun? Describe its types.

Q.3 Answer any one of the following questions.   **10**
1) What is 'M' approach?
                       OR
2) How do you communicate with principal regarding problems in Computer Lab?

Q.4 What is communication? Write communication process in details.   **10**

Seat No.

B.C.A. (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019
FUNDAMENTALS OF COMPUTER

Day & Date: Saturday, 09-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 brain of any computer system is _____.
   a) ALU   b) Memory
   c) CPU   d) Control unit

2) The language that the computer can understand and execute is called _____.
   a) Machine language   b) Application software
   c) System program   d) None of the above

3) Actual execution of instructions in a computer takes place in _____.
   a) ALU   b) Control Unit
   c) Storage unit   d) None of the above

4) _____ is used as a primary storage device.
   a) Magnetic tape   b) PROM
   c) Floppy disk   d) None of the above

5) A translator is best described as _____.
   a) An Application software   b) A system software
   c) A hardware   d) None of the above

6) One thousand bytes represent a _____.
   a) Megabyte   b) Gigabyte
   c) Kilobyte   d) None of the above

7) Which of the following is a computer code?
   a) EPROM   b) JAVA
   c) EBCDIC   d) None of the above

8) The number system that we use in our day to day life is called the number System _____.
   a) Octal   b) Binary
   c) hexadecimal   d) Decimal

9) $(11010011)_2 = (?)_{16}$
   a) $(D3)_{16}$ b) $(A3)_{16}$
   c) $(B3)_{16}$ d) $(D2)_{16}$

10) Light pen and joystick are _____.
    a) Algorithm   b) Input devices
    c) Output devices   d) Portals

11) FORTRAN is _____.
    a) File Translation   b) Format Translation
    c) Formula Translation   d) Floppy Translation

12) The capacity of 3.5 inch floppy disk is _____.
   a) 1.40 MB
   b) 1.44 GB
   c) 1.40 GB
   d) 1.44 MB

13) The output quality of a printer is measured by _____.
   a) CPS
   b) PPM
   c) LPM
   d) DPI

14) The task of performing operations like arithmetic and logical operations is called _____.
   a) Processing
   b) Storing
   c) Editing
   d) Sorting

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) What is Data and Information?
   2) What are the basic operations of Computer?
   3) Give the List of computer applications.
   4) What is a volatile and non-volatile memory?
   5) What is Firmware?

B) Write Notes on (Any Two)   **06**
   1) Motherboard
   2) Digitizer
   3) Internet

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) What is software? Explain different types of system software.
   2) Explain working of dot matrix printer with diagram.
   3) Write the steps for convert Binary to Decimal number system with example.

B) Answer the following questions. (Any One)   **06**
   1) Convert the following number:-
      i) $(486)_{10} = (?)_2$
      ii) $(AEB)_{16} = (?)_2$
      iii) $(111010)_2 = (?)_{10}$
   2) What is Periodic backup? How to protect from virus?

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) Explain hard disk with suitable diagram.
   2) Write the different steps for sending E-mail to your friend?
   3) What is plotter? Explain different types of plotter.

B) Answer the following questions. (Any One)   **04**
   1) Explain different types of viruses.
   2) Write good characteristics of computer languages?

Q.5 Answer the following questions. (Any Two)   **14**
   a) What is computer? Explain block diagram of computer?
   b) What is scanner? Explain types of scanner with diagram.
   c) Explain different types of computer.

Seat No.

B.C.A. (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019
Science
BASICS OF 'C' PROGRAMMING

Day & Date: Wednesday, 13-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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) Who is father of C Language?
   a) Bjarne Stroustrup   b) James A. Gosling
   c) Dennis Ritchie   d) Dr. E. F. Codd

2) Which of the following operator takes only integer operands?
   a) +   b) *
   c) /   d) %

3) Which of the following operator used as Ternary Operator _____.
   a) <=   b) >=
   c) ? :   d) ? =

4) _____ is compulsory section.
   a) main()   b) documentation section
   c) link section   d) None of these

5) The function scanf() returns _____.
   a) The actual values read for each argument
   b) 1
   c) The number of successful read input values
   d) 0

6) An array elements are always stored in _____ memory locations.
   a) Sequential   b) Random
   c) Sequential and Random   d) None of the above

7) All keywords in C are in _____.
   a) Upper Case letters   b) Lower Case letters
   c) Camel Case letters   d) None of these

8) Which of the following are not unary operators in C?
   a) !   b) Sizeof
   c) ~   d) &&

9) Which of the following special symbol allowed in a variable name?
   a) * (asterisk)   b) | (pipeline)
   c) - (hyphen)   d) _ (underscore)

10) What is the associativity of an Operator _____.
    a) Right to left   b) No Associativity
    c) Left to right   d) None of these

11) A Variable can not start with _____.
   a) An alphabet
   b) A number
   c) A special symbol other than underscore
   d) b) and c) both

12) What is the output of this C code?
   ```c
   #include <stdio.h>

   void main()
   {
     int a;
         a=(5 * 3 )% 6 - 8 + 3;
     printf("%d",a);
   }
   ```
   a) +3   b) -2
   c) +2   d) -3

13) What is the output of this C code?
   ```c
   #include <stdio.h>

   int main()
   {
     int i = 10, j = 3, k = 3;
     printf("%d %d ", i, j, k);
   }
   ```
   a) Compile time error   b) 10 3 3
   c) 10 3 some garbage value   d) 10 3

14) Which of the following is not an arithmetic operation?
   a) a*= 10;   b) a/= 10;
   c) a!= 10;   d) a%=10;

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) What are the purposes of goto statement?
   2) Define algorithm.
   3) Write the syntax of printf () function.
   4) List out rules to declare variable.
   5) Syntax of do-while loop.

B) Write Notes on (Any Two)   **06**
   1) Explain any two storage Classes.
   2) Explain different steps to solve the problem.
   3) Write a program in C addition of two numbers.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Explain local & global variable.
   2) Explain advantages & disadvantages of algorithm. Write algorithm of minimum of two numbers.
   3) Write a program to display number is even or odd.

B) **Answer the following questions. (Any One)**   **06**
1)   What is operator? Explain its types.
2)   Write a program in C to compute the sum of digits of a given numbers
     by using function.

Q.4   A)   Answer the following questions. (Any Two)   **10**
1)   What is Array? Explain one and two Dimension of array in details.
2)   What is Data types? Explain all primitive data types in detail.
3)   Write a program in C to print following pattern.

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B)   Answer the following questions. (Any One)   **04**
1)   Explain the term 'recursion'.
2)   Explain structure of 'C' program in details.

Q.5   Answer the following questions. (Any Two)   **14**
a)   What is Flow Chart? Explain all flow chart symbols.
b)   What is function? Explain inbuilt and user defined function with example.
c)   Write a program in c to calculate addition of two matrixes.

Seat No.

B.C.A. (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019
FINANCIAL ACCOUNTING WITH TALLY

Day & Date: Friday, 15-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
             2) Figures to the right indicate full marks.
             3) Use soundless calculator if necessary.

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

1) Straight line method of depreciation is also called as _____ method.
   a) Original Cost   b) Equal installment
   c) Fixed Installment   d) All of above

2) Solapur university A/c _____ type of account.
   a) Real account   b) Personal A/c
   c) Nominal A/c   d) None of these

3) LIFO Stands for _____.
   a) First in First out   b) Last in First out
   c) Last in Last out   d) First in Last out

4) Expenditure incurred on the purchase of fixed assets is _____ expenditure.
   a) Revenue   b) Capital
   c) Deferred revenue   d) None of these

5) _____ Discount is not recorded in the books of account.
   a) Cash   b) Trade
   c) Quantity   d) None of these

6) _____ is explanation for the journal entries passed.
   a) Voucher   b) Transaction
   c) Narration   d) Invoice

7) The books in which journal is divided is called as_____
   a) Ledger   b) Subsidiary book
   c) Journal   d) Cash book

8) In Tally for Receipt Voucher_____ Key used.
   a) F6   b) F7
   c) F8   d) F9

9) Which voucher type is used to transfer amount from one bank to another?
   a) Payment   b) Receipt
   c) Contra   d) Post-dated

10) Which shortcut key is pressed for voucher entry or deleting a ledger?
   a) Alt+A   b) Alt+C
   c) Alt+X   d) Alt+D

11) Which shortcut key used to view configure in tally?
   a) F10   b) F11
   c) F12   d) Alt + F9

12) To change the date shortcut key is used _____.
   a) Alt + F2
   b) Alt + F3
   c) F2
   d) F1

13) TAN Stands for_____.
   a) Tax Account Number
   b) Tax Assessment Number
   c) None of these
   d) Tax Assignment Number

14) BOM Stands for_____.
   a) Bill of Machine
   b) Bill Of Manpower
   c) Bill of Material
   d) None of these

Q.2 A) Answer the following (Any Four)   **08**
   1) Ledger
   2) Trail Balance
   3) Narration
   4) Gross Profit
   5) Godown

B) Write Notes on (Any Two)   **06**
   1) Explain the Definition and Rules of Real A/c
   2) Explain the Definition of Book keeping & Accountancy
   3) Explain the concept of Sales order process.

Q.3 A) Answer the following (Any Two)   **08**
   1) Give the objects of Book keeping.
   2) Benefits of double entry system.
   3) Explain the features of Tally.

B) Answer the following (Any One)   **06**
   1) A Company Ltd. Purchased a machinery of Rs.47000/- on 1st April 2010 & spent of Rs.3000/- it's on installation. Company purchased another machinery on 1st Oct 2010 for Rs.25000/- Company decided to charges the depreciation @ 10% p.a. under straight line method on 31st March every year.
   Prepare machinery account for the year 2010-11, 2011-12 & 2012-13
   2) Explain different types of voucher in Tally.

Q.4 A) Answer the following (Any Two)   **10**
   1) Explain the Accounting Concept.
   2) Write short note on Bill of Material.
   3) Write short note on Profit and Loss A/c

B) Answer the following (Any One)   **04**
   1) Define Nominal Account with Rule & suitable examples.
   2) Types of MIS Reports.

Q.5 Answer the following (Any Two)   **14**
   a) Shri Ram Trader, Solapur wants to prepare a store Ledger account for the month January 2017, on the basis FIFO method.
   1) 1st Jan. purchased 1500 units @Rs.5 per unit.
   2) 3rd Jan issued 1000 units.
   3) 8th Jan. purchased 1000 units @ Rs 5.50 per unit.
   4) 15th Jan, issued 800 units.
   5) 21st Jan, purchased 1000 units @ Rs.5.00 per units.
   6) 31st Jan. issued 1500 units.

b) Journalize the following transaction in the books of Mr. A for the month of July 2017.
  1) Started business with cash of Rs.25000/-
  2) Cash sales Rs.5000/-
  3) Goods purchased of Rs.4500/- for Cash.
  4) Goods distributed as a free sample of Rs.350/-
  5) Opened bank account by depositing of Rs.1000/-
  6) Paid salary Rs,13000/-
  7) Paid office rent by cheque of Rs.2600/-

c) Write short note on e-TDS in Tally ERP 9.

Seat No.

B.C.A. (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019
COMMUNICATION SKILLS

Day & Date: Monday, 18-11-2019　　　　　　　　　Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 the person who transmits the message.
   a) Driver　　　　　　　　　b) Sender
   c) Receiver　　　　　　　　d) Mediator

2) Environmental barriers are same as _____ noise.
   a) Physiological　　　　　　b) Psychological
   c) Physical　　　　　　　　d) Sociological

3) Letter, E-mail, Fax, Telephone are examples of _____.
   a) Channel　　　　　　　　b) Encoding
   c) Feedback　　　　　　　　d) Message

4) Find the odd man out from the following aspects of paralanguage _____.
   a) Volume　　　　　　　　b) Pitch
   c) tone　　　　　　　　　d) writing speed

5) _____ communication includes tone of voice body language, facial expressions etc.
   a) non verbal　　　　　　　b) verbal
   c) letter　　　　　　　　　d) notice

6) Upward Communication flows from _____ by way of complains, suggestions etc.
   a) competition　　　　　　　b) customers
   c) lower level　　　　　　　d) client

7) A Meeting without agenda, is the meeting that lacks _____.
   a) Proper Feedback　　　　　b) Structure
   c) a) and b)　　　　　　　d) None of these

8) What is essential to ensure conciseness of business communication?
   a) avoids multiple repetition
   b) must be relevant
   c) must not contain long expression
   d) none of these

9) Communication without words known as _____
   a) verbal　　　　　　　　b) horizontal
   c) grapevine　　　　　　　d) non-verbal

10) FIR is _____.
    a) Formal Investigation Report
    b) First Investigation Report
    c) Formal Informational Reporting
    d) None of these

11) Body of a letter is divided into _____ parts.
   a) 1   b) 2
   c) 3   d) 4

12) When the accounting manager communicates to the purchasing manager the dollars available for purchases in the current month, this is an example of _____.
   a) Upward Communication   b) downward Communication
   c) Horizontal Communication   d) grapevine Communication

13) All are the examples of the media of two way communication except _____.
   a) public meeting   b) padyatra
   c) streetplays   d) procession and rallies

14) Which of the following is not a successful communicatior?
   a) One who presents material in a precise and clear way
   b) One who is able to adapt himself according to the language of the communicate
   c) One who knows a lot but is somewhat reserve in his attitude
   d) One who sometimes becomes informal before the receiver and develops rapport

Q.2 A) Explain the following in Short. (Any Four)   08
   1) Salutation
   2) Abbreviations
   3) Voice email
   4) Non-routine reports
   5) Preciseness
   6) You Attitude
   7) Barriers to communication

B) Write the answer of following question.(Any Two)   06
   1) Explain Socio-psychological Barriers to communication.
   2) Explain advantages of Grapevine communication.
   3) Explain Written aspects of Non-verbal Communication.

Q.3 A) Answer the following question.(Any two)   08
   1) Explain Minutes of Meetings. Write a agenda for the Meeting to be conducted to discuss annual planning of the advertisement department.
   2) Explain objectives of upward Communication.
   3) Write a resume for the post of teacher of science at higher secondary school.

B) Answer the following question.(Any One)   06
   1) Define Communication. Explain the elements of communication and importance of the same in communication process.
   2) Write an Inquiry Letter to a "Reliable Life insurance company" about group insurance schemes and policies for your company employees.

Q.4 A) Answer the following question.(Any Two)   10
   1) Explain different parts of letter.
   2) Define Meeting. Explain types of Meetings.
   3) Explain different Modern ways of Communication.

    B)   **Answer the following question.(Any One)**   **04**
         1)   Define reports. Explain any 2 types of reports.
         2)   Explain types of Communication.

Q.5 **Write short note on**   **14**
    1)   Overcoming Barriers of communication
    2)   Planning of Letter
    3)   Steps in writing report
    4)   7 C's of Communication

Seat No.

B.C.A. (Semester - I) (Old) (CBCS) Examination Oct/Nov-2019
DISCRETE MATHEMATICS

Day & Date: Wednesday, 20-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

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

1) If aRb & bRa → a = b, then the relation R is called as _____.
   a) antisymmetric   b) symmetric
   c) reflexive   d) transitive

2) If $F(x) = (x - 1)(x - 2)(x - 3)$ then $f(4) =$ _____.
   a) 6   b) 12
   c) 24   d) none of these

3) If $A \cap B = \emptyset$ then set $A \& B$ are _____ sets.
   a) Equal   b) Disjoint
   c) Both a & b   d) None of these

4) If $A = \{1, 2, 3, 5, 6\}$ then $|A| =$ _____.
   a) 4   b) 5
   c) 6   d) 7

5) If $A = \{, a, b, c\}$, $B = \{3, 4\}$ then $|A \times B| =$ _____.
   a) 8   b) 6
   c) 4   d) 2

6) A Graph containing No elements is known as _____.
   a) Regular Graph   b) Null Graph
   c) Simple Graph   d) Bipartite Graph

7) If A, B & C are subsets of a universal set ∪ then "Distributive property" is _____.
   a) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
   b) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
   c) Both a & b
   d) None of these

8) If A & B are two subsets of universal set ∪. Then "A⊕B" is known as _____.
   a) Union of set A & B
   b) Difference of set A & B
   c) Intersection of set A & B
   d) Symmetric Difference of set A & B

9) A set having only one element is known as _____.
   a) Singleton set   b) Binary set
   c) NULL set   d) Finite set

10) $P \lor \sim P$ is _____.
   a) Tautology   b) Contradiction
   c) Contigency   d) None of these

11) Let R be a relation from the set A to the set B. Then the set of all first co-ordinates of the ordered pairs of R is called _____ of R.
   a) Domain   b) Co-domain
   c) Range   d) None of these

12) An assertive sentence which is either true or false but not both at the same time is called _____.
   a) proposition   b) statement
   c) both a & b   d) none of these

13) If we have two set's A & B. If all the elements of the set A are in the set B and at least one element of B is not in A then set A is said to be the _____ set of the set B.
   a) Proper subset   b) Improper subset
   c) Super set   d) Unique set

14) A function can be represented as _____.
   a) Arrow Diagram   b) Tabular Form
   c) Formula Form   d) All of the above

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) If $A = \{3, 4, 6, 9, 11\}$ and $B = \{4, 9, 1, 7, 8\}$ Find $A \oplus B$.
   2) If $A = \{3, 5\}$ and $B = \{2, 4\}$ Find $A \times B$ and $B \times A$.
   3) Define Bipartite Graph.
   4) State De Morgan's Law.
   5) Define simple Graph and Null Graph.

B) Answer the following questions. (Any Two)   **06**
   1) Construct a truth table & determine whether the statement is tautology, contradiction or contigent.
      $\sim p \rightarrow \sim(p \land q)$
   2) Define power set and cardinality of a set. Give example.
   3) Graph representation by using Adjacency matrix.
      Let $A = \{p, q, r\}, B\{a, b, c, d,\}$. Find $A \times B$ and $B \times A$. Is Cartesian product commutative?

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Show the equivalence by preparing truth table.
      $(\sim p \lor q) \equiv \sim(p \land q) \rightarrow (\sim p \lor (\sim p \lor q))$
   2) Write Incidence matrix and Adjacency matrix for given Graph.
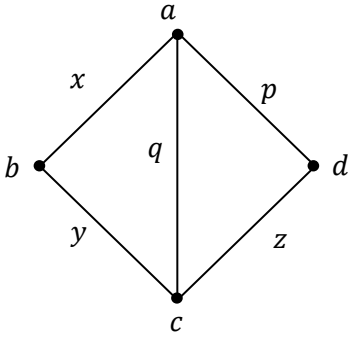
   3) Define Relation and equivalence Relation.

B) **Answer the following questions. (Any One)** 06
1) What is Function? Explain types of function.
2) What is set? Explain union, intersection and Difference operations on set.

Q.4 **A)** **Answer the following questions. (Any Two)** 10
1) Let A & B are two finite sets, which are disjoint them prove that
$$|A \cup B| = |A| + |B|$$
2) Let $\cup = \{1, 2, 3, 4, 5, 6, 7, 8\}$ is a universal set.
$A = \{1, 3, 5, 6\}$ and $B = \{2, 4, 6, 8\}$ are subsets of $\cup$ verify that
$(A \cup B)' = A' \cap B'$
3) If G_1 and G_2 are the given Graph's as.
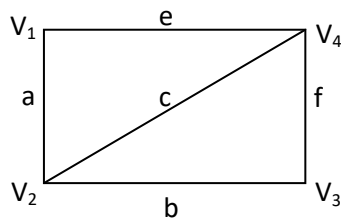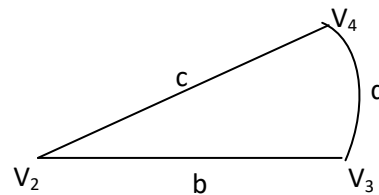
G_1 G_2

Find
1) $G_1 \cap G_2$
2) $G_1 \oplus G_2$

B) **Answer the following questions. (Any One)** 04
1) Check the validity of the following argument by using truth table.
$p \leftrightarrow q , q \vdash p$

2) Let $A = \{a, b, c, d\}$. Let R be the relation defined on the set A given by R as
$$R = \{(a, a), (a, b), (a, c), (a, d), (b, a), (b, d), (c, c), (d, d)\}$$
Draw Diagraph of relation R. Find In-degree & out degree for all vertices.

Q.5 **Answer the following questions. (Any Two)** 14
1) Let $R = \{(a, a), (a, b), (b, c), (a, c), (c, a), (c, b)\}$ be a relation on the set $A = \{a, b, c\}$ Find the transitive closure of R using warshall's Algorithm.
2) Let $\cup = \{1, 2, 3, 4, 5, 6, 7, 8, \}$
$A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$ Find.
1) $(A \cup B)'$
2) $(A \cap C)'$
3) $B - C$
4) $A \cap B$
5) A'
3) The students in a hostel were asked whether they had a TV set or a computer in their rooms. The result showed that 650 students had a TV set, 150 did not have TV set, 175 had a computer and 50 had neither a TV set nor a computer. Find the number of students who
1) live in the Hostel
2) have both a TV set and a computer.

Seat No.

B.C.A. (Semester - II) (CBCS) Examination Oct/Nov-2019
ADVANCED PROGRAMMING IN C

Day & Date: Friday, 08-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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)   We can assess structure members using _____ operators.
   a) .   b) ->
   c) Both a and b   d) None of these

2)   A preprocessor statement starts with _____ symbol.
   a) &   b) %
   c) #   d) @

3)   Passing parameters to _____ function is called as "command line" arguments.
   a) Main()   b) getch()
   c) clrscr()   d) getchar()

4)   In case of call by _____,operation performed on formal parameter affects on actual parameter
   a) Value   b) Pointer
   c) Address   d) Both b and c

5)   String ends with _____ character.
   a) #   b) \0
   c) $ d) .

6)   All the members of _____ has their own separate memory location.
   a) Structure   b) Union
   c) Array   d) Both b & c

7)   If there is any error while opening a file, fopen will return _____
   a) Positive Value   b) EOF
   c) NULL   d) Negative value

8)   _____ mode tells compiler to open a file in append mode.
   a) "r"   b) "w"
   c) "r+"   d) "a"

9)   For string handling functions _____ header file is used.
   a) string.h   b) dynamic.h
   c) alloc.h   d) runtime.h

10) _____ is a variable which holds memory location of another variable.
   a) Array   b) Structure
   c) Union   d) Pointer

11) 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

12) Which of the following is a Not 'C' preprocessor?
   a) #ifdef   b) #define
   c) #endif   d) #ifthen

13) _____ is user defined data type
   a) struct   b) union
   c) both a & b   d) none

14) _____ directive is used to declare constants in program.
   a) #include   b) #define
   c) #const   d) None

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) What is Preprocessor?
   2) How pointer is declared and initialized?
   3) What is random access and sequential access of file?
   4) What is macro?
   5) Write difference between fputc() and fprintf().

B) Write Notes. (Any Two)   **06**
   1) Table of string
   2) Self referential structure
   3) Chain of pointer

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Write a short note on command line argument.
   2) Explain strlwr() and strcmp() string handling functions with example.
   3) What is 'nested structure'? Explain with example?

B) Answer the following questions. (Any One)   **06**
   1) Explain pass by value and pass by pointer concept with example.
   2) Explain malloc() &calloc() function with example.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) Write a program to traverse entire string with its pointer.
   2) Explain pointer to array concept with example.
   3) Write a program that read entire data from file having name "biodata.doc"

B) Answer the following questions. (Any One)   **04**
   1) Write a short note on #error directives.
   2) What is 'typedef'? Explain with example.

Q.5 Answer the following questions. (Any Two)   **14**
   1) What is difference between structure and Union?
   2) What are the types of macros? Explain with example.
   3) Write a program to accept and display 5 students record.

Seat No.

B.C.A. (Semester – II) (CBCS) Examination Oct/Nov-2019
WEB TECHNOLOGY

Day & Date: Monday, 11-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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) _____ property defines the space between cells in a table.
   a) border   b) border-spacing
   c) border-style   d) none of these

2) What are the methods used to provide effects?
   a) Show()   b) Hide()
   c) Toggle()   d) All of these

3) How can you make a list that lists the items with numbers?
   a) OL   b) DL
   c) UL   d) List

4) What is the correct HTML for inserting a backgound image?
   a) Background img="background.gif"
   b) Img src="background.gif" background ⁄
   c) Body background= "background.gif"
   d) bgcolor = "background.gif"

5) In css what does "font-size" can be called as _____.
   a) Selector   b) Rule
   c) Property   d) Property-Name

6) Which of the following type of variable is visible only within a function where it is defined in Java script?
   a) global variable   b) local variable
   c) Both of the above   d) None of these above

7) In which year jQuery developed?
   a) 2001   b) 2004
   c) 2005   d) 2006

8) Which of the following is correct to write "Hello World" on the web page?
   a) System.out.println("Hello World")
   b) print("Hello World")
   c) document.write("Hello World")
   d) response.write("Hello World")

9) Is jQuery a library for client scripting or server scripting?
   a) Server scripting   b) Client scripting
   c) Both of these   d) None

10) In HTML tables table header is defined by _____.
   a) <th> tag   b) <tr> tag
   c) <td> tag   d) <t head> tag

11) Which jQuery method is used to hide selected elements?
   a) hidden()
   b) hide()
   c) visible(false)
   d) display(none)

12) Which of the following function of Array object sorts the elements of an array?
   a) toSource()
   b) sort()
   c) toString()
   d) unshift()

13) The following elements <header>, <footer>, <article>, <section> are the new elements in HTML5. These elements are called _____.
   a) Control attributes
   b) Semantic elements
   c) Graphic elements
   d) Multimedia elements

14) What is the correct sequence of HTML tags for starting a webpage?
   a) Head, Title, HTML
   b) Title, Head, HTML
   c) HTML, Head, Title
   d) None of these

Q.2 A) Explain the following in short. (Any Four)   **08**
   1) Singular and Paired Tag
   2) DOCYTPE
   3) Text Properties in CSS
   4) Get and Post Method
   5) DOM
   6) JQuery Selector

B) Write the answer of following questions. (Any Two)   **06**
   1) Explain Ordered List with Example.
   2) Explain Media Tag in HTMI 5.
   3) Explain Ids and Classes in CSS.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) What is Image Map? Explain Creating and implementing Image Map.
   2) Explain any 4 String function in JavaScript with proper Example.
   3) Explain types of Lists.

B) Answer the following questions. (Any One)   **06**
   1) Write a program using javascript to validate a number accepted through a text box is a prime no. or not?
   2) Explain Structure of HTML Document.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) Write a Jquery script to implement animation effect on inserted image.
   2) Explain Functions and its types in JavaScripts.
   3) Define CSS. Explain Types of CSS.

B) Answer the following questions. (Any One)   **04**
   1) Define JQuery. Explain Fading and Sliding Effects in Jquery.
   2) Explain Graphics in HTML 5.

Q.5 Write short note. (Any Two)   **14**
   a) For Loop in Javascript with example
   b) Need of JQuery
   c) HTML <input> tag
   d) Events in Javascript

Seat No.		**Set**	**P**

B.C.A. (Semester - II) (CBCS) Examination Oct/Nov-2019
SOFTWARE ENGINEERING

Day & Date: Thursday, 14-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 data Flow Diagram is the basic component of _____ system.
   a) Conceptual   b) Logical
   c) Physical   d) None of these

2) Which of the following system implementation approach should be used if you want to run the old system and the new system at the same time for a specified period?
   a) Direct   b) Pilot
   c) Parallel   d) Phased

3) The first step in Software Development Life Cycle is _____.
   a) Preliminary Investigation   b) System Design
   c) System Testing   d) System Coding

4) The Data flow diagram (DFD) shows _____.
   a) flow of data   b) processes
   c) areas where they are stored   d) All of these

5) In _____ aliases or synonyms are allowed when two or more entries show the same meaning.
   a) Data Flow Diagrams   b) Data Dictionary
   c) Data Table   d) Decision Table

6) Which of the following are the characteristics of a system?
   a) Organization   b) Interaction
   c) Interdependence   d) All of these

7) The most important feature of spiral model is _____.
   a) Risk management   b) Quality management
   c) Performance management d) Efficiency management

8) _____ is an agreement between system developer & the end user.
   a) Requirement anticipation   b) Requirement investigation
   c) Requirement specification d) Both a & c

9) _____ is a graphical description of a system's data and how the process transforms the data.
   a) System diagram   b) Detail flowcharts
   c) Data flow diagram   d) Data direction diagram

10) In which step of SDLC project termination could be done
   a) Design Phase   b) System Maintenance Phase
   c) Feasibility study Phase d) Coding Phase

11) The 'Big picture' diagram of a system is the _____.
   a) Logic diagram
   b) Block diagram
   c) System flowchart
   d) Program flowchart

12) Decision table is a combination of _____.
   a) Stubs and conditions
   b) Conditions and actions
   c) Input and output
   d) None of these

13) _____ ensures an internal consistency of data, retrieval, maintenance and stability.
   a) Normalization
   b) ER-diagram
   c) DFD
   d) None of these

14) Which one of the following is not a phase of Prototyping Model?
   a) Quick Design
   b) Coding
   c) Prototype Refinement
   d) Engineer Product

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) What is the purpose of HIPO chart?
   2) What is Zero level DFD?
   3) What is normalization?
   4) What is flowchart?
   5) Which are the types of decision table?

B) Write Notes on (Any Two)   **06**
   1) Characteristics of Software.
   2) Elements of the system.
   3) System Analysis.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Draw a Decision tree and limited entry table for following case study-
      A Regional Transport Office (RTO) is related with registration of vehicles. Mainly the vehicles are categorized as commercial and non-commercial. If the vehicle is non-commercial and its type is two wheeler then registration charges are Rs. 100, for three wheeler Rs. 150, for four wheeler Rs.200.For commercial type of vehicles Rs. 100 is added extra in registration charges.
   2) Explain Feasibility study in detail.
   3) What is DFD? Write advantages of DFD and explain different symbols used in DFD.

B) Answer the following questions. (Any One)   **06**
   1) What is System? Explain types of system in detail.
   2) Explain the steps of traditional approach to implementation.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) What is Data Dictionary? Explain the importance of DD.
   2) Explain the various roles played by the system analyst.
   3) Explain Prototyping Model in detail.

B) Answer the following questions. (Any One)   **04**
   1) Draw an ER-diagram for College Admission System.
   2) Design input screens for Library System.

Q.5 Answer the following questions. (Any Two)   **14**
   1) Define the term Entity, Attribute and Relationship. Explain types of relationship with example.
   2) Explain the various Fact finding techniques in detail.
   3) Draw the CLD and first level DFD for Mark sheet printing system

Seat No.

B.C.A. (Semester - II) (CBCS) Examination Oct/Nov-2019
DIGITAL ELECTRONICS

Day & Date: Saturday, 16-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 the correct alternatives given below: **14**

1) Octal to binary encoder circuit has number of _____ outputs.
    a) 2   b) 3
    c) 1   d) 4

2) In _____ mapping the address is divided into tag and index field.
    a) associative   b) set associative
    c) direct   d) none of these

3) The decimal 48 is equivalent to _____ BCD.
    a) 01001000   b) 1011
    c) 1101   d) 10

4) _____ has on chip cache memory.
    a) 8085   b) 8086
    c) 80286   d) 80486

5) In _____ level memory hierarchy splitted cache is used.
    a) two   b) three
    c) four   d) none of these

6) The _____ is acts as internal memory of CPU.
    a) RAM   b) ROM
    c) Register   d) None of these

7) In _____ method CPU is does not engaged in data transfer.
    a) DMA   b) polling
    c) interrupt driven   d) None of these

8) The output of _____ gate is high when two inputs are different.
    a) OR   b) AND
    c) EXOR   d) NOR

9) Address bus of 8086 Microprocessor _____ bit.
    a) 8   b) 16
    c) 20   d) 32

10) In K – map _____ sequence is used.
    a) BCD   b) binary
    c) gray   d) x-3

11) In Decimal to binary encoder _____ gate is used.
    a) NOT   b) OR
    c) AND   d) EXOR

12) In common cathode display all the cathodes are connected to _____.
   a) Vcc
   b) Vee
   c) ground
   d) none of these

13) Address used by programmer is called as _____ address,
   a) logical
   b) physical
   c) real
   d) none of these.

14) The IC 7400 _____Gate.
   a) AND
   b) OR
   c) NOR
   d) NAND

Q.2 A) Answer the following question.(Any Four)   **08**
   1) Draw three and four variavle K map?
   2) Define bus. What are their types?
   3) Draw the logic diagram of full adder.
   4) What is counter? Give their types.
   5) Explain HOLD and HLDA pin in 8086.

Q.2 B) Write Notes on (Any Two)   **06**
   1) Explain universal gates.
   2) Give the features of 8086.
   3) Compare Von Neumann and Harward memory architecture.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Explain half Adder by using K map.
   2) Explain associative mapping technique.
   3) Explain USB.

Q.3 B) Answer the following questions. (Any One)   **06**
   1) Write a note on three bit asynchronous counter.
   2) Write a note on paging mechanism in virtual memory.

Q.4 A) Answer the following questions.(Any Two)   **10**
   1) Explain polling method of data transfer.
   2) Differentiate between 80286 and 80486.
   3) What is memory hierarchy? Explain their types.

Q.4 B) Answer the following questions. (Any One)   **04**
   1) Write a note on pipeline concept.
   2) Explain decimal to binary encoder.

Q.5 Answer the following questions. (Any Two)   **14**
   a) Draw internal block diagram of 8086. Explain general purpose register of 8086 microprocessor.
   b) Explain DMA transfer technique.
   c) Explain register and memory stack.

Seat No.

B.C.A. (Semester - II) (CBCS) Examination Oct/Nov-2019
COMPUTER ORIENTED STATISTICS

Day & Date: Tuesday, 19-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of soundless calculator is allowed.
4) Graph paper will be supply on request.

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

1) _____ graph is used to locate the median.
   a) Histogram   b) Ogive curve
   c) Frequency curve   d) Frequency polygon

2) For perfect positive correlation, the value of r is _____.
   a) 1   b) -1
   c) -0.75   d) 0.75

3) For distribution mean is 20 & mode is 18 then median is _____.
   a) 14   b) 20
   c) 18   d) None of these

4) The mid-point of class 10-18 is _____.
   a) 10   b) 18
   c) 14   d) None of these

5) The line of regression of Y on X is _____.
   a) $Y - \bar{Y} = b_{YX}(X - \bar{X})$ b) $Y + \bar{Y} = b_{XY}(X + \bar{X})$
   c) $X - \bar{X} = b_{XY}(Y - \bar{Y})$ d) All of these

6) For the given set of observations 20,18,19,20,25,23,27 mode is _____.
   a) 20   b) 27
   c) 18   d) None of these

7) The correlation between rainfall & production of paddy is _____.
   a) Positive   b) Negative
   c) Zero   d) Perfect

8) _____ price index number is perfect.
   a) Laspeyre's   b) Paasche's
   c) Fisher's   d) All of these

9) Collecting the information from each member of the population is called as _____ method of collecting data.
   a) Sampling   b) Census
   c) Systematic   d) None of these

10) A coin is tossed two times. The probability of getting at least single head is _____.
   a) 1   b) 0
   c) 3/4   d) Can't say anything

11) If the upper limit of class is the lower limit of next class then classes are of type _____.
   a) Inclusive
   b) Exclusive
   c) Open-end
   d) None of these

12) If the equation of line of regression X on Y is 4X+3Y=18 then regression coefficient of it is _____.
   a) 3/4
   b) 4/3
   c) -3/4
   d) 1

13) If P(A) = 0.5, P(B) = 0.3 & if A,B are mutually exclusive events, Then $P(A \cap B) = $ _____.
   a) 1
   b) -1
   c) 0.15
   d) None of these

14) _____ can not be determined graphically.
   a) A.M.
   b) Median
   c) Mode
   d) All of these

Q.2 a) Answer the following questions. (Any Four)   **08**
   1) Define A.M.
   2) State classical definition of probability.
   3) If Cov(X,Y) = 25, V(X) = 36 & V(Y) = 25 find b_{YX}
   4) Find coefficient of range from following data
      10,14,12,18,20,22,21
   5) If $\sum p_1 = 130$, $\sum p_0 = 190$ & $\sum p_1 q_1 = 200$ find appropriate price index number.

b) Write note. (Any Two)   **06**
   1) Simple random sampling method
   2) Merits and Demerits of range
   3) Classification

Q.3 a) Answer the following questions. (Any Two)   **06**
   1) Calculate A.M. from following frequency distribution.

X	2	4	6	8	10
f	3	5	7	4	2

   2) Given $n = 10$, $\bar{X} = 40$, $\bar{Y} = 50$ & $b_{YX} = 0.8511$ & $b_{XY} = 1.2030$. Find equations of lines of regressions.
   3) Define :
      i) Variance
      ii) Fishers Index number

b) Answer the following questions. (Any One)   **06**
   1) Construct price index number by:
      i) Simple aggregate method
      ii) Simple average of price relative method from the following data

Commodity	A	B	C	D
P_1	10	12	11	9
P_0	8	10	8	6

   2) Let n=8, $\sum X = 60$, $\sum Y = 40$ & $\sum X^2 = 524$, $\sum Y^2 = 450$ & $\sum XY = 365$ find correlation coefficient between X &Y.

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

1) Find missing frequency of the class 15-20 in the following incomplete frequency distribution. If mode=18

X	5-10	10-15	15-20	20-25	25-30
f	3	7	------	8	4

2) What is dispersion? Distinguish between absolute & relative measures of dispersion.

3) A box contains 20 balls of which 8 are red. Two balls are drawn at randam without replacement. Find probability of getting balls of alternate colours.

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

1) If $P(A) = 0.70, P(A\cup B) = 0.80$ & $P(B) = 0.50$
Find
i) $P(A\cap B)$
ii) $P(A^c)$.

2) The equation of lines of regression are $4X + 5Y = 35$ & $2X + 10Y = 70$. Find mean of X & mean of Y.

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

a) Draw the histogram from the following data. Hence determine mode.

Classes	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	10	15	20	8	4

b) Explain scatter diagram method of studying correlation between two variables.

c) Find the C.V. for the date given bellow.

X	10	12	14	17	20
f	2	6	8	3	1

Seat No.

B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
FUNDAMENTALS OF COMPUTER (Paper – I)

Day & Date: Saturday, 09-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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) ALU is _____.
    a) Arithmetic Logic Unit   b) Array Logic Unit
    c) Application Logic Unit   d) None of above

2) Chief component of first generation computer was _____.
    a) Transistors   b) Vacuum Tubes
    c) Integrated Circuits   d) None of above

3) A computer consists of _____.
    a) A central processing unit   b) A memory
    c) Input and output unit   d) All of the above

4) A byte consists of _____.
    a) One bit   b) Four bits
    c) Eight bits   d) Sixteen bits

5) Input Devices that use a special ink that contains magnetizable particles of iron oxide are _____.
    a) Optical disks   b) Magnetic disks
    c) MICR   d) Magnetic drives

6) The brain of any computer system is _____.
    a) ALU   b) Memory
    c) CPU   d) None of the above

7) Bluetooth is an example of _____.
    a) personal area network   b) local area network
    c) virtual private network   d) none of the mentioned

8) _____ printer is impact printer.
    a) dot matrix   b) ink jet
    c) laser   d) none of these

Q.2 Attempt any four of the following question.   **08**
    a) Long form for EPROM and MICR.
    b) What are the limitations of computer?
    c) Long form of ARPA and SMPS.
    d) What are the communication components?
    f) Define Firmware and protocol.
    g) Define computer and Internet.

Q.3 **Write short notes any two.** 08
   a) Explain evaluation of computer.
   b) Explain keyboard in detail.
   c) Explain modem in detail.

Q.4 **Attempt any two of the following question.** 08
   a) Explain Characteristics of computer.
   b) Differentiate between RAM and ROM.
   c) Explain LAN, MAN, WAN.

Q.5 **Attempt any one of the following question.** 08
   a) Explain Block diagram of computer.
   b) Define topology and explain different types of topologies.

Seat No.

B.C.A. (Semester - III) (CBCS) Examination Oct/Nov-2019
DATA STRUCTURE USING 'C'

Day & Date: Saturday, 09-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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 postfix form of A*B+C/D is _____.
   a) *AB/CD+   b) AB*CD/+
   c) A*BC+/D   d) ABCD+/*

2) Which type of traversal of binary search tree outputs the value in sorted order?
   a) Pre-order   b) In-order
   c) Post-order   d) None of these

3) In what kind of storage we can easily insert, delete, concatenate and rearrange substrings?
   a) Queue   b) Linked List
   c) Stack   d) Array

4) Which of the following is not application of stack?
   a) Reversal of string
   b) Evaluation of Postfix expression
   c) CPU scheduling
   d) Matching parenthesis in an expression

5) Node of _____ linked list contains two parts.
   a) Singly   b) Doubly
   c) Both a and b   d) None of these

6) To sort '3' elements bubbles sort requires maximum _____ successful swapping.
   a) 3   b) 4
   c) 2   d) 1

7) A binary tree whose every node has either zero or two children is called.
   a) Complete binary tree   b) Binary search tree
   c) Extended binary tree   d) None of above

8) Complexity of linear search algorithm is _____.
   a) O(n)   b) O(logn)
   c) O(n2)   d) O(n logn)

9) Merge sort uses _____.
   a) Divide-and-conquer   b) Backtracking
   c) Heuristic approach   d) Greedy approach

10) In circular linked list, insertion of node requires modification of?
    a) One pointer   b) Two pointer
    c) Three pointer   d) None

11) The data structure required for Breadth First Traversal on a graph is?
   a) Stack
   b) Array
   c) Queue
   d) Tree

12) In doubly linked lists, traversal can be performed?
   a) Only in forward direction
   b) Only in reverse direction
   c) In both directions
   d) None

13) Which of the following data structure is linear data structure?
   a) Trees
   b) Graphs
   c) Arrays
   d) None of above

14) To represent hierarchical relationship between elements, which data structure is suitable?
   a) Deque
   b) Linked list
   c) Tree
   d) All of above

Q.2 A) Answer the following questions. (Any Four) 08
   1) List out applications of tree data structure.
   2) List out application of stack data structure.
   3) Why sorting is necessary?
   4) Why circular queue is better than linear queue?
   5) What is complete binary tree?

B) Write Notes. (Any Two) 06
   1) Radix sort
   2) Strictly Binary tree
   3) Double ended queue.

Q.3 A) Answer the following questions. (Any Two) 08
   1) Explain AVL tree rotations.
   2) What is Singly Linked list and Explain any three operation.
   3) Write a program to implement Input Restricted Deque (IRD) with its basic operations.

B) Answer the following questions. (Any One) 06
   1) Write a program of insertion sort technique.
   2) Explain Dubly Linked list.

Q.4 A) Answer the following questions. (Any Two) 10
   1) Write a program to implement stack using array.
   2) Write a program to implement circular queue with its basic operations.
   3) Explain Priority queue.

B) Answer the following questions. (Any One) 04
   1) Explain difference between stack and queue.
   2) Explain linear search method with example.

Q.5 Answer the following questions. (Any two) 14
   1) What is tree traversal? Explain all tree traversal methods with example.
   2) Explain indexed sequential search.
   3) What is binary search tree? And explain following operations of binary search tree.
      i) Count_total()
      ii) count_leaf()

Seat No.

B.C.A. (Semester - III) (CBCS) Examination Oct/Nov-2019
NETWORKING & DATA COMMUNICATION

Day & Date: Wednesday, 13-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 Choose correct alternatives.   **14**

1) Geometric arrangement of devices on the network is called _____.
   a) Protocols   b) Topology
   c) Trailer   d) LAN

2) Which of the following is the fastest communication channel?
   a) Micro wave   b) Optical fiber
   c) Radio wave   d) None of the above

3) The first network that has planted the seeds of internet was
   a) NSF net   b) V net
   c) ARPANET   d) I net

4) In OSI network architecture, the routing is performed by _____.
   a) Data link layer   b) Network layer
   c) Session layer   d) Transport layer

5) Hub is associated with _____ network.
   a) Bus   b) Star
   c) Ring   d) Mesh

6) Which of following provides reliable communication?
   a) TCP   b) IP
   c) UDP   d) All of the above

7) DNS is the abbreviation of
   a) Dynamic Name System   b) Dynamic Network System
   c) Domain Name System   d) Domain Network Service

8) Which one of the following is not a function of network layer?
   a) routing   b) inter-networking
   c) congestion control   d) none of the mentioned

9) Data flow between two devices can occur in a _____ way.
   a) simplex   b) half-duplex
   c) full-duplex   d) all of the above

10) Which one of the following is the multiple access protocol for channel access control?
   a) CSMA/CD   b) CSMA/CA
   c) Both (a) and (b)   d) None of these

11) The process-to-process delivery of the entire message is the responsibility of the _____ layer.
   a) Transport   b) Application
   c) Physical   d) Network

12) As frequency increases, the period _____.
   a) increases
   b) Decreases
   c) doubles
   d) remains the same

13) IPV4 Address is _____.
   a) 8 bit
   b) 16 bit
   c) 32 bit
   d) 64 bit

14) Electronic mail uses this Application layer protocol _____.
   a) SMTP
   b) HTTP
   c) FTP
   d) SIP

Q.2 A) Answer the following (Any Four)   **08**
1) Define Error? State types of error.
2) Define Amplitude and Bandwidth.
3) What are the elements of data communication?
4) RTP and HTTP stands for
5) What is the function of repeater?

B) Write Notes on (Any Two)   **06**
1) Modem
2) Hamming Distance
3) POP

Q.3 A) Answer the following (Any Two)   **08**
1) Explain Protocol Hierarchies.
2) Explain FTP in detail.
3) Explain data flow in detail.

B) Answer the following (Any One)   **06**
1) Explain modulation in detail.
2) Explain Distance Vector Routing.

Q.4 A) Answer the following (Any Two)   **10**
1) Explain Satellite Communication.
2) Explain Parity Check.
3) Explain service primitives.

B) Answer the following (Any One)   **04**
1) Explain Fiber optic cable in detail.
2) Explain Connection oriented and connection less services in detail.

Q.5 Answer the following (Any Two)   **14**
a) Explain ISO-OSI Reference model.
b) Explain ALOHA in detail.
c) Define transmission mode? Explain Parallel and Serial transmission mode.

Seat No.

B.C.A. (Semester - III) (CBCS) Examination Oct/Nov-2019
DBMS WITH ORACLE

Day & Date: Friday, 15-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

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

1)   The overall design of the database is known as _____.
  a) Schema   b) Instance
  c) Instant   d) None of above

2)   _____ model describes entities, relationship and attributes.
  a) Functional   b) Relational
  c) Network   d) E-R model

3)   The term_____is used to refer to a row.
  a) attribute   b) field
  c) tuple   d) instance

4)   _____ of the following attribute can be taken as a primary key.
  a) Name   b) Roll no
  c) Class   d) Address

5)   Transaction management ensures atomicity and _____ properties.
  a) Integrity   b) Durability
  c) Abstraction   d) None of these

6)   Specialization is _____ process.
  a) Bottom up   b) Top Down
  c) Left Right   d) None of Above

7)   _____ is a column or set of columns in a table that uniquely identifies rows in table.
  a) Reference key   b) Foreign key
  c) Primary key   d) None of Above

8)   _____ property is 'all or nothing' property.
  a) Atomicity   b) Consistency
  c) Isolation   d) Durability

9)   In _____ states, all transactions are permanently saved to the database.
  a) Active   b) Failed
  c) Aborted   d) Committed

10)   Insert statement is _____ statement.
  a) DML   b) DDL
  c) DCL   d) None of Above

11)   _____ join condition contains an equality operator.
  a) Cross Join   b) Cartesian
  c) Equijoin   d) None of Above

12) Which of the following is not a typical trigger action?
   - a) Delete
   - b) Insert
   - c) Update
   - d) Select

13) The _____ constraint can only be applied at column level.
   - a) Foreign key
   - b) Primary key
   - c) Not null
   - d) None of Above

14) A PL/SQL blocks begins with _____ section.
   - a) Exception
   - b) Start
   - c) Main
   - d) Declare

Q.2 A) Answer the following questions. (Any Four) 08
   1) What is serializability?
   2) What are the advantages of DBMS?
   3) List database users.
   4) What is syntax of for loop?
   5) What is Exception?

B) Write Notes. (Any Two) 06
   1) Schemas and instances
   2) States of transaction
   3) Relation, tuple and domain.

Q.3 A) Answer the following questions. (Any Two) 08
   1) What is DDL? Explain DDL commands with example.
   2) Write a PL/SQL block to check whether number is odd or even.
   3) Write a note on ACID property.

B) Answer the following questions. (Any One) 06
   1) What is a view? Explain with example.
   2) What are primary key and foreign key constraints? How to give primary key and foreign key to table level explain with example.

Q.4 A) Answer the following questions. (Any Two) 10
   1) What is procedure? Explain with example.
   2) Explain logical operators used in SQL.
   3) What is DBMS? Explain Query processor of database system.

B) Answer the following questions. (Any One) 04
   1) Explain different codd's rules in details.
   2) What are the limitations of traditional file system?

Q.5 Answer the following questions. (Any Two) 14
   - **a)** What is trigger? Explain types of trigger with example.
   - **b)** What is join? Explain types of join with example.
   - **c)** What is a cursor? Explain explicit cursor and its attributes with example.

Seat
No.

B.C.A. (Semester - III) (CBCS) Examination Oct/Nov-2019
OOP WITH C++

Day & Date: Monday, 18-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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 is not the member of class?
   a) Static function   b) Friend function
   c) Pure virtual function   d) Virtual function

2) Which of the following is not a type of constructor?
   a) Copy constructor   b) Friend constructor
   c) Default constructor   d) Parameterized constructor

3) The term _____ means the ability to take many forms.
   a) Inheritance   b) Polymorphism
   c) Member function   d) Encapsulation

4) C++ was originally developed by _____.
   a) Clocksin and Melish   b) Donald E.Knuth
   c) Sir Richard Hadlee   d) Bjarne Stroustrup

5) A class is _____ datatype.
   a) primitive   b) derived
   c) user-defined   d) all of these

6) A class is a collection of _____ and _____.
   a) data-members & member functions
   b) data-members, member functions and main()
   c) data-members, member functions, main() and include statements
   d) None of these

7) A _____ is a special method used to initialize the instance variable of a class.
   a) Member function   b) Destructor
   c) Constructor   d) Structure

8) Which of the following operator is overloaded for object cout?
   a) >>   b) <<
   c) +   d) =

9) Which of the following approach is adapted by C++?
   a) Top-down   b) Bottom-up
   c) Right-left   d) Left-right

10) Which of the following cannot be used with the keyword virtual?
    a) class   b) member functions
    c) constructor   d) destructor

11) Inline Functions are invoked at _____.
   a) Run time   b) Compile time
   c) Depends on how it is invoked   d) Both b and c above

12) Which of these keywords are access specifiers?
   a) near and far   b) opened and closed
   c) table and row   d) private and public

13) An Object can be declared prior to the class definition.
   a) True   b) False

14) A copy constructor takes _____.
   a) no argument   b) one argument
   c) two arguments   d) arbitrary no. of arguments

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) Write Syntax of Class Definition.
   2) What is Pure Virtual Function?
   3) What is c++ Tokens?
   4) What is this pointer?
   5) Write Difference between Structure and class.

B) Write Notes. (Any Two)   **06**
   1) What is Constructor?
   2) Explain the Inheritance?
   3) Describe Operators & Expressions.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Explain Reference Variable With Example.
   2) Explain 'Function Overloading' with example.
   3) Difference between procedure oriented programming and Object Oriented Programming.

B) Answer the following questions. (Any One)   **06**
   1) Write a C++ Program to check given number is Palindrome or not using default Constructor.
   2) Write a program to show Constructors overloading.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) Explain abstract class with example.
   2) Explain basic concepts of oops.
   3) Write rules for implementing Operator Overloading.

B) Answer the following questions. (Any One)   **04**
   1) What is Difference between function overloading & overriding?
   2) Explain Access Specifires in detail?

Q.5 Answer the following questions. (Any Two)   **14**
   a) Write a program to input the two file name & copy one file into another.
   b) Write a program in c++ to implement any one unary operator overloading with member function.
   c) Write an exception handling program on "Division by Zero condition" exception.

Seat No.	

B.C.A. (Semester - III) (CBCS) Examination Oct/Nov-2019
OPERATIONS RESEARCH

Day & Date: Wednesday, 20-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
                2) Figures to the right indicate full marks.
                3) Use of soundless calculator is allowed.
                4) Graph paper will be supply on request.

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

1) How many methods are there to find IBFS of TP?
   a) 4   b) 3
   c) 2   d) 1

2) For solving AP which method is used?
   a) Hungarian   b) VAM
   c) Gauss's   d) none of these

3) Collection of all feasible solutions is known as _____.
   a) Total feasible solution   b) Combined solution
   c) Feasible solutions   d) None of these

4) If total supply is not equal to total demand then TP is said to be _____.
   a) balanced   b) unbalanced
   c) compressed   d) none of these

5) Every LPP is associated with another LPP is called as _____.
   a) Dual   b) Duel
   c) Primal   d) All of these

6) In the optimality test of TP if all $d_{ij} \geq 0$ with at least one $d_{ij} = 0$ then solution under test is _____.
   a) Optimal   b) Not optimal
   c) Alternative optimal solution   d) Best solution

7) An AP is a special type of _____.
   a) LPP   b) TP
   c) AP   d) None of these

8) If one of the constraint is '≤' type then multiplying it by _____ on both sides we can convert it into '≥' type.
   a) 0   b) -1
   c) +m   d) -m

9) The objective of TP is _____.
   a) maximize transportation cost   b) minimize transportation cost
   c) maximize the profit   d) none of these

10) Which of the following method is used if LPP has exactly two variables.
   a) Eulerian method   b) VAM
   c) graphical   d) None of these

11) The LPP is said to be in canonical form if objective function is of _____ type.
   a) minimize
   b) maximize
   c) optimize
   d) none of these

12) In IBFS of TP number of occupied cells must be _____.
   a) m-n+1
   b) m-n-1
   c) m+n-1
   d) mn-1

13) _____ method is better to find IBFS of TP.
   a) Least cost
   b) VAM
   c) North west corner
   d) All of these

14) The LPP is said to be in standard form if all the constraints are _____Type except non negative constraints.
   a) =
   b) ≤
   c) ≥
   d) ≥ or ≤

Q.2 A) Attempt any four of the following questions.   **08**
   1) Define balanced AP.
   2) What is feasible region in LPP?
   3) Define surplus variable in LPP.
   4) How we can convert a AP of maximization type to minimization type? Explain.
   5) Define slack variable.

B) Attempt any two of the following questions.   **06**
   1) Write the following LPP in standard form,
      Maximize, $Z = 55x + 29y$
      Subject to $3x + 7y \leq 10$,
      $4x + y \leq 15$,
      $y \leq 4$,
      $x \geq 0$ & $y \geq 0$
   2) Give the LPP formulation of TP.
   3) Write the note on degeneracy of TP

Q.3 A) Attempt any two of the following questions.   **08**
   1) A toy manufacturer company produces two types of toys A & B. each type of toy A requires 3 minutes for cutting 2 minutes for assembles, each type of toy B requires 5 minutes for cutting 4 minutes for assembles. Only 180 minute for cutting 160 minutes for assembles time are available per day. The profit on selling 1 toy of A & one toy of B are Rs 10 & RS 20 respectively. Formulate this problem as LPP so as to maximize the profit.
   2) Distinguish between TP & AP.
   3) Write the dual of following LPP.
      Minimize $Z = 2x+3y+5z$ subjected to,
      $2x+3y-4z \geq 4$
      $-x+4y+5z \geq 5$
      $x,y,z \geq 0$

B) Answer the following questions. (Any One) 06
  1) Define
      a) Feasible solution &
      b) Decision variable of LPP.
      Write the tabular form of TP with 3 factories & 4 warehouses.
  2) Solve the following AP for maximize the profit by Hungarian method.

$$\begin{array}{c} & P & Q & R & S \\ \begin{array}{c} A \\ B \\ C \\ D \end{array} & \begin{bmatrix} 35 & 27 & 28 & 37 \\ 28 & 34 & 29 & 40 \\ 35 & 24 & 32 & 33 \\ 24 & 32 & 25 & 82 \end{bmatrix} \end{array}$$

Q.4 A) Answer the following questions. (Any Two) 10
  1) Solve the following AP to minimize the cost.

$$\begin{array}{c} & A & B & C & D \\ \begin{array}{c} P \\ Q \\ R \\ S \end{array} & \begin{bmatrix} 15 & 13 & 14 & 17 \\ 11 & 12 & 15 & 13 \\ 13 & 12 & 10 & 11 \\ 15 & 17 & 14 & 16 \end{bmatrix} \end{array}$$

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

	W_1	W_2	W_3	W_4	a_i
F_1	190	300	500	100	70
F_{2j}	700	300	400	600	90
F_3	400	100	600	200	180
b_j	50	80	70	140	

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

B) Answer the following questions. (Any One) 04
  1) Find IBPS of following TP by north west corner method.

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

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

Q.5 Answer the following questions. (Any Two) 14
  1) Explain Hungarian method to solve A. P.
  2) Solve by graphical method.
      Maximize, Z = 9x + 13y
      Subject to 2x + 3y ≤ 18,
                 2x + y ≤ 10,
                 x ≥ 0 & y ≥ 0
  3) Find the optimum solution of following IBFS by MODI method.

	D_1	D_2	D_3	a_i
O_1	⑨ 13	15 ⑧	16	17
O_2	⑤ 7	11	2 ⑦	12
O_3	19	20	9 ⑯	16
b_j	14	8	23	45

Seat No.

B.C.A. (Semester - IV) (CBCS) Examination Oct/Nov-2019
SOFTWARE TESTING

Day & Date: Friday, 08-11-2019   Max. Marks: 70
Time: 08:00 AM To 10:30 AM

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 not a Software Development Life Cycle Phase?
      a)   Requirements Gathering   b)   Coding
      c)   Test Closure   d)   Testing

2)   What types of errors can be uncovered by Black-Box and White-Box Testing?
      a)   Logic errors   b)   Performance errors
      c)   Behavioral errors   d)   None of these

3)   Which of the following comes under the Control Structure Testing?
      a)   Condition testing   b)   Loop testing
      c)   Data Flow Testing   d)   All of these

4)   User Acceptance testing is a type of _____.
      a)   White box testing   b)   Black box testing
      c)   System testing   d)   None of these

5)   Which of the following is not a part of test plan?
      a)   Scope   b)   Mission
      c)   Objective   d)   Risk

6)   _____ is not a Software Test Life Cycle Phase?
      a)   Requirements Gathering   b)   Test Planning
      c)   Test Closure   d)   Test Design

7)   Which are the following characteristics of Exploratory Testing?
      a)   Minimum planning and maximum execution
      b)   Useful in situations with poor specification and limited time
      c)   Both A and B
      d)   None of these

8)   Testing is done without planning and documentation is called _____.
      a)   Unit testing   b)   Retesting
      c)   Adhoc testing   d)   Regression testing

9)   In the V model, testing starts in parallel with the development.
      a)   True   b)   False

10)   Which is not a part of Decision Table?
      a)   Rule portion   b)   Driver portion
      c)   Condition portion   d)   Action portion

11) Which is the following example of load testing?
    a) Downloading large contents from the internet.
    b) Running multiple applications on a computer or server simultaneously.
    c) Printing large document using printer in a queue.
    d) All the above

12) Which of the following statements is true about reviews?
    a) Reviews are the least effective way of testing code.
    b) Reviews cannot be performed on user requirements specifications.
    c) Reviews are unlikely to find faults in test plans.
    d) Reviews should be performed on specifications, code, and test plans.

13) Which of the following requirements is testable?
    a) The system shall be user friendly.
    b) The response time shall be less than one second for the specified design load.
    c) The safety-critical parts of the system shall contain zero faults.
    d) The system shall be built to be portable.

14) Test cases are designed during _____.
    a) Test recording   b) Test planning
    c) Test configuration   d) Test specification

Q.2 A) Answer the following questions. (Any Four)   **08**
    1) What are the drawbacks of waterfall model?
    2) Define Error guessing.
    3) What are the phases of testing?
    4) What are the objectives of system testing?
    5) What is the use Loop Testing?

B) Write Notes. (Any Two)   **06**
    1) Advantages of Performance Testing.
    2) Distinguish between Alpha & Beta Testing.
    3) Need of testing

Q.3 A) Answer the following questions. (Any Two)   **08**
    1) What is stress testing? Why stress testing is needed? Explain with example.
    2) Explain Inspection and Walkthrough method.
    3) Define following terms-
        a) Error
        b) Fault
        c) Bug
        d) Failure

B) Answer the following questions. (Any One)   **06**
    1) What is Integration testing? Discuss Top-down and bottom-up Integration Testing.
    2) Define Test Summary Report. Explain contents of a Test summary report.

Q.4 A) Answer the following questions. (Any Two)   **10**
1) What is white box testing? How decision coverage is differ from statement coverage?
2) What is Requirement Traceability Matrix? How to prepare Requirement Traceability Matrix.
3) What are the advantages of smoke testing? How Smoke Testing works. Explain with example.

B) Answer the following questions. (Any One)   **04**
1) Explain Software Prototyping Model.
2) Explain Path Testing with example.

Q.5 Answer the following questions. (Any Two)   **14**
1) Explain Defect Life Cycle.
2) Explain Regression Testing with its types.
3) What is Test Case? Explain Test Case Template suitable with example.

Seat No.		**Set**	**P**

B.C.A. (Semester – IV) (CBCS) Examination Oct/Nov-2019
PYTHON

Day & Date: Monday, 11-11-2019   Max. Marks: 70
Time: 08:00 AM To 10:30 AM

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) Evaluate the expression given below if A= 16 and B = 15.
A % B // A
  a) 0.0   b) 0
  c) 1.0   d) 1

2) Which of the following operators has its associativity from right to left?
  a) +   b) //
  c) %   d) **

3) Which of the following is the truncation division operator?
  a) /   b) %
  c) //   d) |

4) To place a button in a specified row and column in its parent container, use _____.
  a) pack manager   b) grid manager
  c) place manager   d) flow manager

5) Which block are executed irrespective of whether there is an exception or not?
  a) try   b) except
  c) finaly   d) all of these

6) What is the output of the following?
Str= 'Hello'
print(s[:3])
  a) hello   b) Hel
  c) Error   d) ello

7) Which method returns True if all the characters in the string are digits?
  a) digit()   b) isdigit()
  c) alldigit()   d) digits()

8) Which of the following is the use of id() function in python?
  a) Id returns the identity of the object
  b) Every object doesn't have a unique id.
  c) both a) and b).
  d) None of the mentioned

9) Which of the following functions results in case insensitive matching?
  a) re.A   b) re.U
  c) re.I   d) re.X

10) Which of the following statement are correct for declare the dictionary in python?
   a) d=['rollno':'name']
   b) d=['rollno','name']
   c) d={'rollno':'name'}
   d) d=('rollno','name')

11) Which collection data type represents a group of elements arranged in the form of key-value pairs?
   a) List
   b) Set
   c) Tuple
   d) Dictionary

12) Which one of the following is not attributes of file?
   a) closed
   b) softspace
   c) rename
   d) mode

13) Multi lined comment can be given inside _____ quotes.
   a) single
   b) double
   c) triple
   d) all of these

14) In python, the anonymous functions are declared by using _____ keyword.
   a) Lambda
   b) anonymous
   c) function
   d) all of these

Q.2 A) Answer the following question. (Any Four) 08
   1) What is module?
   2) Explain Global and local variables.
   3) What is File?
   4) List out advantages of GUI?
   5) What is Exception?

B) Write short notes. (Any Two) 06
   1) Type conversion
   2) Spinbox Widget
   3) Tuples

Q.3 A) Answer the following question. (Any Two) 08
   1) Explain features of python.
   2) Explain Math module in details.
   3) Write a program to check given number is Armstrong or not.

B) Answer the following question. (Any One) 06
   1) What is exception? Explain types of exception.
   2) Explain List and methods of List with example.

Q.4 A) Answer the following question. (Any Two) 10
   1) What is function and Explain function parameter in details?
   2) Explain technique to create, update and delete dictionary items.
   3) Write a program to drawn the following shapes on canvas:
      i. circle
      ii. square
      iii. rectangle
      iv. line

B) Answer the following question. (Any One) 04
   1) Write a program to insert employee information such eid, ename, salary, etc into employee Table.
   2) Explain Time module in details.

Q.5 **Answer the following question. (Any Two)** **14**
   a) Explain any five widgets with example.
   b) Explain condition and looping statements with example.
   c) Write a program to count number of words, lines and characters which is stored into file.

Seat No.	

B.C.A. (Semester - IV) (CBCS) Examination Oct/Nov-2019
OPERATING SYSTEM

Day & Date: Thursday, 14-11-2019　　　　　　　　　　　Max. Marks: 70
Time: 08:00 AM To 10:30 AM

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 binary semaphore _____.
   a) Has the values one or zero
   b) Is essential to binary computers
   c) Is used only for synchronization
   d) Is used only for mutual exclusion

2) The number of processes completed per unit time is known as _____.
   a) Output　　　　　　　　　　　b) Throughput
   c) Efficiency　　　　　　　　　　d) Capacity

3) Short-term scheduler executes more frequently than long-term scheduler.
   a) True　　　　　　　　　　　　b) False

4) Which of the following do not belong to queues for processes?
   a) Job queue　　　　　　　　　b) PCB queue
   c) Device Queue　　　　　　　　d) Ready Queue

5) _____ is a logical extension of time sharing operating system.
   a) Real time　　　　　　　　　　b) Multiprocessing
   c) Distributed　　　　　　　　　d) Multiprogramming

6) The starvation problem faced in _____ scheduling algorithm.
   a) FCFS　　　　　　　　　　　b) SJF
   c) Priority　　　　　　　　　　d) RR

7) FIFO Scheduling is _____.
   a) Non Preemptive Scheduling　　b) Dead Line Scheduling
   c) Preemptive Scheduling　　　　d) None of these

8) _____ is also known as 'Roll out' and 'Roll in'.
   a) Process　　　　　　　　　　b) Swapping
   c) Both a) and b)　　　　　　　d) None

9) The Bankers algorithm is used to deadlock avoidance.
   a) True　　　　　　　　　　　　b) False

10) _____ control the degree of multiprogramming.
   a) Compiler　　　　　　　　　　b) CPU
   c) Long term scheduler　　　　　d) Ready queue

11) The Bleady's anomaly is related to _____ page replacement algorithm.
   a) FIFO　　　　　　　　　　　b) LRU
   c) Optimal　　　　　　　　　　d) None of these

12) Physical memory is divided into fixed size blocks called _____.
    a) frames   b) pages
    c) backing store   d) None of these

13) _____ file is saved with .obj extension.
    a) text   b) batch
    c) object   d) excel

14) In segmentation logical memory is divided into _____.
    a) pages   b) frames
    c) blocks   d) segments

Q.2 A) Answer the following questions. (Any Four)   **08**
1) What is file? List out the attributes of file.
2) What is thread? List out types of thread.
3) What is Fragmentation? List out types of fragmentation.
4) List out scheduling criteria.
5) Define semaphore and synchronization?

B) Write Notes. (Any Two)   **06**
1) Life Cycle of process
2) Types of Scheduler
3) Functions of operating system

Q.3 A) Answer the following questions. (Any Two)   **08**
1) Consider the following example. Implement the FCFC Scheduling algorithm.

Process	Burst Time
P1	15
P2	8
P3	5

    i) Draw the Gantt chart
    ii) Calculate the average waiting time
    iii) Calculate the turnaround time
2) Explain segmentation in detail.
3) Define the term process? Explain process control block in detail.

B) Answer the following questions. (Any One)   **06**
1) What is System Call? Explain types of System Calls.
2) Explain the necessary conditions of deadlock.

Q.4 A) Answer the following questions. (Any Two)   **10**
1) Define the Swapping? Explain the Swapping in detail.
2) What is directory? State and explain various directory structures.
3) Explain services provided by Operating System.

B) Answer the following questions. (Any One)   **04**
1) Explain the all types of files in details.
2) Explain resource allocation graph with example.

Q.5 Answer the following questions. (Any Two)   **14**
1) What is page replacement algorithm? Write the working of FIFO page replacement algorithm with example.
2) Define Operating System. Explain any three types of Operating System.
3) Explain banker's algorithm with example.

Seat No.

B.C.A. (Semester - IV) (CBCS) Examination Oct/Nov-2019
ADVANCED WEB TECHNOLOGY

Day & Date: Saturday, 16-11-2019   Max. Marks: 70
Time: 08:00 AM To 10:30 AM

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) _____ used to provide comment in PHP.
   a) //
   b) #
   c) /* */
   d) All of these

2) Which of the following php statement/statements will store 111 in variable num?
   i) int $num = 111;
   ii) int mum = 111;
   iii) $num = 111;
   iv) 111 = $num;
   a) Both i) and ii)
   b) All of the mentioned
   c) Only iii)
   d) Only i)

3) What will be the output of the following php code?
   ```php
   <?php
   $num = 1;
   $num1 = 2;
   print $num . "+". $num1;
   ?>
   ```
   a) 3
   b) 1+2
   c) 1.+.2
   d) Error

4) Which SQL statement is used to update data is a database?
   a) MODIFY
   b) SAVE AS
   c) SAVE
   d) UPDATE

5) _____ operator is used to concatenate two strings in PHP.
   a) . (dot)
   b) + (plus)
   c) & (ampersand)
   d) || (pipe)

6) Which of the following are correct ways of creating an array?
   i) state[0] = "karnataka";
   ii) $state[] = array("karnataka");
   iii) $state[0] = "karnataka";
   iv) $state = array("karnataka");
   a) iii) and iv)
   b) ii) and iii)
   c) only i)
   d) ii), iii) and iv)

7) Which one of the following is the right way to invoke a method?
   a) $object->methodName();
   b) object->methodName();
   c) object::methodName();
   d) $object::methodName();

8) Which of the following statements invoke the exception class?
   a) throws new Exception();
   b) throw new Exception();
   c) new Exception();
   d) new throws Exception();

9) Which function will return true if a variable is an array or false if it is not?
   a) this_array()   b) is_array()
   c) do_array()   d) in_array()

10) Which statement is used To produce a stored function?
    a) PRODUCE FUNCTION   b) CREATE FUNCTION
    c) PRODUCE PROCEDURE   d) CREATE PROCEDURE

11) To validate an email address, which flag is to be passed to the function filter_var()?
    a) FILTER_VALIDATE_EMAIL b) FILTER_VALIDATE_MAIL
    c) VALIDATE_EMAIL   d) VALIDAT_MAIL

12) Which two predefined variables are used to retrieve information from forms?
    a) $GET & $SET   b) $_GET & $_SET
    c) $__GET & $__SET   d) GET & SET

13) Which one of the following function is used to start a session?
    a) start_session()   b) session_start()
    c) session_begin()   d) begin_session()

14) What will be the output of the following PHP code? Say your previous session username was nachi.
    ```
    unset($_SESSION['username']);
    printf("Username now set to: %s", $_SESSION['username']);
    ```
    a) Usemame now set to: nachi   b) Username now set to: System
    c) Username now set to: d) Error

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) What is indexed & associative array?
   2) What is Dynamic variables?
   3) Write the application of PHP.
   4) What is cookie?
   5) What is class constants?

B) Write Notes. (Any Two)   **06**
   1) Differentiate between session and cookies
   2) Write note on global keyword
   3) Explain $_GET and $_POST variable

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) What is constructor? Explain with example.
   2) Explain different parameter passing technique.
   3) Write note on comparing and joining strings.

B) Answer the following questions. (Any One)   **06**
   1) What is Abstract class? Explain with suitable example.
   2) Explain different sorting techniques of arrays with proper examples.

Q.4 A) Answer the following questions.(Any Two)   **10**
   1) Explain benefits of PHP as a server side languages.
   2) Explain Server side validation.
   3) Explain different Array library functions.

B) Answer the following questions. (Any One)   **04**
   1) Write note on basic structure of PHP program.
   2) Write a program to implement interface.

Q.5 **Answer the following questions. (Any Two)** **14**
   a) What are data validations? Explain types of validations.
   b) Write a program for insert, update & delete the record in MySQL.
   c) What is exception handling? Explain with suitable example.

Seat No.

B.C.A. (Semester - IV) (CBCS) Examination Oct/Nov-2019
E - GOVERNANCE

Day & Date: Tuesday, 19-11-2019   Max. Marks: 70
Time: 08:00 AM To 10:30 AM

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 computerization of land Records by NIC is widely known as _____.
   a) Bhoomi   b) Zameen
   c) CLRS   d) None of these

2) Electronic Tax payment belongs to the category of _____.
   a) C2G   b) P2P
   c) C2B   d) B2B

3) E-Governance service maturity models are _____ paperless and faceless.
   a) Pageless   b) Wireless
   c) Cashless   d) All of these

4) B2B stands for _____.
   a) Business to Government   b) Business to Business
   c) Business to Buyer   d) Buyer to Buyer

5) _____ is the key to good governance and good governance is the only effective way of transparent governance.
   a) Transfer   b) Transparency
   c) Transaction   d) Transmission

6) _____ interaction model refers to the usages of electronic means between government and public.
   a) G2C   b) G2G
   c) G2B   d) B2C

7) In _____ state NeGP is implemented first in India.
   a) Maharashtra   b) Punjab
   c) Assam   d) Himachal Pradesh

8) _____ service rendered to a beneficiary through any service delivery channel enabled with option of Electronic / digital payment modes.
   a) Paperless   b) Faceless
   c) Cashless   d) All of these

9) BPR stands for _____.
   a) Business process reengineering
   b) Business practical reengineering
   c) Business Planning reengineering
   d) Business process recycle

10) _____ is a systematic approach to dealing with change, both from the perspective of an organisation and on the individual level.
a) Capacity building
b) Change Management
c) PPP
d) BPR

11) Capacity building also known as _____.
a) System Development
b) Change Management
c) Ability Development
d) Capacity Development

12) _____ is the example of social media site.
a) Facebook
b) Amezon
c) Google
d) Opera

13) Which institution was set up by Government of India to catalyze E-Governance activities?
a) FICCI
b) NIC
c) NASSCOM
d) MIT

14) _____ is an essential component of successful change management.
a) Consultation
b) Leadership
c) Monitoring and evaluation
d) All of these

Q.2 A) Answer the following questions. (Any Four) 08
1) NeGP stands for
2) B2G stands for
3) ICT stands for
4) What is mean by SDLC?
5) Define capacity Building.

B) Write Short Notes. (Any Two) 06
1) Intellectual Properties
2) Objectives of E-Governance
3) Domain Name

Q.3 A) Answer the following questions. (Any Two) 08
1) Explain the e-government services in India.
2) What is meant by self finance?
3) Explain Maturity models of E-Government in brief.

B) Answer the following questions. (Any One) 06
1) What is Traits of political Leader?
2) What is PPP? Explain characteristics of PPP?

Q.4 A) Answer the following questions. (Any Two) 10
1) Explain four stages of E-Government models.
2) Explain the phases of change Management.
3) What is E-Readiness? Explain it's importance?

B) Answer the following questions. (Any One) 04
1) What is the Joint Venture? Explain the benefits of Joint Venture?
2) What are the major advantages and disadvantages of E-Governance?

Q.5 Answer the following questions. (Any Two) 14
a) Define E-Governance. Explain in brief the following components of G2G, G2B and G2C.
b) What is E-Government project life cycle? Explain in brief the important activities in each phase?
c) What is the Role and Advantages of social media?

Seat No.	

B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
LOGIC DEVELOPMENT WITH 'C' PROGRAMMING (Paper - II)

Day & Date:Wednesday,13-11-2019 Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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) Array index starts from _____.
   a) 0 b) 1
   c) 2 d) Any number

2) 'C' language is _____ programming language.
   a) High-level b) Low-level
   c) Middle-level d) None of these

3) _____ is the name given to memory address where data is stored.
   a) Operator b) Variable
   c) Keyword d) Special symbol

4) _____ directive is used to declare constants in program.
   a) #include b) #define
   c) #const d) None of these

5) The statement terminator is _____.
   a) ; b) :
   c) # d) }

6) The range of int data type varies from _____ to _____.
   a) -128 to 127 b) -32768 to 32767
   c) 3.4e-38 to 3.4e+38 d) None of these

7) _____ is the result of statement 25<<3
   a) 42 b) 48
   c) 200 d) 360

8) _____ format code is used to read long integer.
   a) %d b) %f
   c) %1f d) %1d

Q.2 Answer the following questions.(Any Four) 08
1) What is Two-dimensional array?
2) What is nested loop?
3) What is pseudo code?
4) What is use of header file?
5) What is local and global variable?
6) What is 'typedef'?

Q.3 Write short notes on. (Any Two) 08
1) Jump statements
2) Type casting
3) Ternary operator

Q.4 Answer the following questions. (Any Two)   **08**
   1) Write a program to check entered number is palindrome or not.
   2) What is data type? Explain all primitive data types in details.
   3) Write a program to display matrix multiplication.

Q.5 Answer the following questions. (Any One)   **08**
   1) Write a program which takes one number as input and print corresponding month name.
   2) What is logic? Explain all types of logic.

Seat No.

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
CORE JAVA

Day & Date: Saturday, 09-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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)   What is the name of the method used to start a thread execution?
     a)   init();   b)   start();
     c)   run();   d)   resume();

2)   Which of the following is not a method in java.util.Scanner class?
     a)   next()   b)   nextLine()
     c)   nextlnt()   d)   nextBoolean()

3)   Which of these keyword can be used to prevent Method overriding?
     a)   static   b)   constant
     c)   protected   d)   final

4)   Which of these keyword can be used in subclass to call the constructor of superclass?
     a)   super   b)   this
     c)   extent   d)   extends

5)   Which of these access specifiers must be used for main() method?
     a)   private   b)   public
     c)   protected   d)   none of the mentioned

6)   Which of these classes is used for input and output operation when working with bytes?
     a)   InputStream   b)   Reader
     c)   Writer   d)   All of the mentioned

7)   Which of these keyword must be used to inherit a class?
     a)   super   b)   this
     c)   extent   d)   extends

8)   All the variables of interface should be?
     a)   default and final   b)   default and static
     c)   public,static and final   d)   protect, static and final

9)   What is process of defining two or more methods within same class that have same name but different parameters declaration?
     a)   method overloading   b)   method overriding
     c)   method hiding   d)   none of the mentioned

10) What is the numerical range of a char data type in Java?
     a)   -128 to 127   b)   0 to 256
     c)   0 to 32767   d)   0 to 65535

11) Which of the following is a method having same name as that of its class?
    a) finalize   b) delete
    c) class   d) constructor

12) Which of these packages contains all the event handling interfaces?
    a) java.lang   b) java.awt
    c) java.awt.event   d) java.event

13) What is the return type of a method that does not return any value?
    a) int   b) float
    c) void   d) double

14) Which of these keywords must be used to handle the exception thrown by try block in some rational manner?
    a) try   b) finally
    c) throw   d) catch

Q.2 A) Answer the following questions. (Any Four)   **08**
1) Write any four java operator.
2) Write any two use of 'super' java keyword.
3) Write a syntax of static method.
4) Explain any two use of 'this' keyword.
5) Write any two JDBC Driver.

B) Write Notes. (Any Two)   **06**
1) AWT
2) Method overriding
3) Arrays

Q.3 A) Answer the following questions. (Any Two)   **08**
1) Explain Access specifiers in java.
2) Write a note on JDK tools in java.
3) Explain flow control statements.

B) Answer the following questions. (Any One)   **06**
1) Explain the different types of inheritance in java.
2) Explain Thread priority in java with suitable example.

Q.4 A) Answer the following questions. (Any Two)   **10**
1) Explain Architecture of JDBC.
2) Explain Thread life cycle in java.
3) Explain Structure of Java Program.

B) Answer the following questions. (Any One)   **04**
1) Explain features of Java.
2) What is the use of Layout Managers? Explain GridLayout with example.

Q.5 Answer the following questions. (Any Two)   **14**
1) Explain FileWriter and FileReader class with an example.
2) Define Constructor. Explain the types of constructor.
3) What is Exception Handling? Explain the user defined exception with example.

Seat No.

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
Visual Programming

Day & Date: Wednesday, 13-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1   Multiple Choice Questions.   **14**

1) What is return type of constructors?
   a) int
   b) float
   c) void
   d) none of these

2) Which of these keywords are used for the block to handle the exceptions generated by try block?
   a) Try
   b) Catch
   c) Throw
   d) Check

3) Which form of inheritance is not supported directly by C#.NET?
   a) Multiple inheritance
   b) Multilevel inheritance
   c) Single inheritance
   d) Hierarchical inheritance

4) What is the need for 'Conversion of data type' in C#?
   a) To store a value of one data type into a variable of another data type
   b) To get desired data
   c) To prevent situations of run time error during change or conversion of data type
   b) None of the mentioned

5) Which of the following service provided by CLR?
   a) Verification of type safety
   b) Inter-operability
   c) Automatic garbage collection
   d) All of these

6) Which of the following is predefined reference type?
   a) Structure
   b) Enumeration
   c) Class
   d) Object

7) What is the process of defining more than one method in a class differentiated by parameters known as?
   a) Method overriding
   b) Method overloading
   c) Method doubling
   d) None of the mentioned

8) _____ operator can be used to concatenate two or more String objects.
   a) +
   b) +=
   c) &
   d) ||

9) Which of the following is NOT an Arithmetic operator in C#.NET?
   a) **
   b) +
   c) ∕
   d) %

10) _____ keyword is used to declare a base class method while performing overriding of base class methods.
   a) this
   b) virtual
   c) override
   d) extend

11) _____ namespace is required to connecting to the SQL Server.
   a) System.Data.OracleClient
   b) System.Data.SqlClient
   c) System.Data.
   d) System.Data.ADO

12) _____ property allows the Text Box control to display text in more than one line.
   a) Many
   b) More
   c) Multiline
   d) Many line

13) _____ specially designed for accessing the value of an array or a collection.
   a) For loop
   b) While loop
   c) Do-while loop
   d) Foreach loop

14) _____ control is used to select one option from a set of options.
   a) CheckBox
   b) GroupBox
   c) RadioButton
   d) ComboBox

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) Abstract classes
   2) Garbage Collection
   3) Anonymous Method
   4) Enumeration
   5) Collection Classes

B) Write Notes on (Any Two)   **06**
   1) WAP to overload a method
   2) Explain what are Assemblies with their types?
   3) Define Data Set with its advantages.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) What is generic collection? Explain any two generic classes with example.
   2) Explain the following controls.
      i) Check Box
      ii) Radio Button
   3) What is Indexer? Give one example.

B) Write Notes on. (Any One)   **06**
   1) Explain different methods of Thread class.
   2) Define File Info with example.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) What is method overriding? Explain with suitable example.
   2) Write a note on Static members and Static Methods.
   3) What is stream? Explain how to read and write Console I/O data.

B) Answer the following questions. (Any One)   **04**
   1) Write note on properties.
   2) Differentiate between DataReader and DataAdapter.

Q.5 Answer the following questions. (Any Two)   **14**
   a) Explain architecture of .NET Framework.
   b) Create a window application to add a new record using stored procedure.
   c) What is Delegate? WAP that uses multicast delegate.

Seat No.

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
LINUX & SHELL PROGRAMMIG

Day & Date: Friday, 15-11-2019　　　　　　　　　　　Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 command is not related to the directory?
   a) cd　　　　　　　　　　　　b) pwd
   c) cat　　　　　　　　　　　　d) mkdir

2) Which of the following is the features of Linux operating system?
   a) multiuser　　　　　　　　　b) multi process
   c) multi tasking　　　　　　　d) all of these

3) Which of the following symbols represents redirection?
   a) __　　　　　　　　　　　　b) <
   c) &　　　　　　　　　　　　　d) |

4) _____ symbol matches only a single character in file.
   a) ?　　　　　　　　　　　　　b) *
   c) _　　　　　　　　　　　　　d) none of these

5) What command is used with Vi editor to delete a single character?
   a) x　　　　　　　　　　　　　b) y
   c) a　　　　　　　　　　　　　d) z

6) In Linux file system _____ is the top level directory.
   a) home　　　　　　　　　　　b) root
   c) bin　　　　　　　　　　　　d) etc

7) A user can change his password using pwd command.
   a) True　　　　　　　　　　　b) False

8) To change the priority of a job we can use the _____ command.
   a) nice　　　　　　　　　　　b) pr
   c) set　　　　　　　　　　　　d) priority

9) LILO stands for _____.
   a) Linux boot loader　　　　　b) Is a tool used to boot the kernel
   c) Linux Loader　　　　　　　d) None of these

10) Which of the following tool is used to partition your hard drive?
    a) mkfs　　　　　　　　　　　b) fsck
    c) mount　　　　　　　　　　d) fdisk

11) Which option of is command used to view hidden file?
    a) -i　　　　　　　　　　　　b) -d
    c) -r　　　　　　　　　　　　d) -a

12) A process can run only in background.
    a) True　　　　　　　　　　　b) False

13) What command is used to list the jobs currently in print queues?
    a) Ipq   b) Ipr
    c) Iprm   d) Iprq

14) The default environment of Linux is _____.
    a) GNOME   b) KDE
    c) Both a & b   d) none of these

Q.2 A) Answer the following questions. (Any Four)   **08**
    1) What is shell?
    2) What is the hardware requirement of Linux?
    3) What is boot block?
    4) What is cat command?
    5) Write short note DHCP.

B) Write Notes. (Any Two)   **06**
    1) What is the role of system administrator?
    2) Give the use of ping command with example.
    3) How to create user? explain with example.

Q.3 A) Answer the following questions. (Any Two)   **08**
    1) What is the difference between Window & Linux operating system?
    2) Explain in detail foreground & background.
    3) What is boot loader? Explain it's types.

B) Answer the following questions. (Any One)   **06**
    1) What is the purpose of chmod command? explain with example.
    2) Write a shell script to check entered number is prime or not.

Q.4 A) Answer the following questions. (Any Two)   **10**
    1) Explain hierarchy of file system.
    2) Explain filter command with example.
    3) Explain NFS & NIS.

B) Answer the following questions. (Any One)   **04**
    1) What is redirection? Explain I\O redirection.
    2) Explain the architecture of Linux operating system.

Q.5 Answer the following questions. (Any Two)   **14**
    1) Explain Vi editor in detail.
    2) How to archive and compression of the file in Linux.
    3) Write a Shell program to check the given integer is Armstrong number or not.

Seat No.	

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
COMPUTER GRAPHICS

Day & Date: Monday, 18-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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 Quality of a picture is obtained from a device depends on _____.
   a) Dot Size   b) Number of dots per inch
   c) Number of lines per inch   d) All of the above

2) Projection line is _____.
   a) Continuous thick line   b) Continuous thin line
   c) Chain thin line   d) Dashed thin line

3) A line can be represented by _____.
   a) One point   b) Two point
   c) Three point   d) four point

4) There are two standard method of mathematically representing a circle centred at the origin _____.
   a) DDA & Bresenham's   b) Polynomial &Trigonometric
   c) Polynomial & Bresenham's   d) none of these

5) A _____ is defined as a polygon with one or more interior angles greater than 180°.
   a) Hexagon   b) Pentagon
   c) Octagon   d) none of these

6) The mid- point circle drawing algorithm also uses the_____ of the circle to generate.
   a) Two -way symmetry   b) Four-way symmetry
   c) both a) & b)   d) Eight-way symmetry

7) In two dimensional viewing we have_____.
   a) 2D window & 3D view port   b) 2D window & 2D view port
   c) 3D window & 2D view port   d) 3D window & 3D view port

8) When the projection is obtained by projecting points along parallel lines that are not perpendicular to the projection plane is called _____.
   a) Cavalier projection   b) Isometric projection
   c) Perspective projection   d) Oblique projection

9) Vector display is well suited for _____.
   a) Line drawing application   b) Animation
   c) Cartoon   d) All of these

10) Shadow mask method is usually used in _____.
   a) LCD   b) Raster scan display
   c) Random scan display   d) DVST

11) The basic geometrical structure that describes a scene on display is called _____.
   a) Attributes
   b) Output primitive
   c) Lines
   d) Curves

12) The region against which an object is clipped is called a _____.
   a) Clip window
   b) Boundary
   c) Enclosing rectangle
   d) Clip square

13) The region code of a point within the window is _____.
   a) 0000
   b) 0001
   c) 1000
   d) 1111

14) Graphics software acts as a very powerful tool to create _____.
   a) Images
   b) Animated pictures
   c) both a) & b)
   d) System interface

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) List out different graphics packages.
   2) What are the problems in scan conversion?
   3) Define polygon and its type.
   4) What is translation?
   5) Define projection.

B) Write Notes. (Any Two)   **06**
   1) Plotters
   2) Boundary fill algorithm
   3) Vanishing points

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Explain ordered edge list algorithm.
   2) What is 3D shearing?
   3) Explain combined transformation in 2D.

B) Answer the following questions. (Any One)   **06**
   1) Explain Sutherland-Hodgman algorithm for polygon clipping.
   2) Explain different perspective anomalies in projection.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) What are different types of printer? Explain its working.
   2) Explain Window to view point mapping in 2D.
   3) Explain scaling about reference point.

B) Answer the following questions. (Any One)   **04**
   1) What are the applications of computer graphics?
   2) Explain hard copy raster devices.

Q.5 Answer the following questions. (Any Two)   **14**
   a) Explain image formation inside analog and digital camera.
   b) Writes and explain Bresenham's line drawing algorithm.
   c) Explain basic 3D transformation.

Seat No.	

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
DATA WAREHOUSE AND DATA MINING

Day & Date: Wednesday, 20-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.

Q.1 **Fill in the blanks by choosing correct alternatives given below.**   **14**
1) Fact table are which of the following _____.
   a) Completely denormalized   b) Partially denormalized
   c) Completely normalized   d) Partially normalized

2) The genric two-level data warehouse architecture include _____.
   a) at least one data mart
   b) data extracted from external and internal source
   c) near real time update
   d) all of above

3) The important aspect of the data warehouse environment is that data found within the data warehouse is _____.
   a) subject-oriented   b) time-variant
   c) integrated   d) all of the above

4) The data Warehouse is _____.
   a) read only   b) write only
   c) read write only   d) none of these

5) The role of ETL process is to identify erroneous data and fix them
   a) True   b) False

6) _____ is the heart of the warehouse.
   a) Data mining database servers
   b) Data warehouse database servers
   c) Data mart database servers
   d) Relational data base servers

7) _____ databases are owned by particular departments or business groups.
   a) Informational
   b) Operational
   c) Both informational and operational
   d) Flat

8) The star schema is composed of _____ fact table.
   a) one   b) two
   c) three   d) four

9) The time horizon in operational environment is _____.
   a) 30-60 days   b) 60-90 days
   c) 90-120 days   d) 120-150 days

10) What is an ETL stand for _____.
    a) Execute transmit and load   b) Extract transform and load
    c) Execute transform and load   d) All of above

11) A star schema has what type of relationship between dimension and fact table.
   a) Many to Many
   b) One to One
   c) One to many
   d) All of above

12) A snowflake schema is which of the following types of tables.
   a) Fact
   b) dimension
   c) Helper
   d) All of above

13) Classification rules are extracted from _____.
   a) Root node
   b) Decision tree
   c) Siblings
   d) Branches

14) The data is stored retrieved and updated in _____.
   a) OLAP
   b) OLTP
   c) SMTP
   d) FTP

Q.2 A) Answer the following questions. (Any Four) 08
   1) What are the techniques in Data Mining?
   2) Define Web Mining?
   3) What is Decision Tree?
   4) Define OLTP?
   5) Define Spatial Database?

B) Write Notes. (Any Two) 06
   1) Why data integration is difficult task?
   2) Explain the ETL design with suitable example?
   3) What is difference between database and data warehouse?

Q.3 A) Answer the following questions. (Any Two) 08
   1) Write short notes on metadata repository.
   2) Explain the Association Rules.
   3) Explain the design and development of Data Warehouse.

B) Answer the following questions. (Any Two) 06
   1) Explain about Text Mining.
   2) What is the purpose of Apriori Algorithm?
   3) What are the different data cleaning technique explain in brief?

Q.4 A) Answer the following questions. (Any Two) 10
   1) Explain the smoothing techniques.
   2) Explain the Data reduction.
   3) Explain mining complex types of Data.

B) Answer the following questions. (Any One) 04
   1) Explain the classification in detail.
   2) Explain the Data warehouse performance issue.

Q.5 Answer the following questions. (Any Two) 14
   a) Extract all rules with confidence above 75% and support above 25% from the following data:

Customer	Items
1	orange juice, soda
2	milk, orange juice, window cleaner
3	orange, juice, detergent
4	orange juice, detergent, soda
5	window cleaner, soda

Find strong association between them.
   b) Explain the OLAP operations in multidimensional model?
   c) Explain K- nearest neighbor classification in detail?

Seat No.

Set **P**

B.C.A. (Semester - V) (New) (CBCS) Examination Oct/Nov-2019
THEORY OF COMPUTATION

Day & Date: Wednesday, 20-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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)   _____ of a string is any number of trailing symbols of the string excluding
     the string itself.
     a) Suffix   b) proper suffix
     c) prefix   d) proper prefix

2)   _____ is collection of elements without repetition.
     a) alphabet   b) string
     c) symbol   d) set

3)   Mealy and Moore machine has _____Tuples.
     a) 5   b) 6
     c) 7   d) 8

4)   Every NFA with ε moves has an equivalent _____.
     a) NFA   b) DFA
     c) both a and b   d) none of these

5)   FA with output will be represented by using _____.
     a) Mealy machine   b) Moore Machine
     c) both a and b   d) none of these

6)   Regular Expression is mathematical description of language.
     a) True   b) False

7) $\delta: QX\sum ->2^Q$ is the transition function of _____.
     a) DFA   b) NFA
     c) NFA with ε moves   d) none of these

8)   Any number of a's followed by any number of b's is denoted by _____.
     a) a*+b*   b) (a+b)*
     c) a*.b*   d) (ab)*

9)   In CNF productions in the following form _____.
     a) A->ABC or A->a   b) A->AB or A->a
     c) A->aA*   d) A->AB or A->aA

10) Power set means set of all subsets.
     a) true   b) false

11) The symbols which can be changed is called _____.
     a) terminal   b) non terminal
     c) symbol   d) none of these

12) The productions which contain only one variable both at right side of
     production and left side of production that productions are called _____.
     a) unit production   b) ε-production
     c) both a and b   d) none of these

13) Regular Expression can perform _____ operations.
   a) union   b) concatenation
   c) iteration   d) all of the above

14) if $r = (a + b)^*a$ then $L(r) =$ _____.
   a) $\{a, aa, ba, bba \dots\}$ b) $\{\varepsilon, a, aaa, aba, \dots\}$
   c) $\{a, b, bba, \dots\}$ d) $\{\varepsilon, a, b, bba, \dots\}$

Q.2 **A)** **Solve any four questions from the following.**   **08**
1) Find the language for the following regular expression.
(0+11)*(1+00)*
2) If $R = \{(0,1), (1,2), (2,3)\}$ is a relation in $\{0,1,2,3\}$ find its R^+.
3) Design Mealy machine to find out 1's complement of a given binary number.
4) Design DFA which accept the language that starts with a over $\sum = \{a, b\}$.
5) What will be the language when Regular Expression r=a*b*c*.

B) **Solve any two questions from the following.**   **06**
1) Design a FA that reads strings made up of letters in the word 'reynolds' & recognize those strings that contain the word 'old' as a substring.
2) Check the following regular expression is equivalent or not.
P=(rs+r)*r   Q=r(rs+r)*
3) Find the context free grammar for the following regular expression.
a(a+b)*ab(a+b)*b

Q.3 **A)** **Solve any two questions of the following.**   **08**
1) Convert the following grammar to CNF.
S→bA|aB, A→bAA|aS|a, B→aBB|bS|b
2) State & explain Pumping lemma.
3) Convert following NFA to DFA.

Q/$\sum$	a	b	c
->p	p	q	r
q	q	r	-
*r	r	-	p

B) **Solve any one question from the following.**   **06**
1) Define FSM. Design FSM for binary adder.
2) Define DFA. Write a note on DFA minimization.

Q.4 **A)** **Solve any two questions from the following.**   **10**
1) What is ambiguous grammar. Check whether following grammar is ambiguous or not. If Ambiguous, Remove the ambiguity.
E→E+T|T
T→T*F|F
F→(E)|a|b.
2) Define string, suffix of string, proper suffix of string, prefix of string, proper suffix of string.
3) Construct FA for following RE (a+b)*+(a+b)*

B) **Solve any one question from the following.**   **04**
1) Define NFA, NFA with ε-moves, Moore machine, Mealy Machine.
2) Write a note on simplification of CFG.

Q.5   Solve any two questions from the following.   14

    a)   Construct DFA which accept even number of a's and even number of b's.

    b)   Find the regular expression by using Ardens Theorm for the given FA.
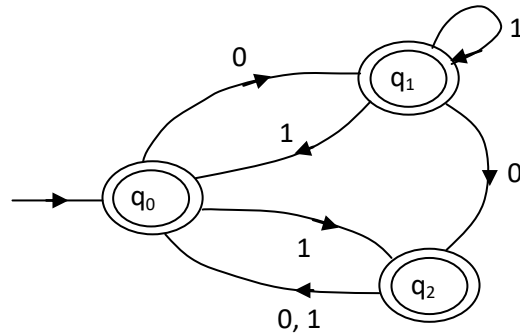
    c)   Convert following grammar in GNF.

        S->AB

        A->BS|b

        B->SA|a

Seat No.

B.C.A. (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
ADVANCED JAVA

Day & Date: Friday, 08-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

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

1) ORM stands for _____.
   a) Object Relational Model　　　　b) Object Relational Mapping
   c) Object Runnable Model　　　　 d) None of these

2) JSTL stands for JSP Standard Tag Library _____.
   a) True　　　　　　　　　　　　 b) False

3) The prefix of function tag is _____.
   a) function　　　　　　　　　　 b) fun
   c) fmt　　　　　　　　　　　　　d) fn

4) GenericServlet class comes under _____ package.
   a) javax.servlet　　　　　　　　 b) javax.servlet.http
   c) javax.genericservlet　　　　　 d) None

5) POJO Stands for _____.
   a) Pure Old Java Object　　　　　 b) Plain Object Java Old
   c) Plain Old Java Object　　　　　d) None of these

6) <%= %> is the syntax for _____.
   a) scriptlet tag　　　　　　　　　b) declaration tag
   c) jsp comment　　　　　　　　　d) expression tag

7) <generator> class is a sub-element of _____.
   a) generator-id　　　　　　　　　b) assigned
   c) id　　　　　　　　　　　　　　d) none of these

8) Object relational mapping are performed in_____ file.
   a) hibemate.cfg.xml　　　　　　 b) hibernate.hbm.xml
   c) hibernate.hbm.java　　　　　　d) hiber.hbm.xml

9) _____ is the extension of Deployment Descriptor file in servlet.
   a) .java　　　　　　　　　　　　 b) .web
   c) .xml　　　　　　　　　　　　　d) .class

10) <hibernate-configuration> tag is not a root element of Hibernate-configuration file.
    a) True　　　　　　　　　　　　 b) False

11) Config is the object of _____ class.
    a) ApplicationConfig　　　　　　 b) PageContext
    c) ServletConfig　　　　　　　　 d) None of these

12) <jsp:forword> action element tag forwards the request and response to another resource.
    a) True   b) False

13) _____ interface provides the facility of dispatching the request to another resource it may be html, servlet or jsp.
    a) Request   b) RequestDispatcher
    c) RequestServlet   d) None of these

14) JPA annotations are defined in the _____ package.
    a) javax.servlet   b) org.hibernate
    c) javax.persistence   d) none of these

Q.2 A) Answer the following (Any Four)   **08**
1) Development Descriptor
2) What is Inversion of Control?
3) Application object
4) Hibernate.cfg.xml
5) What is CGI?

B) Write Notes on (Any Two)   **06**
1) Explain scripting elements in jsp.
2) Explain session object with example.
3) Design a jsp page to display current date and time.

Q.3 A) Answer the following (Any two)   **08**
1) Design a servlet page to maintain session using HttpSession.
2) What are the advantages of Spring Framework?
3) Design a jsp page to check given number is strong or not.

B) Answer the following (Any One)   **06**
1) Explain JSP life cycle.
2) Explain Hibernate Architecture in details.

Q.4 A) Answer the following (Any Two)   **10**
1) Write a hibernate application using Table per Hierarchy using xml.
2) What is Dependency Injection? Given an example of Injection by constructor.
3) Explain Action elements in jsp.

B) Answer the following (Any One)   **04**
1) Write a program to demonstrate RequestDispatcher interface.
2) Explain PreparedStatement in spring JdbcTemplate.

Q.5 Answer the following (Any two)   **14**
a) Write a program to store Employee information such as empid, empname, empsalary, etc. into employee table using Hibernate annotation.
b) Explain spring frame work in detail.
c) Explain any three JSTL tag library in details.

Seat No.

BCA (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
DOT NET TECHNOLOGY

Day & Date: Monday, 11-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
              2) Figures to the right indicate full marks.
              3) Draw neat labeled diagram if necessary.

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

1) Default scripting language in ASP.Net. _____.
    a) EcmaScript   b) VBScript
    c) PERL   d) JavaScript

2) How do you get information from a form that is submitted using the "post" method?
    a) Request.QueryString   b) Request.Form
    c) Response.write   d) Response.writeln

3) Which object can help you maintain data across users?
    a) Application object   b) Session object
    c) Response object   d) Server object

4) Which of the following ASP.NET object encapsulates the state of the client?
    a) Session object   b) Application object
    c) Response object   d) Server object

5) What is the base class from which all Web forms inherit?
    a) Master Page   b) Page Class
    c) Session Class   d) None of the Above

6) WSDL stands for _____?
    a) Web Server Description Language.
    b) Web Server Descriptor Language.
    c) Web Services Description Language.
    d) Web Services Descriptor Language.

7) Which of the following transfer execution directly to another page?
    a) Server.Transfer   b) Response.Redirect
    c) Both A and B   d) None of the Above

8) Which method do you invoke on the DataAdapter control to load your generated dataset with data?
    a) Load ()   b) Fill ()
    c) DataList   d) DataBind

9) When an .aspx page is requested from the web server, the output will be rendered to browser in following format _____.
    a) HTML   b) XML
    c) WML   d) JSP

10) The first event to be triggered in an aspx page is _____.
    a) Page_Load() b) Page_Init()
    c) Page_click() d) Page_Unload()

11) How do you register a user control?
    a) Add Tag prefix,Tag name b) Add Source, Tag prefix
    c) Add Src,Tagprefix, Tagname d) None of these

12) To add a custom control to a Web form we have to register with _____.
    a) TagPrefix
    b) Name space of the dll that is referenced
    c) Assemblyname
    d) All of these

13) Which of the following is not a member of ADODBCommand object?
    a) ExecuteReader b) ExecuteScalar
    c) ExecuteStream d) None of these

14) An alternative way of displaying text on web page using _____.
    a) asp:label b) asp:listitem
    c) asp:button d) asp:text

Q.2 A) Answer the following questions. (Any Four) 08
1) Explain the difference between server side and client side code.
2) What is the difference between Server.Transfer and Response.Redirect?
3) Describe session handling in a webform, how does it work?
4) What are the advantages and disadvantages of viewstate?
5) What is the sequence of operation takes place when a page is loaded?

B) Write short notes (Any Two) 06
1) What are different types of directives in .NET?
2) Explain about web services. What are VSDISCO files?
3) What is the difference between repeater over datalist and datagrid?

Q.3 A) Answer the following questions. (Any Two) 08
1) What is validation summary server control? Where it is used?
2) What is a Dataset? Explain with example.
3) Explain cross-page posting in detail.

B) Answer the following questions. (Any One) 06
1) Explain about SiteMapData source control.
2) Explain the working of AJAX.

Q.4 A) Answer the following questions. (Any Two) 10
1) Explain the ADO . Net Architecture.
2) Explain DropDownList control with example.
3) Explain SOAP.

B) Answer the following questions. (Any One) 04
1) Explain Custom Validator Control in detail with example.
2) Explain about Connection and Command object in ADO.NET.

Q.5 Answer the following questions. (Any Two) 14
a) What is Proxy in web services? How to create it explain.
b) What is Transaction? How transaction processing achieved using ADO.NET?
c) What is theme? How to create theme and skin explain with Example?

Seat No.

B.C.A. (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
RECENT TRENDS IN IT

Day & Date: Thursday, 14-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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 huge number of devices connected to the Internet of Things has to communicate automatically, not via humans. What is this called?
   a)   Skynet   b)   Bot 2 Bot
   c)   Machine 2 Machine   d)   Intercloud

2)   _____ in IoT as one of the key characteristics, devices have different hardware platforms and networks.
   a)   Sensors   b)   Heterogeneity
   c)   Security   d)   Connectivity

3)   IoT devices are naturally vulnerable to _____ threats.
   a)   Sensors   b)   Heterogeneity
   c)   Security   d)   Connectivity

4)   What are the different features of Big Data Analytics?
   a)   Open-Source   b)   Scalability
   c)   Data Recovery   d)   All the above

5)   Which of the following is essential concept related to Cloud ?
   a)   Reliability   b)   Productivity
   c)   Abstraction   d)   All of the mentioned

6)   Cloud computing is an abstraction based on the notion of pooling physical resources and presenting them as a _____ resource.
   a)   real   b)   virtual
   c)   cloud   d)   none of the mentioned

7)   Which of the following is most important area of concern in cloud computing?
   a)   Security   b)   Storage
   c)   Scalability   d)   All of the mentioned

8)   What license is Hadoop distributed under?
   a)   Apache License 2.0   b)   Mozilla Public License
   c)   Shareware   d)   Commercial

9)   What was Hadoop written in?
   a)   Java (software platform)   b)   Perl
   c)   Java (programming language)   d)   Lua (programming language)

10) Which of the following is performed by Data Scientist?
   a)   Define the question   b)   Create reproducible code
   c)   Challenge results   d)   All of the Mentioned

11) Which of the following is one of the key data science skill?
   a)   Statistics   b)   Machine Learning
   c)   Data Visualization   d)   All of the Mentioned

12) Which of the following characteristic of big data is relatively more concerned to data science?
    a) Velocity
    b) Variety
    c) Volume
    d) None of the Mentioned

13) Which of the following step is performed by data scientist after acquiring the data?
    a) Data Cleaning
    b) Data Integration
    c) Data Replication
    d) All of the mentioned

14) Machine learning is _____.
    a) The autonomous acquisition of knowledge through the use of computer programs
    b) The autonomous acquisition of knowledge through the use of manual programs
    c) The selective acquisition of knowledge through the use of computer programs
    d) The selective acquisition of knowledge through the use of manual programs

Q.2 A) Answer the following questions. (Any Four) 08
    1) What is Cloud Computing?
    2) What is Server Virtualization?
    3) Define IOT.
    4) What is Green IT?
    5) What do you mean by Features in Machine learning?

B) Write Notes. (Any Two) 06
    1) Green IT Standards and Eco-Labelling
    2) Attributes of Big Data
    3) Cloud cube model

Q.3 A) Answer the following questions. (Any Two) 08
    1) What is Big Data and where it is produced?
    2) Discuss in brief about Cloud economics and benefits.
    3) What are the Core Components of Hadoop?

B) Answer the following questions. (Any One) 06
    1) What is Machine Learning? Describe Training versus Testing in details.
    2) Write the notes on Statistical modeling and Probabilistic distribution in data science.

Q.4 A) Answer the following questions. (Any Two) 10
    1) Explain in details the role of a Data Scientist.
    2) What are the Predictive and descriptive tasks in machine learning?
    3) Write comparative notes on Hadoop vs Traditional systems.

B) Answer the following questions. (Any One) 04
    1) What are the essential characteristics of Cloud computing?
    2) What are the benefits and uses of Data Science?

Q.5 Answer the following questions. (Any Two) 14
    1) Explain in details the architecture of IOT and applications of IOT.
    2) What do you mean by virtualization? Explain in details about Virtualization technologies and architectures.
    3) What are the Environmental impacts of IT and explain the Holistic Approach to Greening IT.

Seat No.	

B.C.A. (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
CRYPTOGRAPHY AND NETWORK SECURITY

Day & Date: Saturday, 16-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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 Cryptography, the original message, before being transformed, is called _____.
   a) Simple Text   b) Plain Text
   c) Empty Text   d) Filled Text

2) The process of transforming plain text to unreadable text _____.
   a) Decryption   b) Encryption
   c) Network Security   d) Information Hiding

3) A unique piece of information that is used in encryption _____.
   a) Cipher   b) Plain Text
   c) Key   d) Cipher

4) The full form of SSL is _____.
   a) Serial Session Layer   b) Secure Socket Layer
   c) Session Secure Layer   d) Series Socket Layer

5) Digital signature cannot provide _____ for the message.
   a) Integrity   b) Confidentiality
   c) nonrepudiation   d) Authentication

6) In Cryptography, when text is treated at the bit level, each character is replaced by _____.
   a) 4 Bits   b) 6 Bits
   c) 8 Bits   d) 10 Bits

7) The keys used in cryptography are _____.
   a) secret key   b) private key
   c) public key   d) All of these

8) In public key cryptography, a key that decrypts the message _____.
   a) public key   b) unique key
   c) private key   d) security key

9) Network Security provides authentication and access control for resources.
   a) True   b) False

10) S/MIME stands for _____.
    a) Standard Multipurpose Internet Mail Extensions
    b) Secure Multipurpose Internet Mail Extensions
    c) Secure Multipurpose International Mail Extensions
    d) Standard Multipurpose International Mail Extensions

11) A digital signature needs a _____.
    a)   Private-key system   b)   Shared-key system
    c)   Public-key system   d)   All of these

12) The digest created by a hash function is normally called a _____.
    a)   Modification detection code
    b)   Modify authentication connection
    c)   Message authentication control
    d)   Message authentication cipher

13) _____ is the first step in DES.
    a)   Key transformation   b)   Expansion permutation
    c)   S-box substitution   d)   P-box substitution

14) _____ is a block cipher.
    a)   DES   b)   IDEA
    c)   AES   d)   RSA

Q.2 A) Answer the following questions. (Any Four)   **08**
    1)   What is Kerberos? What are the uses?
    2)   What do you mean by cryptosystem?
    3)   What is Cryptography?
    4)   What is mean by Email?
    5)   Explain the Two security protocols.

B) Write Notes. (Any Two)   **06**
    1)   Internet Key exchange
    2)   Analysis of AES
    3)   Security Goals

Q.3 A) Answer the following questions. (Any Two)   **08**
    1)   Explain RSA Cryptosystem.
    2)   Explain the Security of DES.
    3)   Explain the SSL Message Formats.

B) Answer the following questions. (Any One)   **06**
    1)   What is meant by Ciphers? Explain the types of ciphers.
    2)   What is meant by Digital Signature? Explain Attacks on Digital Signature.

Q.4 A) Answer the following questions. (Any Two)   **10**
    1)   Explain the Process and Services of the Digital Signature.
    2)   Explain services provided by IPSec.
    3)   Explain the Structure and Analysis of DES.

B) Answer the following questions. (Any One)   **04**
    1)   Explain the Asymmetric Key Cryptography.
    2)   Explain the AES Ciphers.

Q.5 Answer the following questions. (Any Two)   **14**
    a)   Explain the PGP and S/MIME in detail.
    b)   What is mean by SSL? Explain SSL Architecture in network security.
    c)   Explain the Integer Arithmetic and Modular Arithmetic in Cryptography.

Seat
No.

B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
BASICS OF WEB PROGRAMMING – I (Paper – I)

Day & Date: Friday, 15-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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) HTML stands for?
    a) Hypertext Markup Language
    b) High text Markup Language
    c) Hyper Tabular Markup Language
    d) None of the above

2) Correct HTML tag for the largest heading is _____.
    a) <Head>   b) <H6>
    c) <H1>   d) <Heading>

3) <DT> tag is designed to fit a single line of our web page but <DD> tag will
    accept a _____.
    a) Line of text   b) Full Paragraph
    c) Word   d) Request

4) Which of the tag is used to creates a number list?
    a) <LI>   b) <OL>
    c) <LI>&<OL>   d) None of the above

5) Who is making the Web standards?
    a) Google
    b) Microsoft
    c) The World Wide Web Consortium
    d) None of the Above

6) CSS stands for _____.
    a) Colour style Sheet   b) Creative Style Sheet
    c) Computer Style Sheet   d) Cascadinding Style Sheet

7) What is the Correct HTML for referring External Linking?
    a) < link rel= "style sheet" type ="text/css" href="mystyle.css">
    b) <style src=" mystyle.css">
    c) <style sheet> mystyle.css</style sheet>
    d) None of the above

8) Which HTML tag is used to define Internal Style sheet?
    a) <script>   b) <style>
    c) <css>   d) None

Q.2 Answer the following questions. (Any Four)   08
    a) Explain any 2 text formatting tags with suitable example.
    b) State the Advantages of using CSS.
    c) Explain structure of HTML Program.
    d) Explain DOCTYPE Element.
    e) Explain need of HTML5.

Q.3   Write short notes. (Any Two)   **08**
   a)   GET and POST Method
   b)   Selectors and Properties of CSS
   c)   Applications of Internet

Q.4   Answer the following questions. (Any Two)   **08**
   a)   Explain any 4 tags from following with example.
         1)   section
         2)   Article
         3)   header
         4)   footer
         5)   Figure
   b)   Write HTML code to display the Ordered List and Unordered list.
   c)   Explain Image Tag with example.

Q.5   Answer the following questions. (Any One)   **08**
   Write a program using HTML to display following table.

Roll _No	Name	Class	Marks		
			S1	S2	S3

OR

Q.5   What is CSS? Explain types of CSS with suitable example.

Seat No.	

B.C.A. (Semester - VI) (New) (CBCS) Examination Oct/Nov-2019
SYSTEM PROGRAMMING

Day & Date: Saturday, 16-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
　　　　　　　 2) Figures to the right indicate full marks.
　　　　　　　 3) Draw neat labeled diagram, flowchart if necessary.

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

1) What is bootstrapping?
   a) language interpreting other language program
   b) A language compiling other language program
   c) A language compiles itself
   d) All of above

2) A program in execution is called _____.
   a) Process   b) Instruction
   c) Procedure   d) Function

3) In which addressing mode the operand is given explicitly in the instruction?
   a) Absolute mode   b) Immediate mode
   c) Indirect mode   d) Index mode

4) Which of the following are language processors?
   a) assembler   b) compilers
   c) interpreter   d) all of these

5) Assembly language uses _____.
   a) hex code   b) binary code
   c) Mnemonics   d) ASCII code

6) Which of the following might be used to convert high-level language instructions into machine language?
   a) system software   b) applications software
   c) an operating environment   d) an interpreter

7) Operation code field is present in _____.
   a) programming language instruction   b) assembly language instruction
   c) machine language instruction   d) none of the mentioned

8) Which of the following is not a type of assembler?
   a) One pass   b) two pass
   c) three pass   d) load and go

9) In a two pass assembler the pseudo code EQU is to be evaluated during?
   a) Pass 1   b) Pass 2
   c) not evaluated by the assembler   d) None of above

10) Translator for low level programming language was termed as?
    a) Assembler   b) Compiler
    c) Linker   d) Loader

11) In a two-pass assembler, the task of the Pass II is to?
    a) separates the symbol, mnemonic opcode and operand fields
    b) build the symbol table
    c) construct intermediate code
    d) synthesize the target program

12) TII stands for _____.
    a) Table of incomplete instructions
    b) Table of information instructions
    c) Translation of instructions information
    d) Translation of information instruction

13) The translator which perform macro expansion is called a?
    a) Macro processor   b) Macro pre-processor
    c) Micro pre-processor   d) assembler

14) A macro is?
    a) a small program inside a program
    b) set of special instructions
    c) A unit of specification for program generation through expansion
    d) None of these

Q.2 A) Answer the following question.(Any Four)   **08**
    1) Distinguish between Compiler and Interpreter.
    2) State difference between machine language and high level language?
    3) State the Lexical and Syntax phase of compiler?
    4) Draw a labeled diagram of general loading scheme.
    5) Write in brief about any two components of system software.

Q.2 B) Write Notes on. (Any Two)   **06**
    1) What is bottom-up parsing?
    2) What is loader?
    3) What is Macro?

Q.3 A) Answer the following question.(Any two)   **08**
    1) What is Syntactic analysis? Explain in brief.
    2) What is binary search? Explain with an example.
    3) Define the term Assembler and compiler.

Q.3 B) Answer the following question.(Any One)   **06**
    1) Draw the flowchart for pass 2 of a two pass assembler.
    2) Draw the block diagram of the phases of compiler.

Q.4 A) Answer the following question.(Any Two)   **10**
    1) Describe the four tasks performed by Macro-processor.
    2) Describe the design of absolute loader.
    3) Define Parser. Draw the parse tree for the string abbccd.

Q.4 B) Answer the following question.(Any One)   **04**
    1) Explain the direct linkage loader.
    2) Explain the conditional macro expansion.

Q.5 Answer the following question.(Any two)   **14**
    a) Describe the databases used in lexical, syntactic and Semantic phases of compiler.
    b) Write a short note on design of assembler.
    c) Explain different data structures used by Phase-II assembler.

Seat No.

B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
SOFTWARE ENGINEERING – I (Paper - 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.

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

1) The first step in Software Development Life Cycle is _____.
   a) Preliminary Investigation
   b) System Design
   c) System Testing
   d) System Coding

2) Which model can be selected if user is involved in all the phases of SDLC?
   a) Waterfall model
   b) Prototyping model
   c) RAD model
   d) None of these

3) _____ includes a review of the existing procedure and information flow.
   a) Feasibility study
   b) Feasibility report
   c) System analysis
   d) System design

4) Which of the following is not related with system analyst?
   a) Collection of requirement
   b) User training
   c) Creating model
   d) Programming

5) Weather forecasting is an example of _____ system.
   a) Deterministic
   b) Probabilistic
   c) Open
   d) Closed

6) Problem identification is done during _____ phase.
   a) System design
   b) System analysis
   c) System testing
   d) All of the above

7) The inter-connections & interaction between the subsystems are called as _____.
   a) Environment links
   b) Connecting links
   c) Interfaces
   d) Control lines

8) Which of the following model is not suitable for accommodating any changes?
   a) Prototyping
   b) Spiral
   c) Waterfall
   d) None of these

Q.2 Answer any four of the following questions. 08
   1) Define the term System.
   2) What is System analysis?
   3) Define Deterministic and Probabilistic system.
   4) What are the steps in prototyping model?
   5) Write the characteristics of system.
   6) Who is 'System Analyst'?

Q.3 **Write short notes. (Any Two)** 08
1) Feasibility study.
2) Characteristics of the software.
3) Elements of the system.

Q.4 **Answer any two of the following questions.** 08
1) Differentiate between the System Analysis and System Design.
2) Explain the various roles played by the system analyst.
3) Explain the waterfall model.

Q.5 **Answer any one of the following questions.** 08
1) Explain the various Fact finding techniques in detail.
2) Explain different phases of System Development Life Cycle.
3) Explain any four qualities of software.

Seat No.

B.C.A. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
BASICS OF MATHEMATICS – I (Paper - I)

Day & Date: Wednesday, 20-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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 square matrix $A = [a_{ij}]$ is said to be an upper triangle matrix iff _____.
    a) $a_{ij} = 0$, for $i > j$ b) $a_{ij} = 0$, for $i < j$
    c) $a_{ij} \neq 0$, for $i > j$ d) $a_{ij} = 0$, for $i \neq j$

2) If $A = [a_{ij}]$ m×n and $B = [b_{ij}]$ n×p be the two matrices then order of resultant product matrix $A \cdot B$ is _____.
    a)   m×n   b)   n×p
    c)   p×m   d)   m×p

3) If $A = \{a, b, c, d, e\}$, $B = \{x, y, z\}$ then cardinality of the set $A \cap B$ is _____.
    a) $\emptyset$ b)   8
    c)   0   d)   cannot be determined

4) If no element of set A is related to any element of set B then the relation R is called as _____ relation.
    a)   universal   b)   unique
    c)   void   d)   symmetric

5) The converse of the statement p↔q is _____.
    a)   ~p→~q   b)   q→p
    c)   ~q→~p   d)   ~(p→q)

6) In logic $p \wedge (q \wedge r) = (p \wedge q) \wedge r$ is _____ law.
    a)   Distributive   b)   Commutative
    c)   DeMorgan's   d)   None of these

7) The truth value of the statement p→q is true if and only if _____.
    a)   Both statements p and q have different truth values.
    b)   Both statements p and q have same truth values.
    c)   p is true and q is false
    d)   q is true and p is false.

8) A matrix which is obtained by interchanging rows and columns is called as _____ matrix.
    a)   symmetric   b)   anti-symmetric
    c)   transpose   d)   skew-symmetric

Q.2 **Answer any four of the following questions.** **08**
1) Define scalar matrix with suitable example.
2) Let $A = \begin{bmatrix} -1 & 3 \\ 4 & 5 \end{bmatrix}_{2\times2}$ and $B = \begin{bmatrix} 3 & -2 \\ 0 & 1 \end{bmatrix}_{2\times2}$ then find the matrix $A + B$ and $A - B$.
3) Define equivalence relation.
4) State DeMorgan's Laws in logic.
5) Let $A = \{a, b, c, d\}$ and $B = \{p, q, r\}$ then find the Cartesian product $A \times B$ and $B \times A$.
6) Define complement of set A.

Q.3 **Answer any two of the following questions.** **08**
1) Prepare truth table for the statement p→q, it's converse, it's inverse and contrapositive form.
2) Let $A = \begin{bmatrix} 2 & 1 \\ -3 & 4 \\ 0 & -2 \end{bmatrix}_{3\times2}$ and $B = \begin{bmatrix} 0 & 2 & -1 \\ -2 & 3 & 5 \end{bmatrix}_{2\times3}$
   Find the product matrix $A \cdot B$.
3) Let $A = \{a, b, c, d\}$. Let R be the relation defined on the set A given by $R = \{(a, a), (a, b), (c, a), (c, d), (b, a), (b, b), (d, a), (d, b), (d, d)\}$. Write matrix of relation R. Also draw digraph of R. Also write in-degree and out-degree of each element in A.

Q.4 **Answer any two of the following questions.** **08**
1) Let $U = \{a, b, c, d, e, f, g, h, i, j\}$. Let $A = \{a, c, d, f, g\}$ and $B = \{b, c, d, e, h, j\}$ be the subsets of set U, Then write the following sets $A \cup B, B', A - B, A \oplus B$.
2) Show that $\sim(p \vee q) \equiv \sim p \wedge \sim q$.
3) Define symmetric matrix and lower triangular matrix with suitable example.

Q.5 **Answer any one of the following questions.** **08**
1) Define transitive closure of relation. Let $A = \{1,2,3,4\}$. Let R be the relation defined on the set A given by $R = \{(1,1), (1,2), (2,3), (3,4), (3,3), (4,1)\}$. Find transitive closure of relation R by using Warshall's algorithm. Also draw digraph of R*.
2) State distributive laws in logic. Determine whether the following statement is tautology or contradiction or neither.
   $[(p \wedge q) \rightarrow \sim r] \leftrightarrow \sim[(p \rightarrow \sim q) \vee (\sim p \leftrightarrow r)].$

Seat No.

B.C.A. (Semester - I) (New) (CBCS) Examination Nov/Dec-2019
Science (Paper – II)
STATISTICAL METHODS - I

Day & Date: Friday, 22-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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

Q.1   Choose most correct alternative.   08

1) Testing of blood is done by _____ method.
    a) Census   b) Sampling
    c) Stratified sampling   d) None of these

2) A variable is said to be continuous of it takes _____ no. of values.
    a) Finite   b) Countable infinite
    c) Uncountable infinite   d) None of these

3) Histogram is used to determine _____.
    a) A.M.   b) Median
    c) Mode   d) All of these

4) To obtain _____ a measure of central tendency it is necessary to arrange the data in ascending or decending order.
    a) A.M.   b) Median
    c) Mode   d) All of these

5) A measure of dispersion that based on all observations is _____.
    a) S.D.   b) Range
    c) Coefficient of range   d) None of these

6) If two variables are changes in same direction, then there is _____ correlation.
    a) +ve   b) -ve
    c) Non-linear   d) None of these

7) The line of regression Y on X is used to estimate _____.
    a) Y for known value of X   b) X for known value of Y
    c) (a) and (b) both   d) None of these

8) The empirical relation between A.M., median and mode is _____.
    a) (A.M. – Mode) = 3 (A.M. – Median)
    b) (A.M. – Median) = 3 (A.M. – Mode)
    c) (Mode – Median) =2 (A.M. – Median)
    d) None of these

Q.2   Answer any 4 of the following.   08

1) Define – Population and sample.
2) Define – Positive and negative correlation.
3) Define – Regression.
4) The A.M. of observations – 30, 28, 38, 22, K, 25 is 30. Find value of K.
5) Find range and coefficient of range for the data: 20, 17, 14, 28, 15, 27, 21.
6) The regression coefficient are $b_{yx} = 08$ and $b_{xy} = 1.4$. Find correlation coefficient between X and Y.

Q.3   **Write short note on any 2 of the following**   **08**
    1)   Simple Random Sampling method
    2)   Merits and Demerits of A.M.
    3)   Lines of regression.

Q.4   **Answer any two of the following questions.**   **08**
    1)   Find median for the data given below.

Class:	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30
f :	4	6	13	8	3

    2)   Find S.D. and range for the data given below.

x :	4	6	8	10	12
f :	2	5	9	6	3

    3)   Given - $n = 10, \sum X = 100, \sum Y = 110, \sum X^2 = 1100, \sum Y^2 = 1440,$
        $\sum XY = 1230$
        Find correlation coefficient between X and Y.

Q.5   **Answer any one of the following questions.**   **08**
    1)   Draw histogram to represent the following data and obtain mode.

Class :	25 - 40	40 - 55	55 - 70	70 - 85	85 - 100	100 - 115	115 - 130
f :	10	14	18	22	20	13	9

    2)   The equations of line of regression are 8x – 10y = 40 and 15x – y = 0.
        Find
        a) $\overline{X}, \overline{Y}$
        b) $\sum xy$

Seat No.	

B.C.A. (Semester - I) (New) (CBCS) Examination Nov/Dec-2019
DIGITAL ELECTRONICS PAPER - I

Day & Date: Monday, 25-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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

Q.1 Choose the correct alternatives from the options and rewrite the sentence.   **08**

1) 4 to 1 MUX would have _____.
   a) 2 inputs   b) 3 inputs
   c) 4 inputs   d) 5 inputs

2) Most demultiplexers work on following conversions.
   a) Decimal to Hexa   b) Single input, multiple output
   c) AC to DC   d) None of these

3) Converting binary number into gray code 100101.
   a) 101101   b) 001110
   c) 110111   d) 111001

4) Which input values will cause an AND logic gate to produce a HIGH output?
   a) At least one input is HIGH   b) All inputs are HIGH
   c) All inputs are LOW   d) At least one input is LOW

5) In which operation carry is obtained?
   a) Subtraction   b) Addition
   c) Multiplication   d) Both a & b

6) The Boolean expression Y=(AB)' is logically equivalent to which gate?
   a) NAND   b) NOR
   c) AND   d) OR

7) Which of the following expression is in the sum-of-product form?
   a) (A+B)(C+D)   b) (A*B)(C*D)
   c) A*B + C*D   d) None of these

8) 2's complement of 11001011 is _____.
   a) 01010111   b) 11010100
   c) 00110101   d) 11100010

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

1) Why hexadecimal number system called as alpha numeric number system?
2) Which gates are called universal gates & why?
3) Define Nibble & byte.
4) Define Multiplexer.
5) What is binary number system?
6) Explain how to convert Gary to Binary code.

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

1) Explain steps of converting binary to hexadecimal conversion with example.
2) Explain half adder.
3) What are the applications of multiplexer?

Q.4 **Attempt any two of the following questions.** **08**
    a) Explain full subtractor.
    b) Define logic gates with its symbol & truth table.
    c) Explain De-Multiplexer with its type.

Q.5 **Attempt any one of the following questions.** **08**
    a) Explain K-map & its types in detail with example.
    b) Explain 3 bit asynchrous counter.

Seat No.

Set P

B.C.A. (Semester - I) (New) (CBCS) Examination Nov\Dec-2019
Development of Human Skills (Paper - II)

Day & Date: Wednesday, 27-11-2019   Max. Marks: 40
Time: 03:00 PM To 05:00 PM

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)   Bad parts of personality can be termed as _____ of the personality.
   a) Weakness   b) Threat
   c) Strength   d) Opportunity

2)   Oral communication is also known as _____ communication.
   a) one way   b) non-verbal
   c) verbal   d) Interactive

3)   A settled way of thinking or feeling about something means _____.
   a) Behaviour   b) Personality
   c) Attitude   d) Communication

4)   Which of these must be avoided in a group discussion?
   a) Speaking facts   b) Asking questions
   c) Speaking fast   d) Speaking with clarity

5)   _____ skills are assessed in an Interview.
   a) Listening   b) singing
   c) dancing   d) Blabbering

6)   A _____ letter is a synonymous to rejection letter and decline letter.
   a) Inquiry   b) Invitation
   c) Refusal   d) Job acceptance

7)   The _____ blog is an ongoing online diary or commentary written by an individual, rather than a corporation or organization.
   a) Travel   b) Personal
   c) Cultural   d) Fashion

8)   _____ has been ranked as no. 1 Indian multinational IT Firm which generate it's revenue from various domains.
   a) Infosys   b) Tech Mahindra
   c) Wipro   d) TCS

Q.2   Attempt any four of the following question.   08
   a) Define fashion Blog.
   b) Full from of IBM.
   c) Define group discussion.
   d) What is posture?
   e) What is a story writing?
   f) Define public speaking.

Q.3   Write short notes (any two)   08
   a) Personality traits
   b) Types of Attitude
   c) Microsoft corporation

Q.4 Attempt any two of the following questions. 08
  a) Write a job application letter for the post of 'Sales Manager' in Satyam Corporation Pune.
  b) Explain the concept of SWOT analysis.
  c) What is the presentation skills and it's importance? In brief.

Q.5 Answer the following questions. (any one) 08
  a) What is meant by interview? Explain the types of Interview.
  b) Explain types of letters in brief and draw the Lay-out of a Business Letter.