Seat No.

Set **P**

B.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018
FUNDAMENTALS OF COMPUTER

Time: 2½ Hours

Max. Marks: 70

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

Q.1 Choose correct alternatives. 14

1) The computers of fourth generation used _____ circuits.
   a) VLSI
   b) VLLI
   c) ULSI
   d) SSI

2) _____ is not an auxiliary memory.
   a) RAM
   b) Magnetic disk
   c) CD
   d) Magnetic Tape

3) A light sensitive device that converts drawing, printed text or other images into digital form are _____.
   a) keyboard
   b) plotter
   c) scanner
   d) OMR

4) _____ is the protocol which provides E-mail facility among different hosts.
   a) FTP
   b) SNMP
   c) TELNET
   d) SMTP

5) _____ is known as father of modern digital computer.
   a) John Von Neumann
   b) Blaise Pascal
   c) Garden Moorie
   d) Charles Babbage

6) _____ takes a single instruction of program and converts into object code.
   a) Compiler
   b) Interpreter
   c) Both a and b
   d) None of these

7) _____ is the type of multiprocessing O.S. in which system shares single primary memory by all processor.
   a) Tightly-Coupled
   b) Loosely-Coupled
   c) Both a and b
   d) None of these

8) _____ is also known as firmware.
   a) RAM
   b) ROM
   c) Magnetic Disk
   d) Magnetic Tape

9) The base of octal number system is _____.
   a) 16
   b) 10
   c) 8
   d) 2

10) The storage capacity of floppy disk is _____.
    a) 1.44 MB
    b) 1.44 GB
    c) 1.44 KB
    d) 1.44 TB

11) In MICR commonly used font is _____.
    a) F13D
    b) E13B
    c) F13B
    d) E13D

12) RAM can be plugged into _____ of computers.
   a) SIMM (Single-in-line memory module)
   b) Expansion slot
   c) Both a and b
   d) None of these

13) The conversion of analog signals to digital signals in modem is known as
_____.
   a) Demodulation   b) Modulation
   c) Moderation   d) None of these

14) A _____ is a biometric technique that uses the unique patterns on a person's retina blood vessels.
   a) Voice recognition   b) Character recognition
   c) Retinal scanning   d) Fingerprints

Q.2   Attempt any seven of the followings.   14
   a) What is Computer?
   b) What is real-time operating system?
   c) Define the semiconductor memory? List the types of RAM.
   d) What is modem?
   e) List the component of operating system.
   f) Define periodic back-up?
   g) What is interpreter?
   h) List the types of computer.
   i) What is math co-processor?

Q.3   A) Attempt any two of the followings:-   10
   1) List the output devices. Explain dot-matrix printer.
   2) What is virus? What are the characteristics of viruses?
   3) Explain the block diagram of computer.

   B) Write a short note on spooling.   **04**

Q.4   Attempt any two of the followings:-
   a) How to secure data stored in computer system from unauthorized access?   **07**
   b) What is network topology? Explain types of network topologies.   **07**
   c) Carry out the following questions:- (any three)   **07**
       1) $(111.101)_2=(?)_{10}$
       2) $(752)_8=(?)_2$
       3) $(2CA)_{16}=(?)_8$
       4) $(11.10)_{10}=(?)_2$

Q.5   Attempt any two of the following:-
   a) List the generations of computer. Explain the second and third generations   **07**
   briefly.
   b) Define computer language? Give the advantages and disadvantages of   **07**
   machine language.
   c) What is operating system? Explain functions of operating system.   **07**

Seat No.	

B.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018
BASICS OF 'C' PROGRAMMING

Time: 2½ Hours   Max. Marks: 70

Instructions: 1) All Questions are compulsory.
2) Figures to the right indicate full marks.
3) Each questions carry equal marks.

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

1) _____ are only in lower case letters.
   a) Keywords   b) Identifiers
   c) Variables   d) Constants

2) _____ is the smallest part of C program.
   a) Function   b) Macro
   c) Token   d) None

3) The label in goto statement is _____.
   a) Keyword   b) Identifier
   c) Both a and b   d) Constant

4) _____ is used to declare symbolic constant in program.
   a) #define   b) const
   c) both a and b   d) none of these

5) A _____ is an identifier assigned to memory location where data is stored.
   a) Operator   b) Variable
   c) Masking   d) Both b and c

6) The position of the last element of array is _____.
   a) 0   b) 1
   c) 2   d) size of the array – 1

7) C is what kind of language?
   a) Machine   b) Assembly
   c) Procedural   d) Strictly-typed

8) The _____ function is used to display output on to the screen.
   a) scanf()   b) printf()
   c) getchar()   d) getch()

9) _____ format code is used for single long integer type value.
   a) %d   b) %ld
   c) %dbl   d) None

10) _____ is only allowed in control string of scanf().
    a) back slash characters   b) format code
    c) characters   d) none

11) _____ allows building of program logic.
    a) Algorithm   b) Flowchart
    c) Both a & b   d) None

12) _____ is the return type of function, if no value returned from the function.
   a) int   b) void
   c) null   d) float

13)_____ and _____ are ternary operators.
   a) ? !   b) ? :
   c) ? ,   d) ? /

14) C language contains _____ Keywords.
   a) 23   b) 32
   c) 36   d) 63

Q.2   **Attempt any seven of the followings.**   **14**
  a) Define Pseudo Code?
  b) State any four keywords in c.
  c) State the syntax scanf() function.
  d) State the syntax of while statement.
  e) Define Array?
  f) Write the syntax of function Declaration.
  g) Define Actual parameter and formal parameter.
  h) Write the use of function.
  i) State any four Data Types in C language.

Q.3   **a)** **Solve any two of the followings:-**   **10**
     1) Define Flowchart? Explain symbols in flowchart.
     2) Explain the structure of C Program.
     3) Explain unconditional Statement in C.
  b) Write a program in c to calculate the factorial of a given number.   **04**

Q.4   **Solve any two of the followings:-**   **14**
  a) Explain the different types of operators in C.
  b) How to initialize the array? Explain with Example.
  c) Write the different between Local variable and Global Variable.

Q.5   **Solve any two of the following:-**   **14**
  a) Define Recursion? Explain with Example.
  b) Write a program in c to accept 10 numbers from keyboard and Display it in Ascending order.
  c) Explain switch case statement with example.

Seat No.	

B.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018
FINANCIAL ACCOUNTING WITH TALLY

Time: 2½ Hours   Max. Marks: 70

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

Q.1 Select correct alternatives and rewrite statements:-   **14**

1) Gradual and permanent decrease in the value of assets is known as _____.
   a) Discount   b) Interest
   c) Depreciation   d) Installment

2) _____ is an explanation of the journal entries passed.
   a) Invoice   b) Voucher
   c) Transaction   d) Narration

3) The journal is called a book of _____ Entry.
   a) Original   b) Ledger
   c) Real   d) Profit

4) LIFO stands for _____.
   a) First In First Out   b) Last in Last Out
   c) Last in First Out   d) First in Last Out

5) Goodwill is an _____ assets.
   a) Intangible   b) Current
   c) Long term   d) Secured

6) Closing stock is valued at cost price or market price whichever is_____.
   a) More   b) Less
   c) Excess   d) God

7) Sales journal records only _____ Sales of goods.
   a) Debit   b) Credit
   c) Excess   d) None

8) Tally provides a set of _____ number of predefined groups mainly based on the traditional, methods of accounting system.
   a) 15   b) 28
   c) 32   d) 30

9) In receipt voucher cash account has _____ Type of balance.
   a) Cash   b) Journal
   c) Credit   d) Debit

10) To print the invoice _____ key is used.
    a) F3   b) Alt + F10
    c) Ctrl + P   d) Alt + P

11) In tally for Receipt voucher _____ Key is used.
    a) F6   b) F7
    c) F8   d) F9

12) To configure a company _____ key is used
   a) F4
   b) F2
   c) F12
   d) Alt + F12

13) The entire ledger is summarized in the form of a _____.
   a) Journal
   b) Balance sheet
   c) Final account
   d) Trial Balance

14) In tally, to change the features of the company _____ key is used.
   a) F12
   b) F4
   c) F11
   d) F1

Q.2 Attempt any seven of the followings.   **14**
   a) SLM stands for
   b) Liability
   c) Ledger
   d) FIFO stands for
   e) Depreciation
   f) TDS
   g) Contra
   h) Stock Groups
   i) Godowns

Q.3 A) Attempt any two of the following:-   **10**
       1) Subsidiary Book.
       2) MIS Reports in Tally.
       3) Explain the features of Tally?

   B) Explain the advantages and disadvantages of Double entry system.   **04**

Q.4 Answer any two of the followings:-   **14**
   a) Define Accounting and Explain Internal and External users of account.
   b) Write a short note on Scenario Management.
   c) Ashok Industries purchased a machinery of Rs. 80,000 on 1st Jan 2005.
       Another Machinery was purchased on 1st July 2006 for Rs. 60,000. Company
       decided to charge depreciation at 10% per annum under **Reducing Balance
       Method** on 31st December every year.
       Prepare a machinery account for three year.

Q.5 Answer any two of the following:-   **14**
   a) From the following information prepare store ledger account of product XYZ
       on the basis of **first in first out method**.

Date	Particular	Units	Rate per Units
1/12/2016	Opening Stock	500	1.90
3/12/2016	Receipts	4,000	2.00
14/12/2016	Receipts	2,500	2.10
15/12/2016	Issues	3,000	-
20/12/2016	Receipts	4,000	2.30
21/12/2016	Issues	6,000	-
23/12/2016	Receipts	7,000	2.20
28/12/2016	Issues	4,500	-
31/12/2016	Issues	2,200	-

b) Define Vouchers and explain different types of voucher in Tally.

c) Journalize the following transaction in the books of Shriram for the month of **January 2016**

1. Stated business with cash Rs.1,00,000 as his capital
2. Purchased goods on credit from Laxman Rs. 43,000
5. Cash sales for Rs. 62,000
6. Salary paid Rs. 2,000
7. Sold goods to Bharat on 30 days credit Rs. 17,000
8. Paid office rent Rs. 3,000
31. Withdraw for domestic (household) expenses Rs. 7,500

Seat No.

B.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018
COMMUNICATION SKILLS

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Fill in the blanks with the correct alternatives:-   **14**
1) Disturbance during transmission of a message on telephone is an example of _____ barrier.
   a) Socio-psychological   b) Cultural
   c) Semantic   d) Mechanical

2) _____ contains name and address of a company.
   a) Main body of latter   b) Letter head
   c) Salutation   d) Enclose

3) A list of subject to be discussed in a meeting is called _____.
   a) Notice   b) Agenda
   c) Minutes   d) Check-list

4) _____ is the process of converting ideas into words.
   a) Coding   b) Uncoding
   c) Decoding   d) Encoding

5) Reports that are submitted at regular intervals of time are called _____ report.
   a) Periodic   b) Routine
   c) Weekly   d) Annual

6) _____ communication means the communication between two or more persons which is connected officially to each other.
   a) Grapevine   b) Casual
   b) Formal   c) Informal

7) The 7 C s refers to the _____ of communication.
   a) Principles   b) Objectives
   c) Process   d) Importance

8) Order and warning are forms of _____ communication.
   a) Upward   b) Downward
   c) Horizontal   d) Diagonal

9) _____ communication means communication with other business houses.
   a) Internal   b) External
   c) Formal   d) Informal

10) _____ is an example of electronic communication?
    a) Letter   b) Email
    c) Memo   d) Notice

11) _____ is aspects of body language is entirely unconscious involuntary.
    a) Facial expression   b) Gesture & posture
    c) Personal appearance   d) All of these.

12) Closed mind in communication shows _____ barriers.
   a) Physical   b) Mental
   c) Socio-psychological   d) Semantic

13) _____ means the information must be brief and to the point.
   a) Concise   b) Complete
   c) Concrete   d) Courteous

14) _____ placed between three or more items in a series.
   a) Comma   b) Semi colon
   c) Full stop   d) Question mark

Q.2 Write the answer of the following question:- (Any Seven)   14
  a) What is mean by report?
  b) Write definition of communication?
  c) What is mean by meeting?
  d) What is downward communication?
  e) What is role of sender in communication?
  f) Explain clarity principle.
  g) What is letter head?
  h) What is mean by minutes?
  i) Explain information objective.

Q.3 a) Write the answer of the following question:- (Any Two)   10
    1) What is upward communication? Explain their limitations in organization.
    2) What is mean by barriers of communication? Explain semantic barriers.
    3) Write any four principles of communication.
  b) Use of Internet in modern office communication.   **04**

Q.4 Write the answer of the following questions:- (Any Two)   14
  a) Write importance of communication in business?
  b) Prepare a Resume for the post of software engineering in reputed company.
  c) What is process of communication? Explain with diagram.

Q.5 Write the answers of the following questions:- (Any Two)   14
  a) Write layout of the business communication.
  b) Explain socio-psychological Barriers.
  c) Explain aspects of body language.

Seat No.		Set	P

B.C.A (Semester - I) (CBCS) Examination Mar/Apr-2018
DISCRETE MATHEMATICS

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Choose and write a correct answer from given alternative.   14

1) If all the entries of given statement pattern are 'T' then it is called as _____.
   a) Contradiction   b) Tautology
   c) Contra positive   d) Contingent

2) If aRb and bRa $\Rightarrow$ a = b then relation R is called as _____ relation.
   a) Antisymmetric   b) Symmetric
   c) Reflexive   d) Transitive

3) If $A = \{0, 1, 2, 3, 4, 5, 6\ 7, 8, 9, 10\}$ then $|A|$ = _____.
   a) 12   b) 14
   c) 10   d) 11

4) If $|A|$ =12, $|B|$ = 7 if A & B are disjoint sets. Then $|A \cup B|$ = _____.
   a) 19   b) 20
   c) 0   d) 5

5) A set having only one element is called as _____.
   a) Power set   b) Disjoint set
   c) Empty set   d) None of these

6) The converse of statement p→q is _____.
   a) p→q   b) q→p
   c) ~p→ ~q   d) ~p ∩ ~q

7) Complement of null graph is _____.
   a) Complete graph   b) Null graph
   c) Simple graph   d) None of these

8) If $A = \{0, 1, 2, 3, 4, \}$, $B = \{0, 1, 3,5,6, 7\}$. Then $|A \cup B|$ = _____.
   a) 7   b) 8
   c) 11   d) 0

9) If $A \cap B = \phi$ then A & B are _____ sets.
   a) Disjoint   b) Null
   c) Identical   d) Reflexive

10) If graph G contains 4 vertices & g edges then order of its adjacency matrix is _____.
   a) 4 X 9   b) 4 X 4
   c) 9 X 4   d) 9 X 9

11) If f(x) = x^2+2x+1, then f(2) = _____.
   a) 9   b) -8
   c) 4   d) 2

12) A graph without loop and parallel edge is called as _____.
   a) Null graph
   b) Disjoint graph
   c) Simple graph
   d) Multi graph

13) Graph K_8 is _____ regular graph.
   a) 8
   b) 7
   c) 6
   d) 5

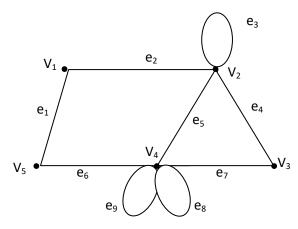14) The statement PV~$(P \cap q)$ _____.
   a) Contradiction
   b) Tautology
   c) Contingency
   d) None of the above

Q.2 Answers to the following. [Any seven]   **14**
   a) If $|U| = 15$, $|A| = 7$, $|B| = 5$ & $|A \cap B| = 3$ find $|A \cup B|$ and $|(A \cup B)'|$
   b) Write the converse and inverse of statement:-
      "If man is rich then he is happy"
   c) If A = {1, 2, 3, 5 , 7, 9, 10} and B ={2, 3, 4, 7, 8,10, 11} find A – B and B – A.
   d) State the Inclusion – Exclusion principle for two sets.
   e) Find 'a' if $f(x) = ax - 2$ and $f(2) = 4$.
   f) Consider following graph. (G)

      Draw the graph G – V$_1$ and G – {e$_3$, e$_5$, e$_6$}
   g) Define union of two sets.
   h) Define complete graph with example.
   i) If A = {1, 2} find p(A).

Q.3 A) Attempt any two of the following.   **10**
   1) Let R = {(a, a), (a, b), (a, c), (b, c), (c, b)} be the relation defined on set
      A = {a, b, c}. Draw the diagraph of relation R. find in degree and out degree
      of each vertex.
   2) If U = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10} be Universal set A = {1, 2, 4, 6, 7, 9} and
      B = { 2, 3, 7, 8, 10}. Verify that
      i) $(A \cup B)' = A' \cap B'$
      ii) $(A \cap B)' = A' \cup B'$
   3) A function f: R→ R defined by $f(x) = \frac{3x-11}{7}$, for $x \in R$, show that function is
      one- one and onto.
   B) Prove that $p \cap (qVr) \equiv (p \cap q) V (p \cap r)$.   **04**

Q.4 **Attempt any two of the following.**
  a) How many integers between 1 to 567 which are divisible by 3 or 5 or 7?
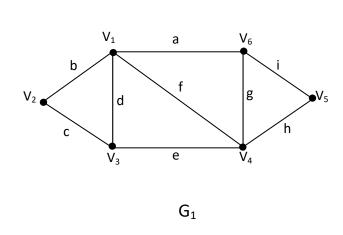 **b)** Test the validity of following argument by truth table.
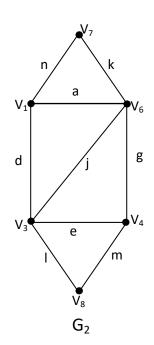 $p \rightarrow q, q \rightarrow r \vdash p \rightarrow r$

  c) Define transitive closure R*.
    If $R = \{(1, 1), (1, 2), (1,3), (2, 3), (3, 1), (3, 2)\}$ be the relation on set A = {1, 2, 3}
    find transitive closure R* by Warshall's Algorithm.
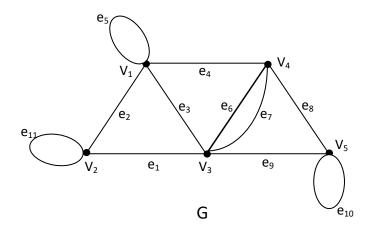
Q.5 **Answer the following. (Any 2)** 14
  a) Consider the graphs.

G_1

G_2

    Draw $G_1 \cup G_2$ and $G_1 \cap G_2$

  b) Consider $U = \{x \mid x \in N, x \leq 12\}$ be universal set
    $A = \{1, 3, 4, 6, 12\},$ $B = \{3, 4, 5, 7, 8, 11\}$
    Find:-
    1) A' 2) B' 3) $A \cup B$ 4) $A \cap B$ 5) $A' \cup B$
    6) $A - B$ 7) $A \cup B'$
  c) Find Adjacency matrix $(A(G))$ and incidence matrix $(I(G))$ of following graph.

G

Seat No.	

B.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018
ADVANCE PROGRAMMING IN C

Time: 2½ Hours   Max. Marks: 70

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

Q.1 a) Choose correct alternatives: -   **10**

1) What will happen after compiling and running following code?
```
main()
{
    printf("%p", main);
}
```
a) Error   b) Will make an infinite loop
c) Some address will be printed   d) None of these

2) C program _____.
a) Must contain at least one function
b) Needs input data
c) Need not contain any function
d) None of the above

3) Which of the following are correctly frmed #define statements in C?
a) #define CUBE (X) (X*X*X);   b) #define CUBE(x) (X*X*X)
c) #define CUBE(X)(X*X*X)   d) #define CUBE(X) {X*X*X}

4) What will be printed after compiling and running the following code?
```
main()
{
    char *p;
    printf("%d %d",sizeof(*p), sizeof(p));
}
```
a) 1   1   b) 1   2
c) 2   1   d) 2   2

5) For binary files, a _____ must be appended to the mode string.
a) Nothing   b) "b"
c) "binary"   d) "01?

6) If there is any error while opening a file, fopen will return?
a) Nothing   b) EOF
c) NULL   d) Depends on compiler

7) For a typical program, the input is taken using
a) scanf   b) Files
c) Command-line   d) All of the mentioned

8) What is the use of getchar()?
a) The next input character each time it is called
b) EOF when it encounters end of file
c) Both a and b
d) None of the mentioned

9) User-defined data type can be derived by _____.
   a) struct   b) enum
   c) typedef   d) All of the mentioned

10) Number of bytes in memory taken by the below structure is?
   struct test
   {
       int k;
       char c;
   };
   a) Multiple of integer size   b) Integer size+character size
   c) Depends on the platform   d) None of the mentioned

Q.1 b) State the following statement True or False:-   **04**
   1) Are the expression *ptr++ and ++*ptr are not same?
   2) The #include preprocessor directive is used to insert one file into another.
   3) A macro must always be defined in capital letters.
   4) One of elements of a structure can be a pointer to the same structure.

Q.2 Answer any Seven of the following:-   **14**
   1) Write use #pragma directives.
   2) What is macro?
   3) Use of alloc.h header file.
   4) What is union? With syntax.
   5) What is pointer? With example.
   6) Write syntax of Nested structure.
   7) State return types used in C language.
   8) Write the purpose of ftell() and rewind() function.
   9) Write the syntax of pointer initialization.

Q.3 A) Write the Answer of the following questions:- (Any Two)   **10**
   a) Explain Relationship between Array and Pointer.
   b) Write note a parameterized macros.
   c) Write a program in C to access a student information (roll, name, address, percentage) and print as it is by using union.
   B) When to Use Call by Value and when to use Call by Reference?   **04**

Q.4 Answer any two of the following:-   **14**
   a) What is file? Explain its modes.
   b) What is structure? Explain pointer to structure with example.
   c) Write a program in C copy the content of one file in to another file.

Q.5 Answer any two of the following:-   **14**
   a) What is Preprocessor? Explain Preprocessor directives.
   b) What is String? Explain string handling functions.
   c) Write a program in C to swap two numbers by using pointer.

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

B.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018
WEB TECHNOLOGY

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Choose correct alternatives   14

1) $(".block").animate({left: "-=50px"}, "slow"); This a valid script
   a) True   b) False

2) What does the following return? Number(null);
   a) 0   b) Undefined
   c) 1   d) Null

3) _____ String prototype method is capable of changing a character from a string.
   a) delete()   b) remove()
   c) replace()   d) destroy()

4) '&' Operator is _____ operator.
   a) a bitwise   b) an assignment
   c) conditional   d) arithmetic

5) Functions in JavaScript are always _____.
   a) in the global scope   b) loops
   c) objects   d) operators

6) Which of the following is a JavaScript comment?
   a) <!–comment– >   b) // comment
   c) \\ comment   d) # comment

7) _____ property is used to create a small-caps effect.
   a) font-family   b) font-style
   c) font-variant   d) font-weight

8) Which tag creates a check box for a form in HTML?
   a) <checkbox>   b) <input type="checkbox">
   c) <input=checkbox>   d) <input checkbox>

9) HTML documents are saved in _____.
   a) Special binary format   b) Machine language codes
   c) ASCII text   d) None of above

10) JQuery uses _____ selectors to select elements.
   a) HTML   b) CSS
   c) style   d) none

11) _____ is a built - in JavaScript function which can be used to execute another function after a given time interval.
   a) Timeout( )   b) TimeInterval( )
   c) setTimeout( )   d) All

12) You can refresh the webpage in JavaScript by using _____ method.
   a) window.reload   b) location. Reload
   c) window. Refresh   d) page.refresh

13)_____ is the correct CSS syntax.
   a) body {color: black}   b) {body;color:black}
   c) {body:color=black(body}   d) body:color=black

14) jQuery is a library built in the JavaScript language that helps to use JavaScript language.
   a) True   b) False

Q.2 Attempt any seven of the followings.   **14**
1) Which browsers support HTML5?
2) What is the use of CSS?
3) Write the primitive JavaScript Data types.
4) What is the importance of DOCTYPE in HTML?
5) List the advantages of JavaScript.
6) Write the use of JQuery callback function.
7) What is the purpose of 'aside' tag in HTML5?
8) Write fastest selectors and slow selectors in JQuery.
9) Write various Media tags in HTML5.

Q.3 A) Attempt any two of the followings:-   **10**
1) What is hyperlink? Explain different properties of hyperlink using CSS.
2) What is Event handling in JavaScript? Explain with example.
3) Explain any two JQuery Effect methods.

B) Explain the difference between <div> and <frame> with suitable example.   **04**

Q.4 A) Attempt any two of the followings:-   **10**
1) Explain various types of Lists in HTML.
2) Write a note on Form Controls in HTML.
3) Display clock in the text box (use JavaScript).

B) List the names chosen for CSS media types.   **04**

Q.5 Attempt any two of the following:-   **14**
a) What are the various attributes of <Table>tag? Explain with example.
b) Explain different types of CSS with example.
c) Write a note on DOM.

Seat No.	

B.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018
SOFTWARE ENGINEERING

Time: 2½ Hours

Max. Marks: 70

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

Q.1 a) Choose correct alternatives: - 10

1) Data Dictionary is also called as _____.
   a) Catalog
   b) Central repository
   c) Both a & b
   d) None of the above.

2) A television is an example of _____ system.
   a) Deterministic
   b) Probabilistic
   c) Open
   d) Closed

3) Which of the following model of SDLC based on risk analysis of the proposed system?
   a) Waterfall
   b) Spiral
   c) Prototyping
   d) None of these

4) Which of the following is not type of decision table?
   a) Limited-Entry
   b) Extended-Entry
   c) Mixed-Entry
   d) Double-Entry

5) History files, transaction reports are updated by _____.
   a) TPS
   b) MIS
   c) DSS
   d) EIS

6) Radius of spiral model represents _____.
   a) Total cost incurred
   b) Future risk
   c) Entity
   d) Attributes

7) _____ are sometimes also referred as 'Bubble Diagram'.
   a) Flowchart
   b) ER diagram
   c) Decision Table
   d) DFD

8) _____ is an agreement between system developer and end user.
   a) Requirement specification
   b) Requirement Investigation
   c) Both a and b
   d) None of these

9) Design phase will usually be _____.
   a) Top-down
   b) Bottom-up
   c) Random
   d) None of these

10) _____ ensures an internal consistency of data, retrievals, maintenances, and stability.
   a) DFD
   b) ERD
   c) Normalization
   d) None of these

Q.1 **b)** **State the following statement True or False:-**   04
  1) First level DFD contains single process.
  2) Extended entry decision table contains Y, N or blank entries.
  3) Record review is performed at the beginning of proposed system.
  4) If the system is in routine in nature then it gives negative feedback.

Q.2 **Answer any Seven of the following:-**   14
  1) What is physical and abstract system?
  2) What are the guidelines for drawing DFD?
  3) What is Software engineering? Write its primary goal.
  4) What is Expert System?
  5) Define Decision Tree.
  6) Write the difference between structured and unstructured interview.
  7) Draw program flowchart to find minimum number between two numbers.
  8) What is file?
  9) What is feedback?

Q.3 **A) Write the Answer of the following questions:- (Any Two)**   10
  1) Design any 3 input screens for 'Library System'.
  2) What is System? Explain different elements of system.
  3) Construct System flowchart for opening 'Fixed Deposit' account.
  B) Who is System Analyst? Explain its role as 'A motivator' & 'An organizer'.   04

Q.4 **Answer any two of the following:-**   14
  a) Explain Waterfall Model of SDLC.
  b) Define the term Entity, Attribute and Relationships with example.
  c) Construct decision tree and limited entry decision table for following case study:-
       ABC Company limited decide to give Diwali bonus to all employees, for that management divides employees into 3 categories namely- Administrative staff (AS), Office Staff (OS) and Workers (W) by using following rules:-
      1) If employee is permanent and in AS category then bonus amount is THREE month salary.
      2) If employee is permanent and in OS category then bonus amount is TWO month salary.
      3) If employee is permanent and in W category then bonus amount is ONE month salary.
      4) If employee is temporary then bonus amount is HALF corresponding to each category.

Q.5 **Answer any two of the following:-**   14
  a) Draw the first level DFD for 'Mark SheeT Printing System'.
  b) What is Normalization? Explain up to 3NF.
  c) What is Decision table? Explain its types with example.

Seat No.	

B.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018
DIGITAL ELECTRONICS

Time: 2½ Hours   Max. Marks: 70

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

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

1) _____ memory is used in CPU.
   a) Register   b) DVD
   c) USB   d) Hard Disc Drive

2) _____ is an unweighted code.
   a) Binary   b) Octal
   c) Decimal   d) Gray

3) 8086 microprocessor is a _____ bit processor.
   a) 16   b) 20
   c) 8   d) 10

4) _____ storage device is a flash storage device.
   a) CD-RAM   b) USB
   c) HDD   d) FDD

5) Which bus is unidirectional Bus _____?
   a) Data   b) Address
   c) a and b   d) None of these

6) Pentium 4
   a) Hyper-pipelined Technology   b) Hyper-Threading Technology
   c) Advanced Transfer cache   d) All of these

7) IC 7447
   a) BCD to seven segment decoder   b) Counter
   c) NAND   d) None of these

8) CISC
   a) Computer instruction set code
   b) Complex instruction set computing
   c) Complex internal set computing
   d) Computer index set computing

9) UART
   a) Universal Asynchronous Rate Transmitter
   b) Undefined Asynchronous Receiver Transmitter
   c) Universal Asynchronous Receiver Transmitter
   d) Unidirectional Asynchronous Receiver Transmitter

10) Intel first microprocessor was introduced in _____.
    a) 1975   b) 1985
    c) 1971   d) 1982

11) When AND gate output is high?
   a) One input is high   b) Both input high
   c) Both input low   d) None of these

12) Full Adder
   a) Two input two output   b) Three Input two output
   c) Three Input one output   d) One input two output

13) DMA
   a) Direct Memory Access   b) Direct Media Access
   c) Define Memory Access   d) None of these

14) 3 bit counter how many Flip-Flop required?
   a) 5   b) 4
   c) 3   d) 2

Q.2   **Solve any seven from the following**   **14**
    1) What is the bus? Give its types.
    2) Write feature of 8086 microprocessor.
    3) What is the cache memory?
    4) Draw logic gate symbol of AND, OR, NAND and EX-OR gate.
    5) What is RISC?
    6) Define DMA.
    7) What is Von-Neumann architecture?
    8) To convert given binary no. (10101) to gray number.
    9) Define RS-232.

Q.3   **a) Attempt any two of the following**   **10**
     1) Write a short note on half ADDER.
     2) Write a note on memory parameters.
     3) Draw and explain UART block diagram.

    b) Explain concept of memory hierarchy.   **04**

Q.4   **Attempt any two of the followings:**   **14**
    a) Write a note on pipeline.
    b) Explain stack organization of microprocessor.
    c) Explain K map using example.

Q.5   **Attempt any two of the followings:**   **14**
    a) Draw internal block diagram of 8086 microprocessor. Explain BIU Section.
    b) Draw and explain Harvard architecture 3 of PC.
    c) Explain USB Storage devices.

Seat No.	

B.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018
COMPUTER ORIENTED STATISTICS

Time: 2½ Hours   Max. Marks: 70

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

Q.1 Select most correct alternative:-   **14**

1) If units in the population are destroyed at the time of investigation, then the population is studied by _____ method only.
   a) Census
   b) sampling
   c) a) and b) both
   d) None of these

2) A measurable characteristic that takes particular values is called _____.
   a) Discrete variable
   b) Continuous variable
   c) Constant
   d) Attributes

3) Arrangement of data is necessary to determine _____.
   a) A.M.
   b) Median
   c) Mode
   d) None of these

4) The measure of dispersion that based on all observations is _____.
   a) Range
   b) s.d
   c) Coefficient of range
   d) All of these

5) The correlation between two variables is zero if they changes _____.
   a) In same direction
   b) Opposite direction
   c) At random
   d) None of these

6) To estimate the value of Y for known value of X, the equation of line of regression _____ is used.
   a) Y on X
   b) X on Y
   c) Both a and b
   d) None of these

7) If $\Sigma p_1 q_1 = x$, $\Sigma p_0 q_0 = y$, $\Sigma p_1 q_0 = v$, $\Sigma p_0 q_1 = w$, then Paasche's price index number is _____.
   a) (v/y)
   b) (v/y)100
   c) (x/w)
   d) (x/w)100

8) The events A and B are independent if _____.
   a) $P(A \sqcap B) = 0$
   b) $P(A \sqcap B) = P(A).P(B)$
   c) $P(A \sqcap B) = 1$
   d) None of these

9) If each observation is increased by 5, then median will be _____.
   a) Increased by 5
   b) Decreased by 5
   c) As it is
   d) None of these

10) The correlation between X and X is _____.
   a) +1
   b) -1
   c) Zero
   d) None of these

11) If $b_{yx} = 0.5$ and $b_{xy} = 1.5$, then r_{xy} is _____.
   a) + ve
   b) – ve
   c) + ve or – ve
   d) None of these

12) The extreme observations in the data are 40 and 62, then range is_____.
   a) 11
   b) 12
   c) 22
   d) None of these

13) Mode can be determined graphically by using _____.
   a) Less than ogive
   b) Greater than ogive
   c) (a) and (b) both
   d) Histogram

14) If $P(A) + P(B) = 1$, then events A and B are _____.
   a) Mutually exclusive
   b) Equally likely
   c) Independent
   d) Exhaustive

Q.2 Attempt any seven of the followings.   **14**
1) Define – Discrete and Continuous variable.
2) Define – Median.
3) State any two limitations of census method
4) Define – Correlation.
5) The equation of line of regression Y on X is 5Y + 3X =60. Find regression coefficient Y on X.
6) Given: $n = 10$, $\Sigma(X - \overline{X})^2 = 625$. Find S.D. of X.
7) Given: $P(A) = 0.4$, $P(B) = 0.3$. Find $P(A \cup B)$ if events A and B are mutually exclusive.
8) Find median of 50, 57, 40, 67, 72, and 22.
9) Given: $\Sigma p_1 q_1 = 240$, $\Sigma p_0 q_1 = 120$, $\Sigma p_0 q_0 = 1000$. Find Laspeyre's quantity index number.

Q.3 A) Attempt any two of the followings:-   **10**
1) Two dice are rolled simultaneously. Write sample space and find probability of
   i) getting 6 on at least one die
   ii) Getting sum of numbers on upper face is 9.

2) Following is the information about the wages of workers of two factories. Find which factory shows more variation in paying wages.

	Factory – A	Factory – B
No. of workers	120	150
Mean wages	640	725
Variance of wages	972	1021

3) Find Fisher's price index number from the data given below:-

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	21	1.5	25	2
B	81	2	100	1.5

B) Define classification and state its objectives.   **04**

Q.4   Attempt any two of the followings:-   **14**
a) Draw less than ogive to represent the following data and hence obtain median.

Weight in Kg.	50-55	55-60	60-65	65-70	70-75	75-80
No. of students	8	17	30	26	12	4

b) Find price index number for the year 2005 from the following data by
   1) Simple aggregate method
   2) Simple average of relative's method

Commodity	EG	FH	HK	KL
Price in 2009	35	70	125	58
Price in 2010	40	66	140	72

c)   Define Karl Pearson's correlation coefficient and interprite r=+1, -1, 0

Q.5   Attempt any two of the following:-   **14**
a) Define Probability and state addition and multiplication laws of probability.
b) Given: n=10, $\Sigma X=90$, $\Sigma Y=110$, $\Sigma X^2=1225$, $\Sigma Y^2=1725$, $\Sigma XY=1425$
   Obtain equation of line of regression X on Y and estimate X for Y = 25.
c) The A.M. of 100 observations is 80. At the time of calculations two observations 91 and 98 were wrongly taken as 81 and 78. Find correct mean.

Seat No.	

B.C.A. (Semester - III) (New) (CBCS) Examination Mar/Apr-2018
DATA STRUCTURES USING 'C'

Time: 2½ Hours   Max. Marks: 70

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

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

1) _____ is Non-linear data structure.
   a) Array   b) Stack
   c) Queue   d) Tree

2) Which of the following lined list has NULL pointer?
   a) Singly linear   b) Singly circular
   c) Doubly Circular   d) None of these

3) If front = = rear then linear queue is _____.
   a) Full   b) Empty
   c) Non-full   d) Non-Empty

4) In case of _____ algorithm, a main problem is breakdown into two or more sub-problems.
   a) Branch & bound   b) Greedy
   c) Divide & conquer   d) None of these

5) 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

6) In binary tree, the degree of _____ node is zero.
   a) Leaf   b) Non-Leaf
   c) Internal Node   d) Non-terminal

7) The dissimilar elements are grouped into _____.
   a) Array   b) String
   c) Both a and b   d) Structure

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

9) The amount of time taken by the program for execution is called _____ complexity.
   a) Space   b) Memory
   c) Time   d) Both a & b

10) If one hash function generates same hash address for different keys then it is called?
   a) Static binding   b) Run time binding
   c) Collision   d) Both a & b

11) In case of _____ queue, intrinsic ordering of element does not determine its result.
   a) Linear
   b) Circular
   c) Priority
   d) Deque

12) _____ data structure is useful for polynomial manipulations.
   a) Stack
   b) Queue
   c) Linked list
   d) Both a & b

13) _____ search method is applicable over sorted as well as unsorted data.
   a) Linear
   b) Binary
   c) Both a and b
   d) None of these

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

Q.2 **Solve any seven from the followings:** **14**
   a) Why sorting is necessary?
   b) Why queue is called FIFO data structure?
   c) Write importance of header node in linked list.
   d) List out applications of tree data structure.
   e) Define 'two dimensional' array and write its declaration syntax.
   f) Differentiate between linear & non-linear data structure.
   g) What is complete binary tree?
   h) Why circular queue is better than linear queue?
   i) What is Static & dynamic memory allocation?

Q.3 **A) Solve any two of the followings:** **10**
   1) Implement function that counts and display leaf nodes of binary tree.
   2) Write algorithm that converts infix expression to postfix expression.
   3) Explain 'Selection sort' method with example.

   B) Write a program that finds addition of only odd numbers in an array. **04**

Q.4 **Answer any two of the followings:-** **14**
   a) Write a program to implement linear queue.
   b) Explain 'Threaded binary tree' with its types.
   c) What is Linear linked list? Explain its following operations:-
      1) insert _last()
      2) Search()
      3) remove_after()

Q.5 **Answer any two of the followings:-** **14**
   a) Write a program that converts decimal number into binary number using stack.
   b) Explain node delete operation of binary search tree with following cases –
      a) Deleting leaf node
      b) Deleting node having one child
      c) Deleting node having two children
   c) Write a program to implement Input Restricted Deque (IRD) with its basic operations.

| Seat No. | | Set | P |

B.C.A. (Semester - III) (New) (CBCS) Examination Mar/Apr-2018
NETWORKING AND DATA COMMUNICATION

Time: 2½ Hours   Max. Marks: 70

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

Q.1 Choose the correct alternatives: **14**
   1) Application layer is implemented in _____.
      a) End system   b) NIC
      c) Ethernet   d) None of the mentioned

   2) A Hub is used in _____.
      a) Network layer   b) Data Link Layer
      c) Physical Layer   d) Application Layer

   3) Header of a frame generally contains _____
      a) synchronization bytes   b) addresses
      c) frame identifier   d) all of the mentioned

   4) Which one of the following protocol is used to receive mail messages?
      a) smtp   b) post office protocol
      c) internet message access protocol d) all of the mentioned

   5) Which one of the following algorithm is not used for congestion control?
      a) traffic aware routing   b) admission control
      c) load shedding   d) none of the mentioned

   6) The 4 byte IP address consists of _____
      a) network address   b) host addresses
      c) both a and b   d) none of the mentioned

   7) The frequency above 200 MHz is called _____
      a) microwave   b) radiowave
      c) infrared   d) none of these

   8) Transmission control protocol is _____
      a) connection oriented protocol
      b) uses a three way handshake to establish a connection
      c) receive data from application as a single stream
      d) all of the mentioned

   9) In radio transmission the medium of transmission is
      a) space   b) an antenna
      c) cable   d) carrier waves

   10) The major advantage of Frequency modulation over Amplitude modulation is _____
      a) reception is less noisy   b) smaller bandwidth
      c) higher carrier frequency   d) small frequency deviation

   11) Frequency and period are _____.
      a) proportional to each other   b) inverse of each other
      c) the same   d) none of the above

12) Address Resolution Protocol (ARP) is a _____
    a) 8 Bit Field   b) 10 Bit Field
    c) 12 Bit Field   d) 16 Bit Field

13) What is web browser?
    a) A program that can display a web page
    b) A program used to view html documents
    c) It enables user to access the resource of internet
    d) All of the mentioned

14) A video consists of a sequence of _____
    a) Frames   b) Signals
    c) Packets   d) Slots

Q.2   Answer any seven from the following.   **14**
    a) Mention Service Primitives.
    b) What is flow control?
    c) Define internetworking.
    d) Define Bit rate.
    e) Write full form of POP and RARP.
    f) What is analog and digital signal?
    g) Define Frequency, Amplitude of signal.
    h) Define routing
    i) What is Congestion?

Q.3   Attempt any two of the followings: **14**
    a) What are the different types of errors? Explain error detection codes in detail.
    b) Explain Transmission control verses User Datagram Protocol.
    c) Explain transmission modes with neat diagram.

Q.4   Attempt any two of the followings: **14**
    a) Explain Domain Name System in detail.
    b) Explain different switching mechanism with diagram.
    c) What are the different design issues of layers?

Q.5   Attempt any two of the followings: **14**
    a) What is computer networking? Write the uses of computer networking.
    b) Explain CSMA / CA protocol in detail.
    c) Explain protocol hierarchy in detail.

Seat No.

B.C.A (Semester - III) (New) (CBCS) Examination Mar/Apr-2018
DBMS WITH ORACLE

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Choose and write correct answer from given alternatives:-   **14**

1) DBMS is a collection of _____ that enables user to create and maintain a database.
   a) Keys   b) Translators
   c) Program   d) Language Activity

2) In a relational schema, each tuple is divided into fields called
   a) Relations   b) Domains
   c) Queries   d) All of the above

3) _____ clause is an additional filter that is applied to the result.
   a) Select   b) Group-by
   c) Having   d) Order by

4) _____ table store information about database or about the system.
   a) SQL   b) Nested
   c) System   d) None of these

5) DBMS helps achieve.
   a) Data independence   b) Centralized control of data
   c) Neither a nor b   d) Both a and b

6) _____ is preferred method for enforcing data integrity.
   a) Constraints   b) Storage Procedure
   c) Triggers   d) Cursors

7) _____ data type can store unstructured data.
   a) RAW   b) CHAR
   c) NUMERIC   d) VARCHAR

8) Which are the two ways in which entities can participate in a relationship?
   a) Passive and active   b) Total and partial
   c) Simple and Complex   d) All of the above

9) Which database level is closest to the users?
   a) External   b) Internal
   c) Physical   d) Conceptual

10) Which are the following are the properties of entities?
    a) Groups   b) Table
    c) Attributes   d) Switchboards

11) The database schema is written in
    a) HLL   b) DML
    c) DDL   d) DCL

12) _____ is the process of organizing data into related tables.
    a) Normalization   b) Generalization
    c) Specialization   d) None of the above

13) A _____ is used to define overall design of the database.
   a) Schema
   b) Application Program
   c) Data Definition language
   d) Code

14) Which of the following is not a binary operator in relational algebra?
   a) Join
   b) Semi-Join
   c) Assignment
   d) Project

Q.2   Answers to the following: [Any seven]   **14**
   a) What do you mean by Entity type and Entity Set?
   b) Define Aggregate functions. List function name.
   c) Enlist the advantages of normalizing database.
   d) Define database model.
   e) What is DBMS?
   f) What are cursors give different types of cursors?
   g) What is a query?
   h) Define Projection and Selection.
   i) What is indexing and what are the different kinds of indexing?

Q.3   A)   Answer any two of the following questions :   **10**
   1) Explain advantages and disadvantages of DBMS.
   2) Explain the different attribute types with respect to E-R model.
   3) Explain Hierarchical data model and Network data model.

   B)   Explain date function with suitable example.   **04**

Q.4   Answer the following. (Any 2)   **14**
   a) What is transaction? Explain ACID properties.
   b) Define Join. Explain its type with suitable example.
   c) Write notations used in ER-Model.

Q.5   Answer the following. (Any 2)   **14**
   a) Define Trigger, Create a trigger which allows user to perform DML operation on table only working day & office hour.
   b) Write a PL/SQL block which handles two user defined exceptions.
   c) Explain cursor attributes with suitable example.

Seat No.

B.C.A (Semester - III) (New) (CBCS) Examination Mar/Apr-2018
OOP WITH C++

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Choose the correct alternative.   14

1) _____ stream extracts data from the file.
   a) Input   b) Output
   c) Both a and b   d) None of these

2) Execution of destructor depends on number of _____ for class.
   a) Constructors   b) Objects
   c) Both a and b   d) None of these

3) Function overloading is possible if all _____.
   a) Function names are different
   b) Function having same return type
   c) Function having same name
   d) Function having same signatures.

4) _____ class cannot instantiated.
   a) Friend   b) Abstract
   c) Local   d) Global

5) _____ data of class cannot accessed by non-member function.
   a) Public   b) Private
   c) Protected   d) Both b & c

6) _____ is a default parameter passing technique in C++.
   a) Pass by value   b) Pass by pointer
   c) Pass by address   d) Both a & b

7) _____ cannot virtual.
   a) Constructor   b) Destructor
   c) Both a & b   d) None of these

8) Ofstream class uses _____ default file opening mode.
   a) ios::in   b) ios::out
   c) ios::ate   d) ios::app

9) A constructor can never return a value. Hence it has _____ return type.
   a) void   b) no
   c) int   d) char

10) When a member function is defined inside the class, then it is treated as
    _____ function.
   a) virtual   b) friend
   c) inline   d) outline

11) _____ is base class for all stream classes in C++.
   a) ios   b) filebuf
   c) fstream base   d) fstream

12) Compile time polymorphism is achieved by _____.
   a) Function overloading
   b) Operating overloading
   c) Virtual function
   d) Both a) and b)

13) An object is variable, whose data types is _____.
   a) char
   b) int
   c) float
   d) class

14) _____ operator cannot overload using friend function.
   a) =
   b) <
   c) ++
   d) -

Q.2 Answers to the following. [Any seven]   **14**
   a) What is automatic type conversion?
   b) Write any four basic rules for virtual function that satisfy the compiler requirement.
   c) What are local classes?
   d) Write syntax and use of 'enum' keyword.
   e) What is nesting of member function?
   f) Write different rules to use constructor.
   g) Write in short – 'Delegation' as OOP's concept.
   h) Write declaration syntax for an array of six pointers to double.
   i) What is dynamic constructor?

Q.3 A) Attempt any two of the followings.   **10**
   1) Write an object oriented program that checks entered number is Prime or not.
   2) What is operator overloading? List out rules to overload unary & binary operator?
   3) Write a program that demonstrates the use of multiple constructors in a class.

   B) How single friend function can act as bridge between two or more classes?   **04**

Q.4 Answer the following (Any 2):   **14**
   a) Write C++ program that demonstrates use of 'virtual base class'.
   b) What is Exception? How exception is handled in C++, illustrate with one example?
   c) Write a program in C++ that checks two files are identical or not.

Q.5 Answer the following (Any 2):   **14**
   a) Write a program to overload + operator using member function that concatenates two strings together.
   b) Explain 'Hierarchical inheritance' with one example.
   c) Write a C++ program to implement class'electricity' that calculates electricity bill. Tha class contains following memeber functions-
   Getdata(): To accept customer details along with previous and current units.
   Calculate(): To calculate total bill by considering unit consumed & rate.
   Display(): To display entire bill of customer.
   Take appropriate data members of class and use following table to calculate bill-

Consumed Units	Rate per Unit in Rs.
0 to 49	2.0
50 to 199	3.5
200 to 499	4.5
500 & above	5.0

Seat No.

B.C.A (Semester - III) (New) (CBCS) Examination Mar/Apr-2018
OPERATIONS RESEARCH

Time: 2½ Hours   Max. Marks: 70

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

Q.1   Choose the correct alternative.   14

1) For maximization in TP, the objective is to maximize the total _____.
   a) Solution   b) Profit Matrix
   c) Profit   d) None of the above

2) If the total supply is less than the total demand, a dummy source (row) is included in the cost matrix with _____.
   a) Dummy Demand   b) Dummy Supply
   c) Zero Cost   d) Both a and b

3) What do we apply in order to determine the optimum solution?
   a) LPP   b) VAM
   c) MODI Method   d) None of the above

4) VAM stands for _____.
   a) Vogeal's Approximation Method   b) Vogel's Approximate Method
   c) Vangel's Approximation Method   d) Vogel's Approximation Method

5) According to transportation problem number of basic cells will be exactly ___.
   a) m+n-0   b) n+m-1
   c) m+n-1   d) None of these

6) Any set of non-negative allocations ($X_{ij}>0$) which satisfies the raw and column sum (rim requirement) is called a _____.
   a) Linear programming   b) Basic feasible solution
   c) Feasible solution   d) None of the above

7) For solving an assignment problem, which method is used?
   a) Hungarian   b) American
   c) German   d) Both are incorrect

8) An optimal solution is the _____ stage of a solution obtained by improving the initial solution.
   a) Third   b) First
   c) Second   d) Final

9) How many methods are there to solve LPP?
   a) Three   b) Two
   c) Four   d) None of the above

10) _____ is one of the fundamental combinatorial optimization problems.
   a) Assignment problem   b) Transportation problem
   c) Optimization Problem   d) None of the above

11) Every LPP is associated with another LPP is called _____.
   a) Primal   b) Dual
   c) Non-linear programming   d) None of the above

12) In simplex method, we add _____ variables in the case of '='
   a) Slack variable
   b) Variable
   c) Artificial Variable
   d) None of these

13) _____ Method is used to solve an assignment problem.
   a) Elurian
   b) Hamiltion
   c) Hungarian
   d) None of these

14) The collection of all feasible solution is known as _____.
   a) Total feasible solution
   b) Combined solution
   c) Feasible solution
   d) None of these

Q.2 Answers to the following. [Any seven]   **14**
   a) What is balanced and unbalanced A.P.?
   b) What is T.P.?
   c) Write steps to solve T.P.
   d) Write rules for Northwest Corner method.
   e) What are the advantages of LPP?
   f) What are the various applications of A.P.?
   g) Explain VAM method to find IBFS of T.P.
   h) Convert the following A.P. of maximization type in to minimization type:-

$$\begin{array}{c c c c c} & A & B & C & D \\ P & \begin{bmatrix} 2 & 10 & 9 & 7 \\ Q & 15 & 4 & 14 & 8 \\ R & 13 & 14 & 16 & 11 \\ S & 4 & 15 & 13 & 9 \end{bmatrix} \end{array}$$

   i) Write standard form of following LPP.
      Maximize z=25x+36y subject to
         $3x+5y \leq 4$;
         $x \leq 6$;
         $4x+6y \leq 12$;
         X, y ≥ 0

Q.3 A) Attempt any two of the following.   **10**
   1) A person requires at least 10, 12 and 12 units chemicals A, B and C
      respectively for his garden. A liquid product contain 5.2 and 1 units of A,
      B and C respectively per jar and cost Rs.15 per jar. A dry product
      contains 1, 2 and 4 units of A, B and C per pack and cost Rs. 10 per
      pack. How many of each should be purchased so as to meet the
      requirement and to minimize the cost?

   2) Write the dual:-
      Maximize z= 2x1+x2+3x3.
      Subject to x 1+x2+2x3$\leq$5.
               2x1+3x2+4x3=12
               x1, x2, x3$\geq$0.

   3) The owner of a small machine shop has four machinists available to
      assign to jobs for the days. Five jobs are offered with expected profit for
      each machinist on each job as follows. Find the assignment of machinist
      to jobs that will result in a maximum profit. Which job should be declined?

	A	B	C	D	E
1	62	78	50	101	82
2	71	84	61	73	59
3	87	92	111	71	81
4	48	64	87	77	80

   B) Write history of Operations Research.   **04**

Q.4 **Attempt any two of the following:-** 14

1) Maximize z=4x+5y
   Subject to 2x+3y≤ 12,
   $\quad\quad\quad\quad$ 2x+y≤ 8
   $\quad\quad\quad\quad$ x≥0, y≥0

2) Find IBFS by Northwest corner rule and lest cost method. Which method is better?

	w1	w2	w3	w4	ai
F1	30	25	40	20	100
F2	29	26	35	40	250
F3	31	33	37	30	150
bj	90	160	200	50	

3) Find Solution of Transportation Problem using Vogel's method.
   TOTAL no. of supply constraint: 3
   TOTAL no. of demand constraints: 4
   Problem Table is

	D$_1$	D$_2$	D$_3$	D$_4$	Supply
S$_1$	11	13	17	14	250
S$_2$	16	18	14	10	300
S$_3$	21	24	13	10	400
Demand	200	225	275	250	

Q.5 **Solve any two of following:-** 14

a) Optimize cost in following transportation problem by MODI Method.

	I	II	III	IV	ai
A	5	2	4	3	22
B	4	8	1	6	15
C	4	6	7	5	18
bj	7	12	17	19	

b) Describe the mathematical model of T.P. and formulate it as an LPP.

c) Write the following assignment problem for minimum cost by Hungarian method.

$$
\begin{array}{c c c c c}
 & \text{I} & \text{II} & \text{III} & \text{IV} \\
\text{A} & 15 & 13 & 14 & 17 \\
\text{B} & 11 & 12 & 15 & 13 \\
\text{C} & 13 & 12 & 10 & 11 \\
\text{D} & 15 & 17 & 14 & 16
\end{array}
$$

Seat No.	

B.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018
SOFTWARE TESTING

Time: 2½ Hours   Max. Marks: 70

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

Q.1 A) Choose the correct alternatives: **07**

1) Who leads a walkthrough?
   a) Author   b) Moderator
   c) Reviewer   d) Scribe

2) Which is not a type of Review?
   a) Requirement Analysis   b) Peer to peer
   c) Technical   d) Walk through

3) White Box Testing is not concern with _____.
   a) Statement Coverage   b) Decision Coverage
   c) Cause and Effect Coverage   d) Multiple Condition Coverage

4) Which is not true in case of Soak Testing?
   a) Also know as Endurance Testing
   b) Running a system at high levels of load for prolonged periods of time
   c) Type of Performance Testing
   d) Subset of Regression Testing

5) Test plans are based on _____.
   a) Project Plan   b) Business Plan
   c) Support Plan   d) All of these

6) STLC is related to which model?
   a) Waterfall Model   b) RAD Model
   c) V Model   d) Spiral Model

7) _____ verifies that all elements mesh properly and overall system functions/performance is achieved.
   a) Integration testing   b) System testing
   c) Unit testing   d) Validation

Q.1 B) State whether True or False:-   **04**

1) Software testing is a method of assessing the functionality of a software program.
2) A review is a systematic examination of a document by one or more people with the main aim of finding and removing errors early in the software development life cycle.
3) Black box testing is also known as Glass box testing.
4) Soak Testing is a type of performance test that verifies a system's stability and performance characteristics over an extended period of time.

Q.1 C) Fill in the blanks:- 03

    1) _____ regression testing, executed during the unit testing phase, tests the code as a single unit. It has a narrow and focused approach, where complex interactions and dependencies outside the unit of code in question are temporarily blocked.

    2) _____ testing is a type of acceptance testing; performed to identify all possible issues/bugs before releasing the product to everyday users or public.

    3) _____ testing is a commonly used term for software testing performed without planning and documentation, but can be applied to early scientific experimental studies.

Q.2 Solve any seven from the following 14

    a) What is difference between bug and defect?
    b) What is Boundary Value Analysis?
    c) What is Equivalence Partitioning?
    d) What is Stress testing?
    e) What is the Alpha testing and Beta testing?
    f) What is Smoke testing?
    g) What is Retrospect meeting?
    h) List any two uses of testing.
    i) What is Volume testing?

Q.3 A) Attempt any two from the following 10

    1) What is Path testing? Explain Control Flow Graph path testing technique with example.
    2) What is Peer review? Explain the characteristics of Peer review.
    3) What is test case? Explain the characteristics of good test case.

    B) What is Regression testing? Explain regional regression testing. 04

Q.4 Answer any two from the following:- 14

    a) Explain the test case template with suitable example.
    b) Explain the software test life cycle in detail.
    c) Explain White box testing in detail.

Q.5 Answer any two from the following:- 14

    a) What is integration testing? Explain Top-down and Bottom-up integration testing.
    b) Explain Black box testing in detail.
    c) Explain the defect life cycle in detail.

Seat No.	

B.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018
PYTHON

Time: 2½ Hours   Max. Marks: 70

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

Q.1 A) Choose the most correct alternatives: 10

1) What is the output of print list if list =['abcd', 12345, 2.23, 'BCA_II', 70.2]?
   a) ['abcd',12345, 2.23, 'BCA_II', 70.2]   b) List
   c) Error   d) None of the above

2) Which of the following function of dictionary gets all the keys from the dictionary?
   a) getkeys()   b) key()
   c) keys()   d) None of the above

3) Which of the following function checks in a string that all characters are alphanumeric?
   a) shuffle(1st)   b) capitalize()
   c) isdigit()   d) isalnum()

4) What is the output of len([1, 2, 3])?
   a) 1   b) 2
   c) 3   d) 4

5) _____ of the following is used to give single line comment in python.
   a) / /   b) #
   c) Both a and b   d) /*   */

6) _____ of the following is not a numeric type in python.
   a) int   b) complex
   c) float   d) double

7) _____ function is used to sort the group of strings.
   a) append()   b) sorted()
   c) slice()   d) sort()

8) When is the finally block executed?
   a) When there is no exception
   b) When there is an exception
   c) Only if some condition that has been specified is satisfied
   d) Always

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

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

Q.1 B) State whether True or False:- 04
1) Python is a case sensitive language.
2) The input() function accepts every value as string.
3) The wind() method is used to handle an event with an event handler function.
4) The arguments passed during the calling function are called formal parameters.

Q.2 Solve any seven from the following 14
a) Define break statement. Give its example.
b) Define continue statement. Give its example.
c) List the types of sequences datatypes.
d) What is the use of startwith() method?
e) What is the use of PVM?
f) Give any two advantages of functions.
g) Define dictionary. Give its example.
h) Write a code to accept a float number from keyboard.
i) What is tuple? Give its example.

Q.3 A) Solve any two of the following 10
1) Explain different file opening modes.
2) Define function. Write a program to calculate factorial of number using function.
3) Explain the features of python.

B) Define module. Explain the importing module with example. 04

Q.4 Answer any two from the following s:- 14
a) Explain if-else conditional statement with example.
b) What is string? Explain the different string testing methods with example.
c) What is exception? Write a program to handle ZeroDivisionError exception.

Q.5 Answer any two from the following s:- 14
a) Explain the following widgets with suitable example.
   1) Frame   2) Label   3) Button
b) Write a python program to check the entered number is Armstrong or not.
c) Write a python program to retrieve and display all rows from employee table.

Seat No.	

B.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018
OPERATING SYSTEM

Time: 2½ Hours   Max. Marks: 70

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

Q.1 A) Choose the correct alternatives: **10**

1) To access the services of operating system, the interface is provided by the _____.
   a) System calls   b) API
   c) Library   d) Assembly instructions

2) _____ operating systems allows many users to use a computer system interactively at the same time.
   a) Batch   b) Multiprogramming
   c) Real-time   d) Time-Sharing

3) Several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called an _____.
   a) Shared Memory   b) Entry Section
   c) Race Condition   d) Synchronization

4) LRU stands for _____.
   a) Light Repeat Unit   b) Least Recently Used
   c) Last Recent Used   d) Local Recent Used

5) With _____ a page is brought into main memory only when a reference is made to a location on that page.
   a) Prepaging   b) Demand paging
   c) Page buffering   d) Swapping

6) _____ is a Memory-Management Scheme that Permits the Physical address space of a process to be non-contiguous.
   a) Paging   b) Deadlock
   c) Fragmentation   d) Memory Allocation

7) There is wasted space internal to a partition due to the fact that the block of a data loaded is smaller than the partition, is referred to as _____.
   a) External fragmentation b) Internal fragmentation
   c) Simple fragmentation   d) Dynamic fragmentation

8) _____ are a set of blocked processes each holding a resource and waiting to acquire a resource held by another process.
   a) Deadlocks   b) Mutual Exclusion
   c) Bankers   d) All the these

9) Which scheduling policy is best suited for time-sharing operating systems?
   a) First come first served b) Shortest Job First
   c) Round Robin   d) None of these

10) A process is selected from the _____ queue by the _____ scheduler, to be executed.
   a) Blocked, short term
   b) Wait, long term
   c) Ready, short term
   d) Ready, long term

Q.1 **B) State whether True or False:-** **04**
1) In a fixed partition system, main memory is divided into several partitions of the same size.
2) One of the disadvantages of the priority scheduling algorithm is that: it can lead to some low priority process waiting indefinitely for the CPU.
3) A process in the running state is currently being executed by the CPU.
4) Virtual memory space is always smaller than physical memory space.

Q.2 **Solve any seven from the following.** **14**
   a) What are components of operating system?
   b) Define Resource Allocation Graph?
   c) What is multilevel Queue scheduling?
   d) What is Swapping?
   e) What is Compaction?
   f) List out File Types.
   g) Define real time OS.
   h) Define layered structure.
   i) Define thread and list its types.

Q.3 **A) Solve any two of the following.** **10**
   1) Explain short term and Long term scheduler.
   2) Explain File Protection.
   3) Explain virtual machine.

   B) Explain Critical Region. **04**

Q.4 **Answer any two from the followings:-** **14**
   a) Explain Banker Algorithms with example.
   b) Consider the following page reference string: Remember 3 frames are initially empty
   1, 2, 3, 4, 2, 1, 5, 6, 2,1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6.
   How many page faults would occur for the LRU & LFU replacement?
   c) Explain dining philosopher problem.

Q.5 **Answer any two from the followings:-** **14**
   a) Explain segmentation in details.
   b) Example semaphore in details.
   c) Consider the all the following 5 processes arrive at time 0, in the order given the burst time are as follows. Solve FCFS, SJF and RR (quantum = 10 ms) scheduling algorithms for the set of processes. Draw Gantt chart. Which algorithm would give the minimum average waiting time?

Process	Burst Time (ms)
P1	10
P2	29
P3	3
P4	7
P5	12

Seat No.

B.C.A (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018
ADVANCED WEB TECHNOLOGY

Time: 2½ Hours   Max. Marks: 70

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

Q.1 Choose the correct alternatives:-   **14**

1) A function in PHP which starts with double underscore is known as _____ function.
   a) Magic   b) Inbuilt
   c) Default   d) User Defined

2) The _____ statements is used for instantiates the mysqli class.
   a) mysqli = new mysqli()   b) $mysqli = new mysqli()
   c) $mysqli -> new mysqli()   d) $mysqli -> new.mysqli()

3) _____ of the following PHP functions can be used to find files.
   a) file()   b) glob()
   c) get_file()   d) find_file()

4) _____ function is used to check a variable is an array or not.
   a) this_aaray()   b) check_aaray()
   c) in_aaray()   d) is_aaray()

5) _____ Keyword is used to prevents a method from being overridden by a subclass.
   a) Abstract   b) Protected
   c) Final   d) Sealed

6) _____ methods are used to manage result sets using both associative and indexed arrays.
   a) fetch_array() and fetch_row()   b) fetch_array() and fetch_columns()
   c) get_array() and get_row()   d) get_array() and get_column()

7) _____ function is used to find error code generated from the execution of the last MySQL function.
   a) errorno()   b) errornumber()
   c) errnumber()   d) errno()

8) _____ statements invoke the exception class.
   a) throws new Exception();   b) throw new Exception();
   c) throws Exception();   d) new Exception();

9) _____ keyword is used to refer to properties or methods within the class itself.
   a) $this   b) $self
   c) public   d) $itself

10) The _____ function capitalizes the first letter of each word in a string.
   a) strtoupper()   b) strupper()
   c) ucwords()   d) struppercase()

11) When data is collected using $_POST variable then the data is visible to
_____.

   a) Everyone   b) Only you
   c) Few once   d) None of these

12) _____ is correct statement which will store 111 in variable num.
   a) int $num = 111;   b) int num = 111;
   c) $num = 111   d) $num = 111;

13) The _____ is the default PHP session name.
   a) PHPSESSID   b) PHPSESID
   c) PHPIDSESS   d) PHPSESSIONID

14) If session.use_cookie is set to 0, which is nothing but URL rewriting.
   a) True   b) False

Q.2 Answers to the following: [Any seven]   **14**
   a) What is basic syntax of PHP?
   b) What is multidimensional array? Explain with example,
   c) List out different functions used for comparing string with example.
   d) How data type of variable are tested? Explain with example.
   e) What are different classes attributes in PHP? Explain with example.
   f) What is $_POST and $_GET?
   g) Explain Static keyword with example.
   h) Explain any four date and time function with example.
   i) What is MySQL record set?

Q.3 A) Answer <u>any two</u> of the following questions: **10**
   1) Explain different operators used in PHP.
   2) Explain different forms controls, its properties, methods and events.
   3) Explain Working with PHP-MySQL Environment with example.

   B) Explain different parameter passing technique used in PHP with example.   **04**

Q.4 Answer the following. (Any 2)   **14**
   a) Design web page which insert, delete and update records.
   b) What is session? Explain session state management in detail.
   c) What is Exception Handling? Explain exception handling with example.

Q.5 Answer the following. (Any 2)   **14**
   a) What is Validation? Explain server side and client side validation with example.
   b) What is inheritance? Explain different types of inheritance used in PHP with example.
   c) Write a technique for configuration and installation of web server and PHP.

Seat No.	

B.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018
E-GOVERNANCE

Time: 2½ Hours   Max. Marks: 70

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

Q.1 Choose the correct alternatives:-   **14**

1) B2B stands for _____.
   a) Business to Government   b) Business to Buyer
   c) Business to Business   d) All the above

2) Four stages of e-Government Model are Cataloging, _____, Vertical Integration, Horizontal Integration.
   a) Transaction   b) Transformation
   c) Interaction   d) None of these

3) The facilitator for National e-governance Programme (NeGP) in India is:
   a) Ministry of Human Resources Development
   b) Department of Electronics and Information Technology.
   c) Department of E-governance
   d) Department of Administrative Reforms and Public Grievances

4) _____ is the key to good governance & g-governance is the only effective way of transparent governance.
   a) Transparency   b) Transformation
   c) Transaction   d) Transmission

5) Prime Minister _____ said e-governance must be encouraged as it is environment friendly and will result in paperless offices.
   a) Narendra Modi   b) Manmohan Singh
   c) Indira Gandhi   d) Rajiv Gandhi

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

7) What is an essential component of successful change management _____?
   a) Leadership   b) Consultation
   c) Monitoring & evaluation   d) All of these

8) Which of the following is not a stage in the development of e-governance?
   a) Transition phase   b) Interaction phase
   c) Transformation phase   d) Transaction phase

9) ICT stands for _____.
   a) Information & Communication Technology
   b) Information & Connecting Technology
   c) Internet & Connecting Technology
   d) None of these

10) Advantages of _____ media like collaboration, participation and empowerment have attracted governments to use it in governance for bringing together agencies, citizens and information.
   a) Social
   b) Internet
   c) Broadcast
   d) Communication

11) Electronic tax payment belongs to the category of _____.
   a) C2C
   b) P2P
   c) B2B
   d) C2G

12) An example for broadcasting of e-Governance is _____.
   a) Online cheque transfer
   b) Online judgment
   c) Online cash transfer
   d) None of the above

13) Capacity building key components is Governance structure, _____, g-Governance champion CIO & CTO, Public Private Partnership.
   a) Tools
   b) Tables
   c) Transactions
   d) Procedures

14) e-Governance Service Maturity Models are Cashless, _____, Faceless.
   a) Page less
   b) Paperless
   c) Painless
   d) Wireless

Q.2   Answers to the following: [Any seven]   **14**
   a) Define e-Governance.
   b) JV stands for
   c) What is mean by PPP?
   d) G2C stands for
   e) BPR stands for
   f) Which are the e-Governance models?
   g) eGBM stands for
   h) Change management can be classified as
   i) NeGP Stands for

Q.3   A)   Answer any two of the following questions :   **10**
   1) Explain taxonomy of e-Governance services.
   2) Explain definition, characteristic and objectives of PPP.
   3) Explain managing E-Government Technology.

   B) Explain four stages of e-Government models.   **04**

Q.4   Answer the following. (Any 2)   **14**
   a) Explain difference between general and E-Government project life cycle.
   b) Explain Indian & Global Assessment frame ware.
   c) Explain change management in detail.

Q.5   Answer the following. (Any 2)   **14**
   a) Explain capacity building and knowledge management.
   b) Role and Advantages of social media and citizens.
   c) Explain models of digital governance.