Seat No.	

B.C.A. (Semester – I) (New) (CBCS) Examination, 2017
FUNDAMENTALS OF COMPUTER

Day & Date: Tuesday, 11-04-2017   Max. Marks: 70

Time: 10.30 AM to 01.00 PM

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

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

1) _____ new electronic switching device used in second generation.
   a) IC   b) Vacuum tubes   c) Transistor   d) None of these

2) _____ is most popular storage medium that are accessed & processed data sequentially.
   a) Optical Disc   b) Hard disc
   c) Magnetic tape   d) None of these

3) _____ set of integrated programs that control hardware & manages computer system.
   a) Database   b) Operating System
   c) Application Software   d) Kernel

4) _____ data coded in the form of small lines known as bars.
   a) Optical Mark Reader   b) Bar Code Reader
   c) Optical Character Recognition   d) None

5) _____ Algorithm is used in Time sharing operating system.
   a) Priority Scheduling   b) Round Robin Scheduling
   c) Shortest Job First   d) None

6) _____ special device carry out process of modulation & demodulation.
   a) Bluetooth   b) Modem   c) Router   d) SMPS

7) _____ Protocol is used to transfer file.
   a) URL   b) FTP   c) Gopher   d) Telnet

8) _____ best describes a dot matrix Printer.
   a) Laser   b) Impact   c) Non-impact   d) Ink jet

9) _____ can not be used for storage.
   a) CPU   b) Hard Disc   c) Floppy Disc   d) Zip Disc

10) A Computer Circuit board is called as _____.
    a) CPU Board   b) Mother board
    c) Memory board   d) None of these

11) _____ is a volatile memory that holds data temporarily.
   a) RAM   b) ROM   c) Memory board   d) PROM

12) _____ is most common input device used in computer.
   a) Keyboard   b) Mouse   c) Scanner   d) Joystick

13) _____ is not example of output device.
   a) Monitor   b) Joystick   c) Plotter   d) Printer

14) _____ is language translator that translates high level
    language to machine level language.
   a) Assembler   b) Complier   c) Converter   d) None of these

Q.2   Answer the following (Any 7)   **14**
   1) What is Computer?
   2) Define Batch operating system.
   3) Define Spooling.
   4) What is motherboard?
   5) What is network?
   6) Differentiate between high level & low level languages.
   7) What is assembler?
   8) What is use of Complier?
   9) List any two functions of an operating system.

Q.3   A)   Answer the following (any 2)   **10**
        1) Define and explain Multiprogramming operating System?
        2) Explain 3 Generations of Computer.
        3) What is Computer Memory? Explain Storage structure of hard
           disk.

   B)   Explain block diagram of computer system with suitable diagram.   04

Q.4   Answer the following (Any two)   **14**
   1) Explain difference between Primary memory & Secondary memory.
   2) What is Computer Security? Explain different security techniques
      used in computer.
   3) What is input device? Explain
      a. Keyboard
      b. Mouse
      c. Light pen

Q.5   Answer the following (Any two)   **14**
   1) What is Binary number system? Solve following
      a) $(1101011)_2 = (?)_{10}$
      b) $(110001)_2 = (?)_{10}$
      c) $(111)_2 = (?)_{10}$
   2) Explain types of network.
   3) Explain online Shopping? Why it is popular? Explain different
      application areas.

Seat	
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B.C.A. (Semester – I) (New) (CBCS) Examination, 2017
BASICS OF 'C' PROGRAMMING

Day & Date: Thursday, 13-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

N.B. :   1) *All* Questions are *compulsory*.
             2) Figure to the *right* indicates *full* marks.

Q.1   A)   Choose correct alternatives: **07**
1) What is the size of an int data type?
   a) 2 Bytes
   b) 8 Bytes
   c) Depends on the system/complier
   d) Cannot be determined

2) Which of the following cannot be checked in a switch-case statement?
   a) Character   b) Integer
   c) Float   d) enum

3) Char Variable can at a time store _____.
   a) 4 Character   b) 8 Character
   c) 1 Character   d) None of these

4) A Variable can not start with _____.
   a) An Alphabet
   b) A Number
   c) A special symbol other than underscore
   d) 2) and 3) both

5) _____ is valid identifier.
   a) _emv   b) struct
   c) if   d) while

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

7) Which of the following operator used as Ternary Operator __
   a) <=   b) >=
   c) ? :   d) ? =

Q.1 B) **State whether True or False:** 04
1) void is not a system keyword.
2) A function can be define inside the another function.
3) Arrays are stored in row and column manner.
4) Switch is two-way decision making statement.

Q.1 C) **Fill in the blanks:** 03
1) _____ format code is used with double data type.
2) _____ Statement causes loop termination.
3) C Program is basically a collection of _____.

Q.2 **Solve any seven of the following.** 14
1) Define algorithm.
2) What are the purpose of goto statement?
3) Define variable.
4) Syntax of for loop.
5) List out rules to declare identifier.
6) Define the term 'recursion'.
7) Write syntax and example of ternary operator.
8) Explain any two inbuilt mathematical functions.
9) Write the syntax of scanf () function.

Q.3 A) **Solve any two of the following.** 10
1) Write a program in C to swap two numbers.
2) What is Program? Explain different steps to solve the problem.
3) What is programming planning tool?

B) Write a program to display number is even or odd. 04

Q.4 **Solve any two of the following.** 14
1) Explain structure of 'C' program in details.
2) Explain two entry controlled loops in 'C' language.
3) What is Flow Chart? Explain all symbols.

Q.5 **Solve any two of the following.** 14
1) What is Array? Explain one and two Dimension of array in details.
2) Write a program in C to calculate addition of two matrix.
3) What is function? Explain inbuilt and user defined function with example.

Seat No.	

B.C.A. (Semester – I) (New) (CBCS) Examination, 2017
FINANCIAL ACCOUNTING WITH TALLY

Day & Date: Monday, 17-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   Choose correct alternatives: **14**
1) Surplus of income over expenses is _____.
   a) Loss   b) Profit   c) Financial Societies   d) Deficit

2) Amount which is not recoverable from customer is known as ___.
   a) Debts   b) Debtors   c) Bad-Debts   d) Doubtful debts

3) Amount invested in business is called as _____.
   a) Drawing   b) Capital   c) Liability   d) None

4) Stationary is _____ type of Account.
   a) Personal A/c   b) Rent A/c
   c) Nominal A/c   d) Trading A/c

5) _____ shows financial position of business.
   a) Trading A/c   b) P&L A/c   c) Balance-sheet   d) None

6) Bank Reconciliation statement is prepared by _____
   a) Trader   b) Bank   c) Seller   d) Student

7) Overdraft means _____ balance of Pass Book.
   a) Debit   b) Credit   c) Closing   d) Opening

8) Out-standing expenses is a _____ Account.
   a) Real   b) Personal   c) Nominal   d) None of them

9) Depreciation is always charged on _____ Assets.
   a) Current   b) Intangible   c) Fixed   d) None

10) Opening Stock is entered in a Trading A/c on the _____ side.
    a) Credit   b) Asset   c) Liabilities   d) Debit

11) Interest on Investment is _____ of business concern.
    a) Profit   b) Loss   c) An expenses   d) An income

12) In Straight Line Method of depreciation the amount of
     depreciation remain _____ every year.
    a) Constant   b) Increased   c) Decreased   d) None

13) Depreciation arises because of _____.
   a) Wear and tear
   b) Inflation
   c) Profit
   d) Fall in the value of asset

14) Sub-division of Journal is known as _____ book.
   a) Subsidiary
   b) Purchase Returns
   c) Purchase
   d) Journal

Q.2 Answer the following (Any 7)   **14**
1) What is Trial Balance?
2) What is Journalizing?
3) What is Narration?
4) Which A/c is debited, when goods are destroyed by fire?
5) Give Rules of Personal A/c.
6) What is mean Bank Reconciliation Statement?
7) What is Balance Sheet?
8) What is Gross-Profit?
9) Under what method depreciation the amounts of depreciation remain constant?
10) What is Long form of TDS in Tally?

Q.3 A) Write note on any Two of the following.   **10**
   1) Straight Line Method
   2) Profit and Loss A/c
   3) Rules of Account

    B) Solve/short Answer type question? Give Benefit of TDS?   **04**

Q.4 Attempt any two of the following.   **14**
1) Importance & specialization of Bank Reconciliation Statement?
2) Give meaning of Double entry system and advantages of Double entry system?
3) Give concepts of Accounts.

Q.5 Attempt any two of the following.   **14**
1) Journalise following transaction in the books of XYZ.
   1988 July
   1) Started business with Rs. 5000.
   2) Sold goods for Rs. 1000.
   8) Paid rent Rs. 20.
   10) Purchased goods for Rs. 3500.
   13) Withdraw Rs. 200 from the bank for office use
   17) Received a cheque for Rs. 300 from Rahim.
   28) Received commission Rs. 100.
2) Mr. Hari purchased a machinery on 1st Oct 2007 at Rs. 90000 and spent Rs. 10000 on its installation. The firm provides depreciation at 10% p.a. under Straight Line Method on 31st March every year. Show machinery A/c for 2007-08, 2008-2009 and 2009-10.
3) Give definition of Trading A/c, P&L A/c and Balance-sheet and also give its specimen form of Trading A/c, P&L A/c, & B/S.

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B.C.A. (Semester – I) (New) (CBCS) Examination, 2017
COMMUNICATION SKILLS

Day & Date: Wednesday, 19-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   Rewrite the following sentences by choosing correct alternative.   14
1) The inside address should be written _____.
   a) Below the salutation   b) Above the heading
   c) Above the salutation   d) Above the date

2) Reports from the subordinates to the superiors take the form of
   _____.
   a) upward communication   b) downward communication
   c) face to face communication   d) visual communication

3) A memo is an example of _____.
   a) Internal communication   b) external communication
   c) lateral communication   d) informal communication

4) Posters fall under _____ communication.
   a) oral   b) visual   c) written   d) spoken

5) Conciseness means _____
   a) brevity   b) courtesy   c) coherence   d) convincing

6) Bad listener will make _____ communication.
   a) good   b) bad
   c) excellent   d) rather favorable

7) The process of conversion of the subject matter into symbols is
   called _____.
   a) Encoding   b) Decoding   c) Both   d) None of these

8) ___ is essential for achieving job satisfaction.
   a) Business   b) Communication c) Process   d) None of these

9) A _____ may be communicate either oral or written.
   a) Report   b) Communicator   c) Letter   d) All

10) _____ communication is accurate and precise.
    a) Written   b) Oral   c) Face to face   d) None of these

11) _____ Letter has the immediate objective of promoting the sale of a product.
   a) Sales   b) Order   c) Enquiry   d) Circular

12) The etc. is an example of _____.
   a) apostrophe   b) abbreviations
   c) full stop   d) capitalization

13) Information and communication technology include _____.
   a) E-mail   b) Internet
   c) Educational television   d) All

14) The name of the report submitted by the public Ltd. Company every year is _____.
   a) business report   b) budget report
   c) press report   d) annual report

Q.2   Answer any seven of the following in two or three lines.   14
1) Define the term Communication.
2) What is memorandom?
3) What is decoding?
4) What is an agenda?
5) Explain the barrier to communication?
6) What is report?
7) What is E mail?
8) What is video conferencing?
9) Give the example of semantic barrier?

Q.3   A)   Write note on any Two of the following.   10
1) Write short note on downward communication.
2) What are the objectives of the communication?
3) What is report describe types of reports.

B)   Explain term 'You' attitude.   04

Q.4   Attempt any two of the following.   14
1) Define the term Communication. Explain process of communication.
2) Write the minutes of the meeting held at Conference hall about social annual gathering of your college on 25 Oct 2015 at 11 am.
3) Write a resume for the application of software developer.

Q.5   Write any two of the following.   14
1) Describe the layout of the business letter.
2) What is non-verbal communication? Write in details.
3) What are the barriers to communication? Explain physical barriers in details.

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B.C.A. (Semester – I) (New) (CBCS) Examination, 2017
DISCRETE MATHEMATICS

Day & Date: Friday, 21-04-2017   Max. Marks: 70

Time: 10.30 AM to 01.00 PM

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

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

1) The cardinality of set A={1,2,3,4,5,6,7,8,9} is _____.
   a) 11   b) 9   c) 7   d) None of these

2) If $A \cap B = \phi$ then the sets A & B are called as _____ sets.
   a) Disjoint   b) Complemented
   c) Identical   d) None of these

3) The compound statement $[p \wedge (p \to q)] \to q$ is _____.
   a) Tautology   b) Contradiction
   c) Neither   d) None of these

4) The contra positive of $q \Rightarrow p$ is _____.
   a) $\sim q \Rightarrow \sim p$ b) $\sim p \Rightarrow \sim q$
   c) $p \Rightarrow q$ d) None of these

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

6) If $f(x) = x^2 + x - 1$ then $f(1) = $ _____
   a) 0   b) 2   c) -1   d) 1

7) $|A \cup B| = |A| + |B| - $ _____
   a) $|A \cap B|$ b) $|A \cup B|$
   c) $|A' \cup B|$ d) None of these

8) $|A \times B| = $ _____
   a) $|A.B|$ b) $|B.A|$
   c) $|A|.|B|$ d) $|B|.|A|$

9) A graph which does not contains any loops and multiple edges is called _____ graphs.

a) Multiple   b) Self   c) Complete   d) Simple

10) A graph G has p edges & n vertices then its incidence matrix is of order
   a) $p \times n$ b) $n \times n$
   c) $p \times p$ d) $n \times p$

11) Empty set is _____.
   a) Infinite set   b) Finite set
   c) Singleton set   d) None of these

12) A function which is both one-one and onto is called as _____ function.
   a) Injective   b) Bijective
   c) Surjective   d) None of these

13) The statement $(p \wedge q) \to \sim p$ is _____
   a) Tautology   b) Contradiction
   c) Neither   d) Valid

14) If $A = \{a, b, d\}$ and $B = \{b, d, e\}$ then $|A \cup B| = $ _____
   a) 1   b) 2
   c) 3   d) 4

Q.2 Answer any seven of the following.   **14**
   1) Define Equivalence relation.
   2) Define Bipartite graph with suitable example.
   3) Find the number of edges in a complete graph with seven vertices.
   4) Define Tautology and contradiction.
   5) If $A = \{a, b, c, d\}$ and $B = \{p, q, r\}$ then Find $A \times B$ and $B \times A$.
   6) If $A = \{1,2,3\}$ then find power set of A.
   7) Define Bijective function.
   8) State multiplication principle.
   9) State Demorgan's laws for two sets.

Q.3 A) Attempt any two of the following.   **10**
   1) Let $U = \{a, b, c, d, e, f, g, h\}$ Let $A = \{a, b, c, e, f\}$ and $B = \{c, e, f, h\}$ be the subset of universal set U. Prove that
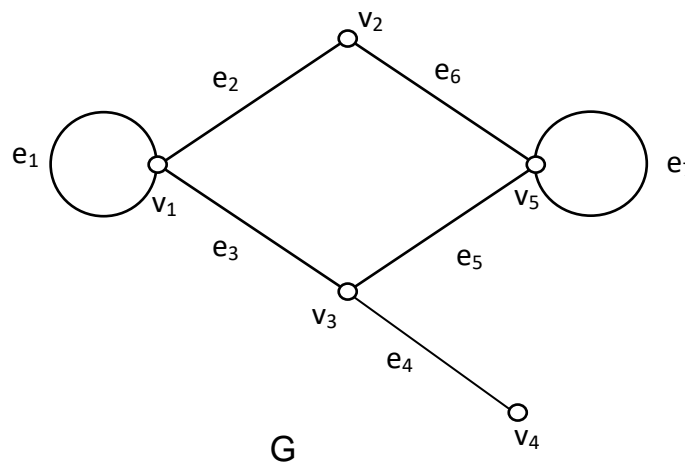 $$(A \cap B)^1 = A^1 \cup B^1$$
   2) Prove that
      $$p \vee (q \wedge r) \equiv (p \vee q) \wedge (p \vee r)$$
   3) Let $\sim$ be an equivalence relation defined on set A then prove that any two equivalence classes are either disjoint or identical.

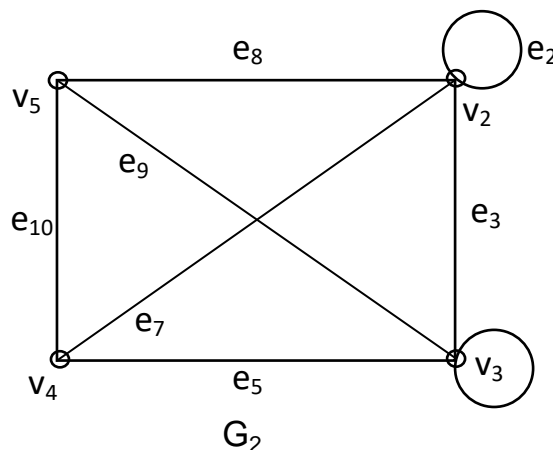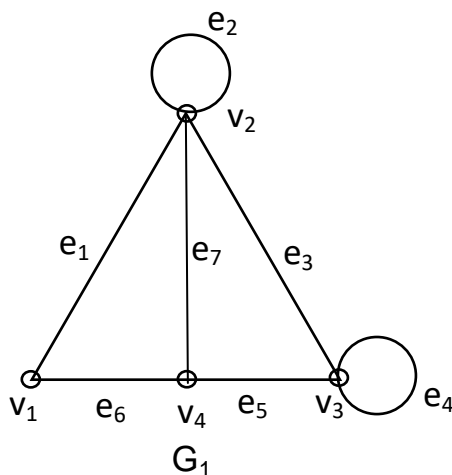**B)** Find adjacency and incidence matrix of the following graph.   **04**

G

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

1) Let $A = \{2,4,6,8\}$ & R be the relation defined on the set A given by
$$R = \{(2,2), (2,4), (4,6), (4,8), (8,2), (8,4)\}$$
Find transitive closure R^* by using warshall's algorithm also draw digraph of R^* and write indegree and outdegree of each vertex in R^*.

2) How many integers between 1 and 567 which are divisible by 3 or 5 or 7.

3) Define ring sum of two graphs. Hence draw $G_1 \cup G_2$ and $G_1 \cap G_2$ for the following graph.

G_1 G_2

Q.5   Write any two of the following.   **14**

1) State and prove mutual Inclusive – Exclusive principle for three sets.

2) Check the validity of the following argument by using truth table
p↔q, ~p, p∨r ⊢~q

3) Let $U = \{x | x \in N \; and \; 2 \leq x \leq 11\}$,
$A = \{x | x \in N \; and \; 4 \leq x \leq 10\}$
$B = \{x | x \in N \; and \; x \text{ is an even number } | < x \leq 11\}$
then find cardinalities of the following sets
$$A^1, \qquad A{\sim}B, \qquad A \cap B^1, \qquad B \oplus A$$

Seat No.	

B.C.A. (Semester – II) (New) (CBCS) Examination, 2017
ADVANCED PROGRAMMING IN 'C'

Day & Date: Wednesday, 12-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   Choose the correct alternatives: **14**
1) Which of the following is not a compiler control directive?
   a) #if   b) #ifdef   c) #ifndef   d) #ifelse

2) Address stored in pointer variable is of _____ type.
   a) Character   b) Float   c) Integer   d) Array

3) What is the size of generic pointer in C?
   a) 0   b) 1   c) 2   d) Null

4) Preprocessor directives must terminated by semicolon.
   a) True   b) False

5) Which of the following function sets first n characters of a string to a given character?
   a) strinit()   b) strnset()   c) strset()   d) strcset()

6) We can use increment and decrement operations on pointers.
   a) True   b) False

7) A macro must always be written in capital letters.
   c) True   d) False

8) Which of the following function is used to find the first occurrence of a given string in another string?
   a) strchr()   b) strrchr()   c) strnset()   d) strstr()

9) If the two strings are identical, then strcmp() function returns ___.
   a) 1   b) -1   c) 0   d) None of these

10) How will you free the allocated memory?
    a) remove(var-name);   b) free(var-name);
    c) delete(var-name);   d) dalloc(var-name);

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) An array cannot be used as a member of the structure.
   a) True   b) False

13) _____ operator is used to access the member of the structure.
   a) . (dot)   b) _ (underscore)
   c) # (hash)   d) ; (semicolon)

14) Which of the following is not a file handling function?
   a) fopen()   b) feof()
   c) fwrite()   d) fgets()

Q.2   Answer any seven of the following.   **14**
   1) Define file inclusion directives. Give its example.
   2) Define pointer? How to initialize pointer.
   3) Define string. Write a syntax for declaration of string.
   4) List any two string functions with its use.
   5) Define nesting of macros. Give its example.
   6) What are the uses of structure?
   7) How is a structure declared and initialized?
   8) Define self-referential structure. Give its example.
   9) What are the types of file?

Q.3   A)   Attempt any two of the following.   **10**
         1) Write the difference between structure and union.
         2) Explain pointer arithmetic with example.
         3) Explain the use of gets() and puts() function with example.

B)   Write a note on macro substitution directives.   **04**

Q.4   Answer any two from the following: **14**
   1) What is pointer to array? Write a program to display sum of array
      elements using pointer to array.
   2) Write a program to accept a string and check whether it is
      palindrome or not.
   3) Explain array of structure with suitable example.

Q.5   Answer any two from the following: **14**
   1) Write a program to call a function call by reference.
   2) What is dynamic memory allocation? Explain with example.
   3) Explain different operations on files.

Seat No.	

B.C.A. (Semester – II) (New) (CBCS) Examination, 2017
WEB TECHNOLOGY

Day & Date: Saturday, 15-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   A)   Choose the correct alternatives from the following: **07**
1) A _____ is a group of reusable code which can be called anywhere in your program.
   a) Function   b) Program
   c) Sequence   d) None of the above

2) JavaScript supports a composite data type known as _____.
   a) Integer   b) Object
   c) Variant   d) Null

3) jQuery is a _____ JavaScript library.
   a) Fast   b) Small
   c) Cross-Platform   d) All of the above

4) CSS is used along with _____ and JavaScript in most websites to create user interfaces.
   a) Java   b) VB
   c) HTML   d) None of the above

5) Math.round(x) returns the value of x rounded to its nearest __
   a) Integer   b) Positive
   c) Negative   d) None of the above

6) In HTML5, the autofocus attribute is a _____ attribute.
   a) Password   b) Text
   c) Boolean   d) None of the above

7) The event onload is most often used within the ___ element.
   a) Title   b) HTML   c) List   d) Body

Q.1   B)   Fill in the blanks: **07**
1) A ____ variable will be visible only within a function where it is defined.
2) jQuery is a lightweight, write less, and ___ JavaScript library.

3) CSS is an acronym stands for _____.
4) The Document Object Model (DOM) is an _____ for valid *HTML* and well-formed *XML* documents.
5) The HTML <canvas> element is used to draw graphics, on the fly, via _____.
6) SVG stands for _____
7) Use the <u>stroke()</u> or the _____ method to actually draw the rectangle on the canvas.

Q.2   Solve any 7 from the following: **14**
1) List any four text formatting tags.
2) Write the Syntax of <img> tag.
3) Write the Structure of the HTML Document.
4) Given any four differences between Get and Post Method.
5) What is a web application?
6) What is difference == and ===?
7) Write the syntax of switch statement in javascript.
8) What are user defined functions in javascript?
9) Write a note on Table tag in HTML.

Q.3   A)   Solve any two from the following   **10**
1) What is HTML5? Explain input types autofocus, placeholder and number with suitable example.
2) What is singular and Paired tags? Explain list tag with suitable example.
3) What is if else if statement in Javascript? Explain with suitable example.

B)   What is CSS? How CSS can be used in HTML.   **04**

Q.4   Solve any two of the following: **14**
1) What is an array in javascript? Explain crating, storing and accessing array with looping with suitable example.
2) Write Syntax of id selector and class selector and Explain with suitable example in CSS.
3) Write a java script to print following output
5 4 3 2 1
5 4 3 2
5 4 3
5 4
5

Q.5   Solve any two from the following: **14**
1) What is jQuery? Explain events in jQuery and the need of jQuery.
2) Write the syntax of hide and show effects in jQuery? and explain with suitable example.
3) Explain Frame and Frameset in HTML with suitable example.

Seat No.	

B.C.A. (Semester – II) (New) (CBCS) Examination, 2017
SOFTWARE ENGINEERING

Day & Date: Tuesday, 18-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   Choose the correct alternatives: **10**
1) ER model shows the _____.
   a) Static view   b) Functional view
   c) Dynamic view   d) All the above

2) Which of the following is not a phase of SDLC?
   a) Testing   b) Maintenance   c) Analysis   d) All of the above

3) _____ feasibility considers cost/benefit analysis of the system.
   a) Technical   b) Boundary   c) Operational   d) Economical

4) DSS means _____
   a) Design Support System.   b) Decision Support System.
   c) Deion Support System.   d) Data Support System.

5) From the following which quality deals with maintaining the quality
   of the software product?
   a) Quality assurance   b) Quality control
   c) Quality efficiency   d) None of the above

6) The testing in which code is checked _____.
   a) White box testing   b) Black box testing
   c) Red box testing   d) Green box testing

7) Software project manager is engaged with software management
   activities. He is responsible for _____.
   a) Project planning
   b) Monitoring the progress
   c) Communication among stakeholders
   d) All mentioned above

8) Which of the following is not a fact-finding technique?
   a) Third party enquiry   b) Interview
   c) Questionnaire   d) Record reviews

9) Which of the following is not a verification activity?
   a) Inspection   b) Testing   c) Walk through   d) Technical review

10) Choose the correct option according to given below statement.
Statement 1: Umbrella activities are independent of any one
framework activity and occur throughout the process.
Statement 2: Software quality assurance, software
configuration management are umbrella activity.
Statement 3: Software quality assurance, software
configuration management are not umbrella activity.
   a) Only statement 1 is correct.
   b) Statement 1 and statement 2 are correct
   c) Only statement 3 is correct
   d) Statement 1 and statement 3 are correct.

B) **State the following statements true/false**   **04**
   1) Testing approach changes based on the life cycle applied for
      development of software.
   2) Every attribute is defined by its corresponding set values, called
      Attributes.
   3) In waterfall model, output of one phase is input to next phase.
      True or false.
   4) Top level diagram is also called a context diagram.

Q.2 **Answer any seven of the following.**   **14**
   1) What are various types of software maintenance?
   2) What is structured design?
   3) State characteristic of system.
   4) What is Flowchart?
   5) What is level-0 DFD?
   6) What are SDLC models available?
   7) What Decision tree?
   8) What is data dictionary?
   9) What are CASE tools?

Q.3 **A)** **Attempt any two of the following.**   **10**
      1) Difference between System Analysis & System Design.
      2) Explain requirement Analysis.
      3) Explain Spiral model in detail.

   B) Explain Design tools in detail.   **04**

Q.4 **Answer any two of the following.**   **14**
   1) Draw a CLD & First level DFD for Payroll System.
   2) What is File? Explain the different types of File.
   3) Write flowchart symbols in detail.

Q.5 **Answer any two of the following.**   **14**
   1) What is DFD? Draw the different symbols of DFD.
   2) Define the term- Entity, Attribute & Relationship with example.
   3) What is Normalization? Explain upto 3 NF.

Seat No.	

B.C.A. (Semester – II) (New) (CBCS) Examination, 2017
DIGITAL ELECTRONICS

Day & Date: Thursday, 20-04-2017   Max. Marks: 70
Time: 10.30 AM to 01.00 PM

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

Q.1   Choose correct alternatives: **14**
1) The output of OR Gate Y = _____
   a) A+B   b) A.B
   c) Both a & b   d) None of these

2) The IC 7432 _____ Gate.
   a) AND   b) OR   c) NAND   d) NOR

3) In Half adder SUM is stored in _____ Gate.
   a) EX-NOR   b) EX-OR   c) NAND   d) AND

4) In K-map SOP term is _____
   a) Maxterm   b) Minterm
   c) Pair   d) None of these

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

6) Data bus of 8088 Microprocessor _____ bit.
   a) 8   b) 16   c) 20   d) 32

7) In EX-OR Gate iftwo input lines high the output _____.
   a) Active High   b) Active Low
   c) Toggle   d) None of these

8) Pentium IV Microprocessor is _____ Bit.
   a) 16   b) 64   c) 32   d) 128

9) DMA techniques use for _____ data transfer.
   a) High Speed   b) Low Speed
   c) Both a and b   d) None of these

10) For selecting Minimum mode 8086 microprocessor pin 33
    connected to _____.
    a) VCC   b) VEE   c) GND   d) None of these

11) Pin no. 40 in 8086 is _____.
   a) VCC
   b) GND
   c) CLK
   d) RESET

12) 1001 Gray code of this _____.
   a) 1101
   b) 1111
   c) 0101
   d) None of these

13) D-cache stores _____.
   a) Instruction
   b) Data
   c) Cycle
   d) None of these

14) _____ is faster memory.
   a) Primary
   b) Secondary
   c) Cache
   d) None of these

Q.2 **Answer the following (Any 7)** 14
1) Define Memory Hierarchy?
2) Convert Binary to Gray 101101?
3) Write pin function of ALE?
4) What is stack?
5) What is Multicore processor?
6) State difference between von-Neumann & Harvard Architecture?
7) Write note on Excitation table?
8) Write difference between 8086 & 8088 Microprocessor?
9) Write note on USB?

Q.3 **A)** **Attempt any two of the following:** 10
1) Write down any four parameters in Memory?
2) Write note on Address Bus, DataBus & control Bus?
3) Draw the circuit diagram of Half Adder and explain its working?

B) Write difference between RISC & CISC? 04

Q.4 **Attempt any two of the following.** 14
1) Explain any two mapping Techniques in Cache memory?
2) Draw & explain any four Logic Gates?
3) Distinguish between Synchronous & Asynchronous data Transfer?

Q.5 **Attempt any two of the following.** 14
1) Draw internal architecture of 8086. Explain EU section in brief.
2) Define Virtual Memory? Explain Paging & Segmentation?
3) Write a brief note on K – Map?

Seat
No.

B.C.A. (Semester – II) (New) (CBCS) Examination, 2017
COMPUTER ORIENTED STATISTICS

Day & Date: Saturday, 22-04-2017   Max. Marks: 70

Time: 10.30 AM to 01.00 PM

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

Q.1   Select most correct alternatives: **14**
1) To test blood _____ method is applicable.
   a) Census   b) Sampling
   c) (a) and (b) both   d) None of these

2) A characteristic that cannot be measured in unit is called _____.
   a) Discrete variable   b) Continuous variable
   c) Constant   d) Attribute

3) The measure of central tendency that based on all observations is
   _____.
   a) A.M.   b) Median
   c) Mode   d) None of these

4) S.D. is a measure of _____.
   a) Central tendency   b) Dispersion
   c) Correlation   d) Regression

5) The correlation between two variables is perfect if they changes
   _____.
   a) In same direction   b) In opposite direction
   c) Proportion   d) None of these

6) If regression coefficients are –ve, then correlation coefficient
   between two variables is
   a) –ve   b) +ve
   c) +ve or –ve   d) None of these

7) If Laspeyre's and Paasche's price index numbers are x and y
   respectively, then Fisher's price index number is _____.
   a) xy   b) $(xy)^{1/2}$
   c) $100.(xy)^{1/2}$ d) None of these

8) The events A and B are mutually exclusive, then _____.
   a) P(A∪B) = 1   b) P(A∪B) = P(A) + P(B)
   c) P(A∩B) = 1   d) None of these

9) A frequency distribution shows maximum frequency is 25 corresponding to 20, then mode becomes _____.
   a) 20   b) 25   c) Less than 20   d) None of these

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

11) If $b_{yx} = 4/3$ then b_{xy} is _____.
   a) 4/3   b) Less than 1
   c) Greater than 1   d) None of these

12) The range of 5 values is 20. If each value is doubled, then rang becomes _____.
   a) 5   b) 20   c) 10   d) 40

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

14) If event A is subset of event B, then _____.
   a) P(A) ≤ P(B)   b) P(B) ≤ P(A)
   c) P(A) = iP(B)   d) None of these

Q.2   **Answer the following (Any 7)**   **14**
1) Define – Attribute, frequency.
2) Define – Mode and state formula for grouped data.
3) State any two advantages of sampling method.
4) Define – index number.
5) Find value of 'n' if $r_{xy} = 0.5, \sigma_x = 10, \sigma_y = 12, \Sigma(X - \overline{X}).(Y - \overline{Y}) = 600$
6) Given: n=10, ΣX=140, Var(X)=49. Find C.V. of X
7) Given: P(A)=0.4, P(B)=0.6 and P(A∩B)=0.35.Find P(A/B)
8) Use empirical relation between mean, median and mode. Find median if mean and mode are 40 and 18 respectively.
9) Given: $\overline{X} = 14, \overline{Y} = 28, b_{yx} = 1.6, b_{xy} = 0.8$ find equation of line of regression X on Y.

Q.3 **A)**   **Attempt any two of the following:**   **10**
      1) A bag contains 25 tickets numbered 1 to 25. A ticket is drawn at random, find probability of getting a ticket with number
         i) divisible by 3 ii) odd
      2) The A.M. of daily wages of the workers of factory A and B are Rs. 180 and 220 respectively. Find percentage of

workers in factory A and B if combined A.M of daily wages is Rs. 190.

3) Find Fisher's quality index number from the data given below.

Commodity	Base Year		Current Year	
	Price	Quality	Price	Quality
A	30	1.5	25	3
B	20	2	35	1.5

B) Explain types of correlation. **04**

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

1) Draw histogram to represent the following data and hence obtain mode.

Height in cm.	145-150	150-155	155-160	160-165	165-170	170-175
No. of students	40	65	80	70	35	20

2) Find price number for the year 2002 from the following data by
   i) Simple average of relatives method
   ii) weight average of relative method

Commodity	G	H	K	L
Price in 2001	35	50	75	100
Price in 2002	40	45	70	120
Weight	2	3	1.5	4

3) Explain scatter diagram method of studying correlation.

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

1) Define
   i) Event
   ii) Mutually exclusive events
   iii) Equally likely events
   iv) Exhaustive events

2) Find range and s.d. for the data given below.

Class	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	3	7	12	10	9	5

3) Find Karl Pearson's coefficient of correlation between X and Y and interpret the result

X	12	18	20	15	14
Y	7	10	9	12	11