B. C. A. (Sem. I) Examination

November - 2019

BCA0C101 : Introduction to Internet & ICT Technologies

Time : **3** Hours]   [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1   Do as directed : (any **ten**)   **10**

(1) Full form of TCP is _____.

(2) URLs are of two types _____ and _____.

(3) What is DNS ?

(4) What is MOOC ?

(5) What is E-Banking ?

(6) What is Remote Login ?

(7) What is functionality of TCP ?

(8) What is SMTP ?

(9) What is HTTPS ?

(10) What is search engine ?

(11) What is Internet ?

2   Explain any **four** :   **20**

(a) What is URL? Explain Components of it in detail with suitable example.

(b) Differentiate Intranet and Extranet with suitable example.

(c) What is internet protocol ? Explain it with neat diagram.

(d) Explain ISP.

(e) Briefly explain internet infrastructure and services of internet.

3   Explain any **four** :   **20**
 (a) Define WWW. How is it different from the Internet?
 (b) What is a web site ? How does it differ from a web portal ? Explain in brief. Briefly explain elements of a website.
 (c) What are the advantages of virtual private network? Explain in brief.
 (d) Briefly explain E-Governance.
 (e) Which protocol used by E-mail ? Explain it in brief.

4   Explain any **four** :   **20**
 (a) Describe the structure of E-Mail Box.
 (b) Explain Mobile Internet facility with its application.
 (c) How is E-Learning beneficial for a learner ?
 (d) Mention few advantages and disadvantages of Social Media.
 (e) What are the advantages and disadvantages of video conferencing ?

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H-071002   Seat No. _____

B. C. A. (Sem. I) Examination

November - 2019

BCA0C102 : Problem Solving Through 'C' Language

Time : **3** Hours]   [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1   Do as directed : (any **ten**)   **10**

(1) Who is father of C Language ?   1

(2) C programs are converted into machine language   1
with the help of _____.

(3) A C variable cannot start with _____ and   1
_____.

(4) The format identifier '%i' is also used for _____   1
data type.

(5) The syntax to print a % using printf statement can   1
be done by _____.

(6) fflush(NULL) flushes all _____.   1

(7) Which keyword is used to come out of a loop only   1
for that iteration ?

(8) Which function will choose to join two words ?   1

(9) _____ is an optional argument in scanf( ) that   1
gives the maximum number of characters to be read.

(10) Function fopen( ) with the mode "r+" tries to open the   1
file for _____.

(11) Write syntax and example of conditional operator.   1

2   Explain any **four** :   **20**

    (a)   Explain switch statement with suitable example.

    (b)   List all operators. Explain increment/decrement, logical operator and relational operator with suitable example.

    (c)   What is difference between one and two dimensional array? Explain 2D array with suitable example.

    (d)   Explain the difference between entry control and exit control loop with suitable example.

    (e)   Explain suitable example of passing array to function in C language.

3   Explain any **four** :   **20**

    (a)   What is recursion? Write a C program which prints the sum of N digits using recursion.

    (b)   Explain pointer with suitable example of passing pointer to a function.

    (c)   Explain fprintf( ) and fscanf( ) functions with example.

    (d)   Explain fseek( ) and rewind( ) function with suitable example.

    (e)   Explain array of structure with suitable example.

4   Explain any **four** :   **20**

    (a)   What are macros in C? List and Explain two types of it. List predefine macros with suitable example.

    (b)   Explain pointer to an array with suitable example.

    (c)   Explain strupr( ), strcat( ), strrev( ),strstr( ) and strlwr( ) with syntax and suitable example.

    (d)   Explain call by value and call by reference with suitable example.

    (e)   Write a C program which prints the Armstrong Number between 1 to 500.

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B. C. A. (Sem. I) Examination

November - 2019

BCA0C103 : Mathematical Foundations

Time : 3 Hours]   [Total Marks : 70

Instructions

1)   Figures on the right indicate the marks.
2)   All Questions are compulsory.
3)   Answer of each question must start on a new page.
4)   Answer of all sub-questions of a question should be written
      in continuous order.

1   Calculate the following:(Any Five)   20

(1) $A = \begin{bmatrix} 2 & -3 & 4 \\ 5 & -3 & 3 \\ 2 & -3 & 7 \end{bmatrix}$. Find det(A).

(2)   If $A = \begin{bmatrix} -1 & 1 & -1 \\ 1 & -1 & -1 \\ -1 & -1 & 1 \end{bmatrix}$ then find A^2.

(3)   What will be the transpose of A? $A = \begin{bmatrix} 2 & 6 & 0 \\ 1 & 0 & 8 \\ 7 & 3 & 4 \end{bmatrix}$.

(4)   If $A = \begin{bmatrix} 1 & 2 & 3 \\ -2 & 8 & 6 \\ 4 & -5 & 9 \end{bmatrix} and B = \begin{bmatrix} 3 & 5 & 2 \\ -1 & -2 & 1 \\ 1 & -1 & 6 \end{bmatrix}$ then find

A+B, A-B, 3A+2B and 3A-2B.

(5)   If $A = \begin{bmatrix} 4 & 2 & 3 \\ 5 & 8 & 1 \\ 3 & 6 & 1 \end{bmatrix} and B = \begin{bmatrix} 1 & 5 & 1 \\ 0 & 2 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ then find AB and BA.

Verify if AB=BA.

2 Solve the following (Any Four):   **20**

(1) Evaluate $\dfrac{d}{dx}\left(x + x^{\frac{1}{2}} + x^{\frac{1}{5}}\right)$.

(2) Evaluate $\dfrac{d}{dx}\left(\cos\left(\log x\right)\right)$.

(3) Evaluate $\dfrac{d}{dx}\left(x/e^x\right)$.

(4) Evaluate $\dfrac{d}{dx}\left(\dfrac{\cos x}{x}\right)$.

(5) Evaluate $\dfrac{d}{dx}\left(\dfrac{1}{\sqrt{x}} + x\right)$.

3 Explain Any Four.   **20**

(1) Find mean, median and mode for the following
   a. All the odd numbers between 51 and 65.
   b. 20,15,18,5,10,17,21,19,25,28
   c. 1,4,9,16,25,36,49,64,81,100,121,144

(2) Find the co-relation between the X and Y:-
   X: 26, 15, 17, 22, -15, 22, 42
   Y: 23, 12, 14, 19, -18, 19, 39

(3) Find the regression line of X on Y. Also determine what will be
   the value of Y if the value of X is 58:-
   X: 85, 75, 70, 60, 50, 55, 65, 80
   Y: 75, 85, 60, 55, 60, 65, 70, 50

(4) Find the regression line of height of sons on height of fathers:-
   Height of fathers: 63,65,64,67,62,68,66,70
   Height of sons: 68,66,68,65,69,66,68,65

(5) Explain directed and undirected graphs with their matrix
   representations.

4 Answer the following(Any Two)   **10**

(1) Define the following:
   (1) Inverse of a matrix   (2) Rank of matrix   (3) Graph   (4) Edge
   (5) Adjacent node

(2) Give an example of isomorphic graphs with justification.

(3) Define a simple graph. Give an example of a simple graph.

B. C. A. (Sem. I) Examination

November - 2019

BCA0C104 : Computer Fundamentals

Time : 3 Hours]   [Total Marks : 70

Instructions
1) Figures on the right indicate the marks.
2) All Questions are compulsory.
3) Answer of each question must start on a new page.
4) Answer of all sub-questions of a question should be written in continuous order.

1 Do as Directed (Any Five):   **10**
   (1) Convert $(357)_{10}$ to its equivalent BCD. [Ans: 0011 0101 0111]
   (2) Convert $(15.46)_{10}$ to its equivalent XS-3 code. [Ans: 0100 1000.0111 1001]
   (3) Convert $(234)_{10}$ to its equivalent gray code. [Ans: 10011111]
   (4) (1) Full Form of BCD is _____. [Binary Coded Decimal]
       (2) Full Form of EEPROM is _____. [Eclectically Erasable Programmable Read only Memory]
   (5) Represent the decimal number 254 in 2421 code [Ans: 0010 1011 0100]
   (6) Perform Addition of two binary numbers in BCD: (1110) + (0110).
   (7) What is the use of ASCII Code?

2 Explain Any Four.   **20**
   (a) Explain XOR gate using truth table, logical symbol and Boolean expression.
   (b) Explain De-Morgan's theorem using truth table and AOI logic.
   (c) Do as directed:
      (1) List the truth table of the expression: $XY + YZ + \bar{Y}Z = XY + Z$ 02
      (2) Simplify Boolean Expression $ABC + A\bar{B}C + AB\bar{C}$ and compare truth table of both.   03
   (d) Attempt the following:
      (1) Simplify the Boolean expression F = AB+A (B+C)+B(B+C) with the help of Boolean law and also draw AOI circuit of simplified expression.   03
      (2) List truth table and Boolean expression of NOT logical gates.   02
   (e) (1) Simplify the Boolean expression : $(X + Y)(X + \bar{Y})(\bar{X} + Z)$ 02
      (2) Convert following Boolean function into its Standard SOP form: $A\bar{B}C + \bar{A}\bar{B} + AB\bar{C}D$ 03

3 Explain Any Four.   **20**
   (a) Explain Half Adder Combinational Circuit with the block diagram, circuit diagrams and truth table.
   (b) Reduce using K-map: $F(A,B,C,D) = \sum m$ (0, 3, 4, 6, 7, 9, 12, 14, 15)
   (c) Reduce the Boolean function $\sum m(3,7,11,12,13,14,15)$
   (d) Reduce using K-map: $F(A,B,C,D) = \prod M$ (0,1,2,4,5,6,8,9,10)
   (e) What is Cache Memory? Discuss in brief.

4 Explain Any **Four.**   **20**
   (a) **Simplify the Boolean function F(A,B,C,D) = Σ (0, 1, 3, 5, 6, 9, 11, 12, 13, 15) in Sum-of-Products form by means of a 4- variable map. [Ans: F = C'D + AD + A'B'C' + A'B'D + ABC' + A'BCD']**
   (b) **Difference between RAM and ROM with suitable example.**
   (c) **Explain UVEROM and EEROM with its functionality.**
   (d) **.Simplify the Boolean function F(W,X,Y,Z) = Π M(1,2,4,6,8,9)**
   (e) **Simplify the Boolean function F(A,B,C,D) = Σ (2,3,8,10,11,12,14,15) in Sum-of-Products form by means of a 4- variable map**

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November - 2019

BCA0E101 : Communication English

Time : 3 Hours] [Total Marks : 70

Instructions

1) Figures on the right indicate the marks.
2) All Questions are compulsory.
3) Answer of each question must start on a new page.
4) Answer of all sub-questions of a question should be written in continuous order.

1 **Do as Directed (Any Ten):** 14
   (1) He _____ by the teacher. (Punish)
   (2) Does she _____ a car? (Has, have)
   (3) Aksh _____ already _____ his work. (Have+complete)
   (4) Divya is _____ honest girl. (a, an, the)
   (5) The mother _____ food for them everyday. (Prepare)
   (6) This is _____ cheapest bag. (a, an, the)
   (7) _____ European man works with me in office. (a, an, the)
   (8) The fan is _____ my head. (use suitable preposition)
   (9) The teachers _____ us _____ the conference. (Make+attend)
  (10) Close the door, _____? (Use proper question tag)
  (11) The word 'Communication' is derived from Latin word_____ .
  (12) He _____ here last night.(come, came)
  (13) She _____ vegetables right now. (To be+Cut)
  (14) I came here by _____ . (Foot, walking)
  (15) I saw a cat, while I _____ the road. (To be+cross)

2 Explain Any **Two.** 14
   (a) Define Communication. Explain the process of communication.
   (b) Explain the objectives of communication.
   (c) How to overcome the barriers of communication?

3 Explain Any **Two.** 14
   (a) What do you mean by Verbal Communication? Define written, oral Communication. And explain merits and demerits written communication.
   (b) Explainneeds and functions of Business letters.
   (c) You recently visited a store. You weren't attached properly in the store. Write a complaint letter to the manager of the store about the misbehavior of the staff or salesman.

4   Explain Any **Two.**   **14**
    (a)   Assume that you were sent to attend a seminar by the principal of
          your college. Write a report to him about the seminar and your experience.
    (b)   Explain essentials of an effective correspondence.
    (c)   Write an application for the post of an English teacher at A-one
          English medium school.

5   Explain Any **Two.**   **14**
    (a)   What is listening? State and explain the principles of good listening.
    (b)   What is the nature and scope of oral communication?
    (c)   What is the media of oral communication? Elaborate.