BCA(I) Math Foundation-BC-101

BCA (1st Sem.)-2018

Time : 3 Hrs   *Full Marks : 80*

Candidates are required to give their answer in their

own words as far as practicable.

The questions are of equal Value.

Answer any five questions.

1. Find the Eigen values and Eigen Vector of the following Matrix.

   (a) $A = \begin{bmatrix} 1 & 2 \\ 12 & -1 \end{bmatrix}$

   (b) $B = \begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$

2. Find the Inverse of the matrix:

   $$A = \begin{bmatrix} 1 & 0 & -1 \\ 3 & 4 & 5 \\ 0 & -6 & -7 \end{bmatrix}$$

3. Find the maximum and minimum of the function

   $$x^3 + y^3 - 12x - 3y + 15$$

P.T.O.

4. (a) If $Y = \dfrac{ax - b}{a - bx}$, prove that

$$2 \cdot Y_1 \cdot Y_3 = 3 \cdot Y_2^2$$

(b) If $Y = Sin(Sinx)$, prove that

$$Y_2 + Y_1 \tan x + y Cos^2 x = 0$$

5. Solve

$$\left(x^2 + xy\right) \cdot dy = \left(x^2 + y^2\right) \cdot dx$$

6. Solve

$$d^2 y / dx^2 - 3 \cdot dy / dx + 2y = e^{3x}$$

7. If $u = \left(x^2 + y^2\right)^{-\frac{1}{2}}$, Prove that

$$\frac{\delta^2 u}{\delta x^2} - \frac{\delta u}{\delta y^2} = u^3$$

8. Solve:

(a) $ydx - x \cdot dy = x \cdot y \cdot dx$

(b) $dy / dx = e^{x-y} + x^2 \cdot e^{-y}$

9. Simplify:

(a) $\displaystyle\int_0^{\pi/2} tan^{-1}\left[2x / 1 - x^2\right] dx$

(b) $\displaystyle\int_0^{\pi/2} \sqrt{1 + Sinx \cdot dx}$

10. Write short notes on any two of the following:

(a) Orthogonal Matrix

(b) Rank Matrix

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(c) Singular Matrix

(d) Taylor's Series

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BCA(I) Computer Fundamental-BC-102

BCA (1st Sem.)-2018

Time : 3 Hrs   Full Marks : 80

Candidates are required to give their answer in their

own words as far as practicable.

The questions are of equal Value.

Answer any five questions.

1. Discuss the History and Generation of Computer in detail.

2. Differentiate between the characteristics of Primary and Secondary memory of Computer.

3. What is operating system? Explain its various types.

4. What do you mean by logic gates? Discuss its various types also draw the truth table and diagram of basic logic gates.

5. Define the term "Magnetic Disk." Explain its various types used in Digital Computer.

6. Throw light on the major differences between the multiprogramming and multitasking.

7. Define the basic characteristics of the following I/O devices:

    (a) LCD monitors

    (b) Laser printers

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(c) Mouse

(d) Scanner

(d) Modems

8. Explain the component of computer with diagram. Discuss its all components functions.

9. What is Assembly level Language? Differentiate it with machine level language.

10. Convert $(1100110100)_2$ into

(a) Decimal

(b) Octal

(c) Hexadecimal

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BCA(I) Bus. Com. & Inf. Sys.-BC-103

BCA (1st Sem.)-2018

Time : 3 Hrs   *Full Marks : 80*

Candidates are required to give their answer in their

own words as far as practicable.

The questions are of equal Value.

Answer any five questions.

1. Discuss the meaning and process of Business communication.

2. What do you mean by credit letter? Explain its various types with suitable example.

3. What is MIS? Describe its objectives and characteristics.

4. Write a reasoned note on "Filing and Indexing system".

5. What do you understand by Meeting? Explain the role of chairperson for a successful meeting.

6. What is oral communication? State the advantages and disadvantages of oral communication.

7. Explain the different elements of a system.

8. Discuss in detail the Simon's Model of Decision making Process.

9. Define the term DSS. What are philosophical foundations of DSS Practise.

P.T.O.

10. Write short notes on any two of the following:

(a) Types of sales Letter

(b) Concept of System Analysis and Design(SAD)

(c) Grapevine Communication

(d) Implementation of MIS

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BCA(I) Fund. of Mgt.-BC-104

BCA (1st Sem.)-2018

Time : 3 Hrs   *Full Marks : 80*

Candidates are required to give their answer in their

own words as far as practicable.

The questions are of equal Value.

Answer any five questions.

1. "Management is both Science and art." Discuss with suitable example.

2. Write different kinds of planning. Explain need and importance of planning.

3. What do you mean by Human Resources planning? Explain the different sources of recruitment.

4. Explain Scientific Management theory.

5. What are the main elements of an effective control system? Discuss.

6. "A manager must possess the quality of a good leader." Explain it.

7. What is Motivation? Discuss the Maslow's theory of Motivation.

8. Discuss about the importance of Communication in management.

9. What is Personality? What are those factors which determine the personality?

10. Write short notes on any two of the following:

   (a) Perception

   (b) Formal and Informal Groups

   (c) Recruitment and Selection

   (d) Group Dynamics

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