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BC-101
Math Found.

2017

Time : 3 hours

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 Vectors of the following matrix:

(a) $A = \begin{bmatrix} 1 & 1 \\ 3 & -1 \end{bmatrix}$

(b) $B = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{bmatrix}$

2. Find the inverse of a Matrix $A = \begin{bmatrix} 1 & -2 & 3 \\ 0 & -1 & 4 \\ -2 & 2 & 1 \end{bmatrix}$

3. Find the maximum and minimum value of the following functions:

P.T.O.

(a) $f(x) = \log x / x$

(b) $f(x) = x^3 - 9x^2 + 15x - 3$

4. (a) If $y^{1/m} + y^{-1/m} = 2x$, prove that

$$(x^2 - 1)y_2 + xy_1 - m^2y = 0$$

(b) If $y = e^{\sin^{-1}x}$, prove that

$$(1 - x^2)y_2 - xy_1 - y = 0$$

5. Find the maximum and minimum of the function

$$x^3 + y^3 - 3x - 12y + 10$$

6. (a) If $u = \frac{x^2 \cdot y^2}{x + y}$, Show that

$$x \cdot \delta u / \delta x + y \cdot \delta u / \delta y = 3u$$

(b) If $f(x, y) = \log(x^2y + xy^2)$, Find

$$f_{xx} \text{ and } f_{yx}$$

7. (a) Evaluate:

$$\int \frac{dx}{x^2(4-x^2)}$$

(b) Evaluate:

$$\int \tan^4 2x \cdot dx$$

8. Solve the following:

(a) $xdy - ydx = \sqrt{x^2 + y^2} \cdot dx$

(b) $(x + y + 1)dy / dx = 1$

9. Solve:

$$d^2y/dx^2 - 4dy/dx + 3y = 2e^{3x}$$

10. Write short notes on the following:

- (a) Transpose Matrix
- (b) Singular Matrix
- (c) Taylor's Theorem
- (d) Inverse Matrix

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BC-102
Comp. Fund.

2017

Time : 3 hours

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. What is input device? Discuss the list of input device used in digital computer.
2. What is operating system. Explain the function of operating system.
3. What is Application Software? Distinguish between Application software and System software.
4. Explain primary memory of computer in details.
5. What important development took place during the fifth generation of computer?
6. Define the term language translator. Discuss the different type of Language translator in details.
7. Distinguish between Multiprogramming and Time Sharing operating system.

P.T.O.

8. Explain the Duality Principle. State the postulates of Boolean algebra.
9. What is Printer. Discuss the type of Printer in detail.
10. Explain the classification of computer in detail

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BC-103

Bus. Comm. & Inf. Sys.

2017

Time : 3 hours

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. What do you mean by "Barriers to Communication"? Also explain various barriers to communication.
2. Explain the various components of any business letter.
3. Explain in detail the concept of Receipt and Dispatch of mail.
4. What do you mean by Sales letter? Explain the AIDA approach of sales letter.
5. Describe the 8C's of any business letter.
6. What is Information ? What are its characteristics?
7. What are the methods for the collection of data.
8. Explain the concept of DSS.
9. Explain different phases of system development life cycle(SDLC).

P.T.O.

10. What do you mean by feasibility study? Explain different types of feasibility.

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BC-104

Fund. of Mgt.

2017

Time : 3 hours

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. What do you mean by Management? Explain its functions.
2. Define "Perception". Discuss its determinants in detail.
3. Distinguish between formal and informal organisation.
4. What is Motivation? Discuss the Maslow's theory of Motivation.
5. Define staffing. Explain steps involved in selection procedure.
6. "Organisation is formulating international structural of role". Explain.
7. What is planning ? Explain its need and importance in modern era for a business house.
8. Discuss the concept of Personality. How is personality of a leader related to organisational effectiveness?

P.T.O.

9. Discuss charismatic theory of leadership with a suitable example in Indian context.

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

(a) Human Resource Planning

(b) Direction

(c) Staffing

(d) Attitude.
