BCA(III) — Fund. of Mgt. & Bus. A/c
(BC – 301)

2023
(Session : 2021-24)

Time : 3 hours

Full Marks :80

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

*Answer any **five** questions.*

1. "Management is considered as an art consisting of basic principles of science." Explain.
2. What are the functions of a Good Manager ? Explain.
3. Define Accounting. Discuss the conventions of Accounting.
4. What are the ways to improve interpersonal effectiveness in an organisation ? Explain.

(Turn over)

5. What is Trial Balance ? Discuss the objectives of preparing trial balance.

6. Differentiate between Balance Sheet and profit and Loss Account.

9/1

7. Define Cash Book.Discuss various types of Cash Book.

8. What do you mean by Communication ? Elaborate the importance of Communication in our professional life.

9. Define Liabilities.Disciuss various types of liabilities.

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

    (a) Nature of Management

    (b) Golden Rules of Accounting

    (c) Double Entry System

    (d) Steps involved in Control Process

BCA(III) — DBMS
(BC – 302)

2023
(Session : 2021 – 24)

Time : 3 hours

Full Marks :80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. What is DBMS ? What are the basic components of DBMS ?
2. Define Normalization. Why it is done ? Explain.
3. What is E-R Model ? Describe it's basic concept in detail.
4. How Generalisation and specialisation are reverse to each other ? Also describe Aggregation.

5. What do you mean by functional dependency ? Describe the use of functional dependency in normalization of database.

6. What is DDL and DML commands with syntax and examples ?

7. What is Translation ? Write about commit, rollback and savepoint.

8. Differentiate among Candidate key, Primary key, Super key and Foreign key in detail.

9. What is View ? How do you create,update and delete a view ?

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

    (a) Cardinality and Modality

    (b) Cartesian Product

    (c) 3 NF

    (d) Aggregate functions

AE – 9

detail, by taking one example.

2. Explain

2023

(Session : 2021-24)

Time : 3 hours

Full Marks :80

Candidates are required to give their answers in their own words as far as practicable.

The questions are equal value.

*Answer any **five** questions.*

1. What is Object Oriented Programming ? Write down the features of object oriented proggamming language.

2. What is inline function in C++ ? Discuss the limitation of inline function. Write a C++ program to find maximum of given three number using class and object and inline function.

3. What is Constructor ? Explain the types of constructors. Write a C++ program to find area of a circle using constructor.

4. Explain friend function. Write a C++ program to demonstrate the concept of friend function using suitable examples.

5. What is Polymorphism ? Explain the types of polymorphism. Distinguish between Late binding vs Early binding.

6. What is operator overloading ? Write a C++ program to overload binary operator(+).

7. What is hybrid inheritance in C++ ? Write a C++ program to demonstrate the concept of hybride inheritance.

8. Explain dynamic memory allocation in C++. Write a C++ program to short n given number using dynamic memory allocation.

9. What is copy constructor ? Write a C++ program to show the concept of copy constructor using suitable example.

1. What is SQL ? What are the two majo
categories of SQL command ? Example, i

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

(a) Command line arguments

(b) Virtual functions

(c) Destructors

(d) Abstract class

100) 15386 (153·8
100
5386
500
386
300
200
0

BCA(III) — Num. Meth. (BC – 304)

2023
(Session : 2021 – 24)

Time : 3 hours

Full Marks :80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. Describe Bisection Method.Find a real root of the equation $x^3 - 2x - 5 = 0$ using Bisection method up to three places of decimal.

2. (a) Find the roots of the equation $x^3 - 5x - 7 = 0$ correct to 3 places of decimals, using the Regula-Falsi method.

   (b) Find the Newton-Rapshon iterative formula to find the pth root of a positive number N and hence find the cube root of 17.

(Turn over)

3. (a) Solve the following system of equations by Gauss elimination method :

$$5x_1 - x_2 + x_3 = 10$$

$$2x_1 + 4x_2 = 12$$

$$x_1 + x_2 + x_3 = -1$$

(b) Solve the following system of equations by Coout's reduction method :

$$2x_1 + 4x_2 + 2x_3 = 15$$

$$2x_1 + x_2 + 2x_3 = -5$$

$$4x_1 + x_2 - 2x_3 = 0$$

4. Use the Jacobi's method to find the solution of the following system of equations :

$$83x + 11y - 4z = 95$$

$$7x + 52y + 13z = 104$$

$$3x + 8y + 29z = 71$$

5. (a) Define forward difference, backward difference and central diference.

(b) Given $y_0 = 4$, $y_1 = 3$, $y_2 = 4$, $y_3 = 10$ and $y_4 = 24$, find the value of $\Delta 4y_0$.

6. (a) Using the Trapezoidal rule, compute the integral $\int_{0.5}^{1.1} x^2 y.dx$ from the given data in the table :

X	Y
0.5	0.48
0.6	0.57
0.7	0.65
0.8	0.72
0.9	0.8
1.0	0.86
1.1	0.92

(b) Compute $\int_0^1 \frac{1}{1} + x^2 \cdot dx$ using Simpson's one-third rule.

7. Using Runga-Kutta method of the fourth order to find y (0.2) and y (0.4), gives that $y.\frac{dy}{dx} = y^2 - x$, $y(0) = 2$ by taking $h = 0.2$.

8. Prove the following :

(a) $e^x = (\Delta^2 / E)\, e^x \cdot Ee^x / \Delta^2 \cdot e^x$

(b) $\left(E\frac{1}{2}+E-\frac{1}{2}\right)(1+\Delta)\frac{1}{2}=2+\Delta$

(c) $\Delta=\frac{1}{2}\delta_2+\delta v_1+\frac{\delta_2}{4}$

(d) $\Delta+\nabla=\Delta/\nabla-\nabla/\Delta$

9. (a) Use Trapezoidal rule to evaluate considering five sub-intervals.

(b) Evaluate using Simpson's $\frac{3}{8}$ rule taking $h=\frac{1}{6}$.

10. Using Runga-Kutta method of second order solve : $\frac{dy}{dx}=y-x$, $y(0)=2$, find $y(0{\cdot}1)$ and $y(0{\cdot}2)$ correct to four decimal places.Carry out first five interation , taking initial starting of solution vector as (0,0, 0) 7.