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BCA (Semester-III) Examination, 2021

(Session : 2019-22)

COMPUTER APPLICATION

[Paper : BCA-301]

(Fundamental of Management and Basic Accounting)

Time : Three Hours]

[Maximum Marks : 80

Note : 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. Define Accounting. Discuss Advantages and limitations of Accounting.

2. Discuss Golden Rule of Accounting with examples.

3. Define ledger. Differentiate between Journal and Ledger.

4. What is trial balance ? Discuss the features and objectives of trial balance.

5. Differentiate between trading Account and Profit and Loss Account.

6. Define Account. Discuss various types of account with examples.

7. Write short notes on **any two** :

(a) Assets

(b) Planning

(c) Computer Accounting

(d) Communication

8. Journalise the following transactions in the books of Sohan :

(i) Business started with Cash. ₹ 50000

(ii) Purchased goods for Cash ₹ 10000

(iii) Purchased goods from Mohan on credit ₹ 6000

(iv)	Paid-in to Bhanu	₹ 5000
(v)	Purchased furniture	₹ 2000
(vi)	Sold goods for cash	₹ 7000
(vii)	Sold goods to Ram	₹ 5000
(viii)	Paid to Mohan	₹ 3000
(ix)	Paid wages	₹ 3000
(x)	Paid Rent	₹ 1000

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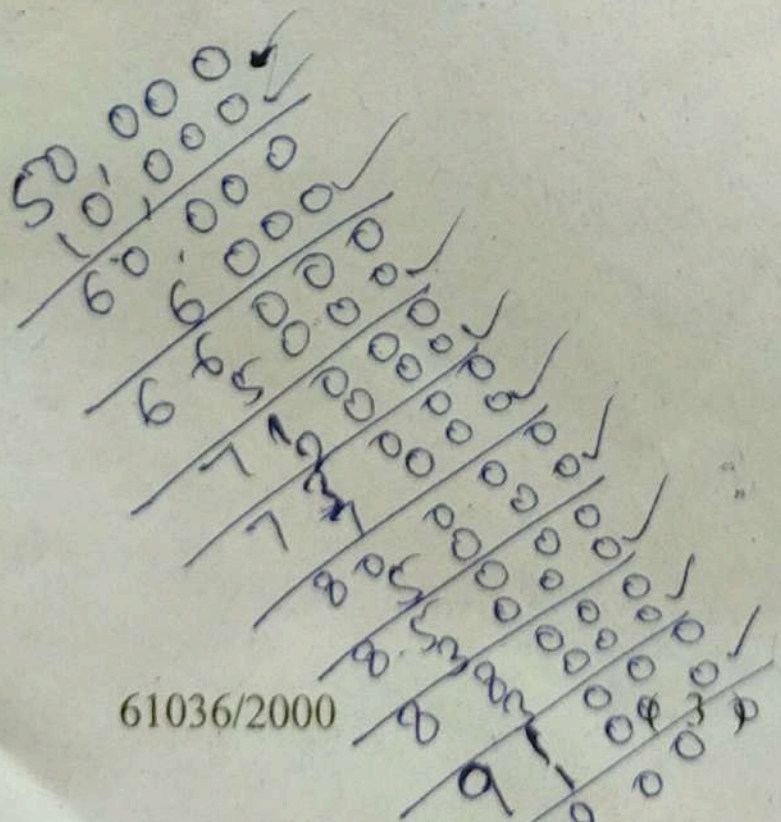

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BCA (Semester-III) Examination, 2021

(Session : 2019-22)

COMPUTER APPLICATION

[Paper : BCA-304]

(Numerical Methodology)

Time : Three Hours] **[Maximum Marks : 80**

Note : 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. If 0.333 is the approximate value of 1/3. Find absolute, relative and percentage error.

2. Find a real root of the equation $x^3 - 2x - 5 = 0$ by the method of false position correct to three decimal places.

$$\frac{x_1 y_2 - x_2 y_1}{y_2 - y_1}$$

3. Prove that :

(a) $\Delta = E - 1$

(b) $E = 1 + \Delta$

(c) $\mu = \frac{1}{2}(E^{1/2} + E^{-1/2})$

(d) $\Delta = E\nabla = \nabla \cdot E = \delta \cdot E^{1/2}$

4. Solve the system of equations

$$2x + 3y + z = 9$$

$$x + 2y + 3z = 6$$

$$3x + y + 2z = 8$$

by using LU decomposition method.

5. Solve the following system of equations by Jacob's iteration method.

$$10x_1 + x_2 + x_3 = 9$$

$$x_1 + 10x_2 - x_3 = -22$$

$$-2x_1 + 3x_2 + 10x_3 = 22$$

6. Evaluate :

(a) $\nabla = \delta \cdot E^{-1/2}$

(b) $\delta = \Delta(1+\Delta)^{-1/2} = \nabla \cdot (1-\nabla)^{-1/2}$

(c) $\nabla \cdot \Delta = \Delta - \nabla = \delta^2$

(d) $\Delta + \nabla = \frac{\Delta}{\nabla} - \frac{\nabla}{\Delta}$

7. Prove the following relations :

(a) $\mu = \frac{2+\Delta}{2\sqrt{1+\Delta}} = \sqrt{1+\frac{1}{4}\delta^2}$

(b) $\Delta = \frac{\delta^2}{2} + \delta\sqrt{1+\frac{1}{4}\delta^2}$

8. Using Trapezoidal rule to evaluate :

$\int_0^1 \frac{dx}{1+x^2}$, taking $h = \frac{1}{4}$

9. Evaluate :

$\int_3^7 x^2 \log x \, dx$ by using Simpson's $\frac{1}{3}^{rd}$ rule with equal sub interval.

10. Find the value of y(1, 1) using Ranga Kutta method of 2^{nd} order that :

$$\frac{dy}{dx} = y^2 + xy, \; y(1) = 1, \; h = 0.1$$

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BCA (Semester-III) Examination, 2021

(Session : 2019-22)

COMPUTER APPLICATION

[Paper : BCA-302]

(Database Management System)

Time : Three Hours] **[Maximum Marks : 80**

Note : 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 ? Explain basic components and its functions.

2. What are the types of DBMS ? Briefly introduce them.

3. Give architecture of Database System and explain Data Models, Schemas and Instances.

4. What do you mean by the term Data Independence ? Explain it with suitable example.

5. (a) What are the five major functions of Data Base Administrator ? Briefly explain them.

(b) Explain Super Class and Sub Class with an example.

6. Discuss different types of degree of relationship used in RDBMS in detail.

7. Differentiate between Candidate Key, Primary Key, Super Key and Foreign Key in detail.

8. What is ER modeling ? Describe the basic concept of ER Model in detail with suitable example.

9. Write detailed notes on Functional Dependencies and its types.

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

(a) Denormalization

(b) Relational Algebra

(c) Functional Dependency

(d) Redundancy

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BCA (Semester-III) Examination, 2021

(Session : 2019-22)

COMPUTER APPLICATION

[Paper : BCA-303]

(Object Oriented Programming Using C++)

Time : Three Hours] **[Maximum Marks : 80**

Note : 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. Discuss the evolution of C++. Write down the features and application of C++ in details.

2. What is friend function? Write a C++? program to demonstrate the concept of friend function using suitable example.

3. What is operator overloading in C++ ? Write a C++ program to overload unary operator (++) with suitable example.

4. Write a C++ program to overload binary operator using friend function. Explain the pit falls of operator overloading.

5. Explain array of object. Write a C++ program to enter n student's name, roll number and total marks. Display student's name, roll number and total marks using array of objects.

6. What is Inheritance? Also explain the base class and derived class. Explain the types of inheritance with diagram.

7. Write a C++ program to demonstrate the order of constructor and destructor in multiple inheritance.

8. Explain dynamic memory allocation in C++. Write a C++ program to enter n number in an array. Print the number in descending order using new and delete operator.

9. Defines tream classes in C++. Write a C++ program to create a text file and display the contents of a text file using file processing.

10. Write notes on any two :

(a) Destructor

(b) Command line aguments

(c) Static Data Member and Static Member Fuction

(d) Copy constructor.

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