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

2024
(Session : 2022-25)
(Paper ID : 13005)

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 do you mean by Management ? Explain various functions of management in an organisation.

2. What are the main elements of Effective Control System ? Discuss.

3. Discuss the nature and purpose of controlling. What are the steps involved in controlling process ?

4. What is Communication ? Discuss about the importance of communication in Management.

5. What do you mean by accounting ? Explain its concept and conventions and explain its function also.

6. What is Double Entry System ? Discuss advantages and disadvantages of double entry system.

7. What do you mean by Ledger ? Draw the format of ledger and explain it. Distinguish between ledger and journal.

8. Write journal entry for the following transaction in the books of Pannalal & Co. :

January, 2023 :

1 Business started with cash Rs. 80,000

4 Purchased goods for cash Rs. 20,000

8 Purchased goods from Mohan on credit of Rs. 30,000

10 Purchased Furniture of Rs. 14,000

12 Purchased Machinery of Rs. 10,000

15 Sold goods on credit to Pranav of cash Rs. 9,000

21 Sold goods to Ramesh for cash of Rs. 8,000

30 Paid rent Rs. 7,000

30 Paid interest of Rs. 3,200

31 Paid salaries by cheque Rs. 25,000

9. From the details given below prepare a Trial Balance as at March 31, 2022 :

Particulars	Rs.
Purchases	80,000
Salaries & Wages	42,500
Discount (Dr.)	6,500
Sales	1,50,000
Travelling Expenses	2,500
Carriage Outwards	225
Carriage Inwards	1,375
Repairs	1,500
Insurance	750
Miscellaneous Expenses	275
Commission Paid	1,625
Buildings	20,000
Rent and Rates	2,500
Machinery	7,500
Cash in hand	125
Horses and Carts	2,500
Cash at Bank	13,625
Stock in Trade (1-4-2021)	29,500
Sundry Debtors	16,025
Capital	68,525
Sundry Creditors	10,500

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

(a) Profit and Loss A/c

(b) Balance Sheet

(c) Journal

(d) Human Resource Planning

(e) Direction

(f) Staffing

2024
(Session : 2022-25)
(Paper ID : 13006)

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. Explain the role and responsibilities of a Database Administrator.

2. Explain three levels of data abstraction in detail.

3. How DBMS makes it easy to store and maintain data into database ? Explain.

4. What is Relational Data Model ? Illustrate the structure of Relational Data Model.

5. Do the following using SQL commands :

   (a) Write command to create the logical structure of the following database table student (Roll, Name, Course, Sem, Contact)

   (b) To insert a record.

   (c) List those entire students having course BCA.

   (d) Delete the whole structure of the student table.

6. Explain advantages and disadvantages of DBMS.

7. Why there is a need of database recovery ? Discuss, in detail, Log Based Recovery Scheme.

8. Compare hierarchical, network and Relational Model in Database.

9. What are main differences between a file processing system and a database system ?

10. Write short notes on the following :

   (a) DB auditing

   (b) Data Encryption

   (c) Instance and Schema

   (d) Database Designer

BCA(III) — OOP Using C++ (303)

2024
(Session : 2022-25)
(Paper ID : 13007)

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 function overloading ? Write a program to explain it.

2. Explain all three types of function calling techniques in C++. How call by reference in C++ is different from that of C language ?

3. Differentiate between structure and union in C++.

4. What is difference between class and object ? Explain with syntax and examples.

5. Explain the concept of encapsulation and abstraction. Write a program to demonstrate the concept of encapsulation and abstraction.

6. What is static function and variable in C++ ? Write a program to demostrate the concept of static function and variable.

7. What is inheritance in C++ ? Explain types of inheritance with examples.

8. What is virtual function and why we use it ? Write a program to demostrate virtual function.

9. What is string in C++ ? Write any five methods of String class with syntax and examples.

10. Write short notes on the following :

    (a) This pointer

    (b) Member function

    (c) New and delete operator

    (d) Const keyword

2024
(Session : 2022-25)
(Paper ID : 13008)

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. Find Absolute, Relative and Percentage error if 625.483778 is approximated to three significant digits.

2. Form the difference table for the function $y = x^3 + x + 1$ at $x = 0, 1, 2, 3, 4$ and find :
   (a) $\Delta^2 y_2$
   (b) $\Delta^3 y_1$
   (c) $\Delta^4 y_3$

3. Evaluate f(15) given following table value :

X	Y = f(x)
10	46
20	66
20	81
40	93
50	101

Use the Newton forward difference interpolation formula.

4. Find the value of $\int_0^{\frac{\pi}{2}} \sqrt{1-0.162 \sin^2 x}\, dx$ using Simpson's One-Third rule. Divide the interval of integration in 6 equal sub-intervals.

5. Using Picard's method solve $\frac{dy}{dx} = 1 + xy$ with $y(0) = 2$, find $y(0.1)$, $y(0.2)$ and $y(0, 3)$.

6. Given $\frac{dy}{dx} = x^3 + y$, $y(0) = 2$, Compute $y(0.2)$, $y(0.4)$ and $y(0.6)$ by Runge-Kutta method of forth order.

7. Solve $x^3 + x^2 - 1 = 0$ using Bisection method correct to 4 decimal places.

8. Prove the following relations :

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

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

9. Solve by Crout's method :

$x + y + z = 3$

$2x - y + 3z = 16$

$3x + y - z = -3$

10. Solve following equations by Jaccobi's method :

$10x + 2y + z = 9$

$x + 10y - z = -22$

$-2x + 3y + 10z = 22$