

D

(Printed Pages 3)

(20221)

Roll No.

BCA-V Sem.

18021

B.C.A. Examination, Dec.-2020

INTRODUCTION TO DBMS

(BCA-501)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt questions from **all** sections as per instructions.

Section- A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries 3 marks. Very short answer is required. $3 \times 5 = 15$

1. What are the advantages of file processing system which were removed by DBMS?

P.T.O.

2. Give example of a simple, composite attributes of an entity.
3. What do you mean by referential integrity?
4. What do you mean by DML and DDL?
5. What are anomalies in 1NF?

Section - B

Note : Answer any **Two** questions out of the following **Three** questions. Each question carries $7\frac{1}{2}$ marks. Short answer is required. $7\frac{1}{2} \times 2 = 15$

6. What do you mean by a key to relation? Explain the difference between super key, candidate key and primary key.
7. Define functional dependency. What do mean by loss-less decomposition?
8. Define Normal forms. List the definition of first, second and third normal forms.

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Section - C

Note : Answer any **Three** questions out of the following **five** questions. Each carries 15 marks. Answer is required in detail. $15 \times 3 = 45$

9. What is transactions? Draw a state diagram of transactions showing its states.
10. Explain ACID properties of a transaction with suitable example.
11. What are schedules? What are difference between conflict serializability and view serializability? <https://www.ccsustudy.com>
12. What are distributed database?
13. Describe the major problem associated with concurrent processing with example.

D (Printed Pages 4)
 (20221) Roll No.
 BCA-V Sem.

18022
B.C.A. Examination, Dec.-2020
Java Programming and Dynamic
Webpage Design
(BCA-502)

Time : Three Hours] [Maximum Marks : 75

Note : Attempt questions from **all** sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt **all** questions. **All** questions carry equal marks. $3 \times 5 = 15$

1. What is difference between a function and a method?
2. Write an applet to draw square inside a rectangle.

P.T.O.

3. Explain why Java is considered as the best language for Internet Applications.
4. Discuss various primitive data types supported by Java.
5. What do you mean by class and objects? Explain with suitable example.

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three questions. $7\frac{1}{2} \times 2 = 15$

6. Define Cookies. Explain the role of HTTP give the supportive example also.
7. What are the package in Java? Illustrate the appropriate example.
8. Explain the following:

(a) Multi threading	4
(b) Encapsulation	3½

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Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following five questions. $15 \times 3 = 45$

9. (a) What is an exception? What are the methods of handling exception in Java. 7
- (b) What is difference between Application and Applet? Explain how will you write a simple applet to display Hello word message. 8
10. What do you mean by Cascading Style Sheet (CSS)? What are the advantage of CSS? How many ways are there to specify style information in a document?
11. What is Servlet? Explain life cycle of servlet. Give the supportive example also.

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P.T.O.

12. (a) Explain Applet life cycle. Write all method used to create an applet. 7
- (b) Explain Socket. How many types of Socket can be created in Java. Give an example also. 8
13. (a) What is Inheritance in Java? Explain all its type. 7
- (b) What is JSP? Explain all the main component of JSP and advantage of JSP. 8

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D (Printed Pages 4)
(20221) Roll No. _____
BCA.-V Sem.

18024

B.C.A. Examination, Dec. 2020
Numerical Methods
(BCA-504)

Time : Three Hours / [Maximum Marks : 75

Note : Attempt questions from all Sections as per instructions. Calculator is allowed.

Section-A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each question carries **3** marks. $3 \times 5 = 15$

- Find the real root of the equation:
 $f(x) = x^3 - x - 1 = 0$
- Define operators E , Δ and ∇ . Also obtain relation between E and Δ .

P.T.O.

- Given $\frac{dy}{dx} = \frac{y-x}{y+x}$ with $y=1$ for $x=0$. Find $y(0.3)$ by Euler's method taking $h=0.1$.
- Define Simpson's three-eight rule for Numerical integration.
- What do you understand by Gauss's eliminations method?

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following **three** questions. Each question carries **7½** marks.

$7\frac{1}{2} \times 2 = 15$

- Use Picard's method to approximate y when $x=0.2$, given that $y=1$ when $x=0$ and $\frac{dy}{dx} = x - y$.
- Find the value of y when $x=10$ for the following table:

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x	5	6	9	11
y	12	13	14	16

8. Using Bessel's formula, find y (25) from the following data:

x	20	24	28	32
y	24	32	35	40

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries **15** marks. $15 \times 3 = 45$

9. Apply Gauss-Seidal iteration method to solve the equations.

$$20x + y - 2z = 17$$

$$3x + 20y - z = -18$$

$$2x - 3y + 20z = 25$$

10. Use Runge-Kutta method of fourth order, to find y (0.2) for the equation.

$$\frac{dy}{dx} = \frac{y-x}{y+x} \quad y(0)=1, \text{ take } h=0.2$$

11. Evaluate $\int_0^6 \frac{dx}{1+x^2}$ by using.

(a) Trapezoidal rule

(b) Simpson's $\frac{1}{3}$ rule.

12. By using Newton-Raphson's method, find the root of $x^4 - x - 10 = 0$ which is nearer to $x=2$ correct to three places of decimal. Also obtain the rate of Convergence of Newton-Raphson's method.

13. (a) The following value of the function $f(x)$ for values of x are given:

$$f(1)=4, f(2)=5, f(7)=5, f(8)=4.$$

Find the value of $f(6)$ and also the value of x for which $f(x)$ is maximum or minimum.

(b) Apply Lagrange's formula to find the cubic polynomial which includes the following values of x and y_x :

x	0	1	4	6
y_x	1	-1	1	-1

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18023

B.C.A. Examination, Dec.-2020

Computer Networks

(BCA-503)

Time : Three Hours] [Maximum Marks : 75

Note : Attempt questions from all Sections
as per instructions.

Section-A

(Very Short Answer Questions)

Note : Answer all the **five** questions. Each
question carries **3** marks. Very short
answer is required. $3 \times 5 = 15$

1. Enlist the components of data communication.
2. Explain attenuation in a signal.

P.T.O.

3. Four channels, each with a 100-KHz bandwidth, are to be multiplexed together, what is the minimum bandwidth of the link if there is a need for a guard band of 10 KHz between the channels to prevent interference?
4. Differentiate gateways & routers.
5. What is connection-less service provided by the transport layer?

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following **three** questions. Each question carries **7½** marks. Short answer is required. $7\frac{1}{2} \times 2 = 15$

6. Explain any **one** of the following:-
 - (a) Ring & star topology.
 - (b) Transmission modes.

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7. Discuss point-to-point protocol (PPP).
8. Explain the functions of presentation layer.

13. How DTE-DCE interface works? Also discuss the essence of modems. 10+5

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries **15** marks. Answer is required in detail. $15 \times 3 = 45$

9. Explain the distance vector routing algorithm with an example.
10. Discuss the different guided medias with the uses. <https://www.ccsustudy.com>
11. How circuit switching works in a network, explain in detail.
12. Discuss different protocols at application layers.

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