G
(21218)
BCA- V Sem.

Roll No. ....

18023

B. C. A. Examination, Dec. 2018

Computer Networks

(BCA-503)

(New)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required.   3×5=15

1. Explain how quality of service is provided through integrated services.

2. What is the difference between circuit switching and packet switching ?

3. Explain in detail about the steps involved in the routing process of a packet network.

4. What do you understand by Gateway ?

5. Explain ethenet protocol.

Section-B

(Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required.   7½×2=15

6. Explain error detection and error correction code.

7. Explain any one of the following :
   (a) NCP
   (b) PPP layers.

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8. What is the difference between TCP and OSI model ?

Section-C

(Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Explain the connection management of transmission control protocol.

10. Explain the functions of session presentation and application layer.

11. Explain the design issues of network layer.

12. What is Congestion Control Algo ? Explain with example.

13. Explain any one of the protocols used for flow control in noisy channel fibre distributed data interface operation.

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BCA-V Sem.

Roll No. ....

18021

B. C. A. Examination, Dec. 2018

Introduction to DBMS

(BCA-501)

(New)

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required.

3×5=15

1. Define super keys, candidate keys and primary keys.

2. Explain the term – data independence.

3. What is hashing ? Explain.

4. What do you mean by relational database ? Describe.

5. Briefly explain the terms – security and authorization.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required.   7½×2=15

6. What is a referential integrity constraint ? Why do we need it ? Explain with the help of suitable example.

7. List four significant differences between a file-processing system and a DBMS.

8. Explain third normal form with example.

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Section-C

(Detailed Answer Questions)

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

9. Explain the different locking techniques with example for concurrency control.

10. Explain indexed sequential, B tree and B+ tree file organization with example.

11. Explain super class, inheritance and generalization with example.

12. Write short notes on the following :

   (i) Strong and weak entity

   (ii) Different levels of data abstraction

   (iii) Database recovery techniques.

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13. A hospital maintains data about the following entities :

   (i) PATIENTS (SSNo, LastName, FirstName, HomePhone, Sex, DateofBirth, Age, Street, City, State, Zip)

   (ii) DOCTORS (SSNo, LastName, FirstName, OfficePhone, Pager, Specialty)

   (iii) BEDS (RoomNumber, BedNumber, Type, Status, PricePerHour)

   (iv) ACCOUNTS (DateIn, DateOut, Amount)

Construct an E-R diagram for the hospital management; specify keys, mapping cardinalities, participation constraints (if necessary).

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18022

B. C. A. Examination, Dec. 2018

Java Programming and Dynamic Webpage Design

(BCA-502)

(New Course)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required.   3×5=15

1. Java is platform independent. Justify.   3

2. What is final variable ? Give example also.   3

3. Explain the main component of JSP.   3

4. What are the different types of drivers used in Java database connectivity ?   3

5. What is Applet viewer ? Explain.   3

Section-B

(Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required.   7½×2=15

6. Explain the following :
   (a) Super and Final   3½
   (b) Exception.   4

7. Define Cascading style sheet. Explain it with a supportive example.   7½

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8. What are packages ? How packages are created in Java ? Explain and give example also. 7½

Section-C

(Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. What is inheritance in Java ? Explain its types. If we need to extend more than one class, how it work ? Give the code also. 15

10. What is JSP ? Explain the advantage of JSP and main component also. How is it differ from Servlet ? Give an example to support your answer. 15

11. (a) Explain Applet life cycle. Write the all methods used to create applet with example. 8

    (b) Explain socket. How many types of socket can be created in Java ? Give example also. 7

12. (a) Define Multithreading. Explain the way to create the thread with suitable example. 8

    (b) Explain Servlet life cycle. 7

13. (a) Explain exception handling in Java. What is the method of handling exception in Java ? 7

    (b) What is AWT ? Explain about the various AWT controls available in Java with an example also. 8

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B. C. A. Examination, Dec. 2018

Numerical methods

(BCA-504)

(New Course)

Time : Three Hours]   *[Maximum Marks : 75*

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

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks.   3×5=15

1. Find $\sqrt{12}$ by applying Newton-Raphson's method.

2. Prepare a divided difference table for the following data :

x	1	2	4	7	12
$f(x)$	22	30	82	106	216

3. Find the first derivative of $f(x)$ at $x = 0.4$ from the following table :

x	0.1	0.2	0.3	0.4
$y = f(x)$	1.1051	1.2214	1.3498	1.4918

4. Solve :

$$5x - y - 2z = 142$$
$$x - 3y - z = -30$$
$$2x - y - 3z = 5$$

by Gauss's elimination method.

5. Given that :

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

find $y(0.1)$ by Picard's method.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. 7½×2=15

6. Given $f(0)=16.35$, $f(5)=14.88$, $f(10)=13.59$, $f(15)=12.46$ and $f(x) = 14.00$, find x.

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7. Estimate the sale for 1966 using the following data :

Year	Sales (in thousand)
1931	12
1941	15
1951	20
1961	27
1971	39
1981	52

8. Find the root of $x^2 - 5x + 2 = 0$ correct to five decimal places by Newton-Raphson's method.

Section-C

(Detailed Answer Questions)

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

9. Using Runge-Kutta method, find an approximate value of y for $x = 0.2$ if $\dfrac{dy}{dx} = x + y^2$, given that $y = 1$ when $x = 0$ and $h = 0.1$.

10. Evaluate $\displaystyle\int_0^1 \dfrac{dx}{1 + x^2}$ by using Simpson's '3/8' rule. Hence obtain the approximate value of π.

11. Solve by Gauss-Seidel method of iteration, the equations :

$$10x + y + z = 12$$
$$2x + 10y + z = 13$$
$$2x + 2y + 10z = 14.$$

12. Using Stirling formula, find $f(28)$ from the following table :

$f(20) = 49225$, $f(25) = 48316$, $f(30) = 47236$,

$f(35) = 45926, f(40) = 44306$.

13. Find the real root of the equation $x \log_{10} x - 1.2 = 0$.

    Correct to five places of decimal.