COA 201 Reg. No.....

CREDIT BASED SECOND SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
DATABASE MANAGEMENT SYSTEMS

Duration: 3 Hrs. **Max. Marks: 80**

PART – A

1. **Answer any TEN questions from the following:** 10×2=20

   a) What is a database schema?

   b) What do you mean by data independence?

   c) Expand DBA and DML.

   d) Define primary key and super key.

   e) Differentiate between logical and physical data independence.

   f) Write the significance of ROLLABACK and COMMIT statements.

   g) What are data constraints? List any two levels of constraints?

   h) What do you mean by weak entity?

   i) List any two recovery techniques.

   j) What is a sub query?

   k) Explain the DEFAULT Clause in a table definition.

   l) Give the general structure of PL/SQL program.

PART – B

Answer any TWO questions from each unit:

2. a) Explain types of database languages.

   b) Define the following:
   i) entity ii) attribute iii) relationship iv) null value v) key (5 + 5)

3. a) Explain relational and network data models.

   b) What are the advantages of using DBMS? (6 + 4)

4. a) Explain the different types of database users.

   b) Explain three schema architecture of DBMS. (5 + 5)

UNIT – II

5. a) Discuss any two types of Join operations in relational algebra.

   b) Explain 3NF with an example. (5 + 5)

6. a) Write a note on functional dependency.

b) What is union compatibility of a relation? Explain UNON and INTERSECT operations of relational algebra with examples. (5 + 5)

7. a) Explain SELECT and PROJECT operations with syntax and an example for each.

b) State Armstrong's inference rules. (6 + 4)

UNIT – III

8. a) With syntax and suitable example, explain the following commands:
i) Create table ii) Delete Table iii) Update table.

b) Explain ALTER TABLE command with syntax and example. (6 + 4)

9. a) How do you define foreign key constraint at column level and table level?

b) Consider the following relational schema STUDENT(ROLLNO, SNAME, DATE-OF-BIRTH, COURSE, SEMESTER)
Write SQL queries for the following:

i) Display all students of 2nd semester BCA

ii) Display the no. of students who have opted for BCOM course

iii) Change the course of SNAME= 'PRIYA' to 'BBM'. (4 + 6)

10. a) What is a trigger? How do you create triggers? Explain with example.

b) Differentiate between implicit and explicit cursor. (6 + 4)

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COA 202.2 Reg. No.....

CREDIT BASED SECOND SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
ADVANCED PROGRAMMING IN 'C' AND DATA STRUCTURES

Duration: 3 Hrs. **Max. Marks: 80**

PART – A

1. **Answer any TEN questions from the following:** 10×2=20

a) What is a FILE? Write the different types.

b) How can a pointer variable be initialized? Give example.

c) Write any two applications of a binary tree.

d) What is priority queue?

e) Define the terms:

i) root ii) degree of a tree

f) What do you mean by data structure? What are the types?

g) What is dynamic memory allocation? Give any two commands for dynamic memory allocation.

h) Write any two applications of stack.

i) What is searching? List the different types.

j) Write the statement used to read an integer value from a file.

k) What are command line arguments? Give an example.

l) Write any two advantages of using files.

PART – B

Answer any TWO questions from each unit:

UNIT – I

2. a) Explain Array of pointers with example.

b) Differentiate between i) getc and getchar ii) puts and fputs (5 + 5)

3. a) Explain how structure can be accessed using pointer with example.

b) Explain the different ways of opening a file with syntax and example. (5 + 5)

4. a) Explain any two functions used for the input and output operations on FILE with syntax and example.

b) Write a program to calculate the total marks, percentage and grade using pointers to structures, which holds rno, name and marks in three subjects. (5 + 5)

UNIT – II

5. a) What is a Queue? Write an algorithm to delete an element from the queue.

b) Write an algorithm to solve matching of nested parenthesis. (5 + 5)

6. a) What is doubly linked list? Write an algorithm to delete a first node from it.

   b) Explain the memory representation of arrays. Also write the formula to locate a particular element in a one dimensional array. (5 + 5)

7. a) Differentiate between i) Arrays & linked list ii) Queue and priority queue

   b) What is stack? Explain the different operations performed on stack. (4 + 6)

UNIT – III

8. a) Explain the linked representation of a binary tree with an example.

   b) Explain quick sort with the help of an example. (5 + 5)

9. a) What is Binary Search tree? Explain with example.

   b) Write an algorithm to search an element using linear search. (5 + 5)

10. a) Draw the binary tree for the expression. $a + (b/d - e\hat{}f) - \times * (y + 2)$ and traverse in pre order, post order and in order.

    b) Explain Bubble sort with an example. (6 + 4)

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COA 402 Reg. No.....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
VISUAL PROGRAMMING USING VB.NET

Duration: 3 Hrs. **Max. Marks: 100**

PART – A

1. **Answer any ELEVEN questions from the following:** 11×2=22

   a) Write any two features of VB.NET.

   b) List any two system Namespaces.

   c) Write the use of str and val functions.

   d) How to write comments in VB.NET?

   e) Mention the logical operators used in VB.NET.

   f) How are Panels different from GroupBox?

   g) What is the difference between CheckBox and Radio Button?

   h) Differentiate between enabled and visible properties.

   i) Give an example for using with statement.

   j) What is the use of 'finally' block?

   k) Name any two data providers.

   l) What is a data grid?

   m) What is CLR?

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a) Explain Do..Loop with syntax and example.

   b) Explain the following parts of VB IDE.

   i) Properties window ii) Code window

   c) Write a note on standard Arrays and Dynamic Arrays. (5 + 4 + 4)

3. a) Explain simple If and If-Else statements with syntax and examples.

   b) Explain the benefits of CLR.

   c) With syntax and example, explain For..Next and For Each..Next loop. (4 + 5 + 4)

4. a) Write the syntax of select case and give an example.

   b) Name the different datatypes available in VB.NET. Also mention their storage size.

   c) Explain the steps involved in managed code execution process. (3 + 5 + 5)

UNIT – II

5. a) Explain MsgBox function with syntax and example.

   b) Briefly explain Radio Button and Combo Box.

   c) Explain parameter arrays for defining and invoking procedures with suitable example. (4 + 4 + 5)

6. a) Explain the following properties of a TextBox. i) MaxLength ii) PasswordChar iii) ReadOnly iv) MultiLine v) Text vi) WordWrap

   b) Write a note on property procedure.

   c) Differentiate between value and Reference parameters with suitable code example.(5 + 4 + 4)

7. a) Write the VB code for the following:
      i) Setting Title Bar Text to the form
      ii) Showing and hiding the form
      iii) Display the form in the centre of the screen
      iv) Set a form as MDI form
      v) Closing the form

   b) Write a note on ListBox

   c) How would you define an Interface? Explain with suitable example. (4 + 4 + 5)

UNIT – III

8. a) Explain the architecture of ADO.NET.

   b) With an example, explain simple data binding.

   c) Explain Fill( ) and update( ) methods of Data Adapter class. (5 + 4 + 4)

9. a) Explain the advantages of ADO.NET.

   b) With an example, explain user defined exception.

   c) Explain how data can retrieved using SQL DataReader? (5 + 4 + 4)

10. a) Explain Try-catch-finally block usage in VB.NET with an example.

    b) Write a note on Navigating in Datasets.

    c) With an example, explain how to create a dataset? (5 + 4 + 4)

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COA 402(R) Reg. No.....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
VISUAL PROGRAMMING USING VB.NET

Duration: 3 Hrs. **Max. Marks: 120**

PART – A

1. **Answer any FIFTEEN questions from the following:** 15×2=30

a) Write any two features of VB.NET.

b) List any two system Namespaces.

c) What is IntelliSence? Mention any 2 options of Intellisence.

d) Write the use of str and val functions.

e) How to write comments in VB.NET?

f) What is the purpose of IsNumeric and IsError functions?

g) Mention the logical operators used in VB.NET.

h) What is meant by a Control Class?

i) How are Panels different from GroupBox?

j) Mention the use of RichTextBox.

k) What is the difference between CheckBox and Radio Button?

l) Differentiate between enabled and visible properties.

m) Give an example for using with statement.

n) What is the use of 'finally' block?

o) Name any two data providers.

p) What is a data grid?

q) What is CLR?

r) What is the use of ExecuteScalar and ExecuteNonQuery methods?

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a) Explain Do..Loop with syntax and example.

b) Explain the following parts of VB IDE.

i) Properties window ii) Code window iii) Toolbox

c) Write a note on standard Arrays and Dynamic Arrays. (5 + 6 + 4)

3. a) Explain simple If and If-Else statements with syntax and examples.

b) Explain the benefits of CLR.

c) With syntax and example, explain For..Next and For Each..Next loop. (5 + 6 + 4)

4. a) Write the syntax of select case and give an example.

b) Name the different datatypes available in VB.NET. Also mention their storage size.

c) Explain the steps involved in managed code execution process. (4 + 6 + 5)

UNIT – II

5. a) Explain MsgBox function with syntax and example.

b) Briefly explain Radio Button and Combo Box.

c) Explain parameter arrays for defining and invoking procedures with suitable example. (4 + 6 + 5)

6. a) Explain the following properties of a TextBox. i) MaxLength ii) PasswordChar iii) ReadOnly iv) MultiLine v) Text vi) WordWrap

b) Write a note on property procedure.

c) Differentiate between value and Reference parameters with suitable code example.(6 + 4 +

7. a) Write the VB code for the following:
   i) Setting Title Bar Text to the form
   ii) Showing and hiding the form
   iii) Display the form in the centre of the screen
   iv) Set a form as MDI form
   v) Closing the form

b) Write a note on ListBox

c) How would you define an Interface? Explain with suitable example. (6 + 4 + 5)

UNIT – III

8. a) Explain the architecture of ADO.NET.

b) With an example, explain simple data binding.

c) Explain Fill( ) and update( ) methods of Data Adapter class. (5 + 5 + 5)

9. a) Explain the advantages of ADO.NET.

b) With an example, explain user defined exception.

c) Explain how data can retrieved using SQL DataReader? (5 + 5 + 5)

10. a) Explain Try-catch-finally block usage in VB.NET with an example.

b) Write a note on Navigating in Datasets.

c) With an example, explain how to create a dataset? (5 + 5 + 5)

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COA 403.1 Reg. No.....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
SOFTWARE ENGINEERING

Duration: 3 Hrs. **Max. Marks: 120**

PART – A

1. **Answer any FIFTEEN questions from the following:** 15×2=30

a) Define software engineering.

b) What is scalability?

c) Define software process.

d) What is a module?

e) Differentiate between product metrics and process metrics.

f) What is status accounting and auditing?

g) What is project control list?

h) What is stepwise refinement?

i) Define coupling and cohesion.

j) What do you mean by divide and conquer?

k) List the common errors that occur in DFD.

l) What is unit testing?

m) Represent iteration and decision in structure chart.

n) Define fault and failure.

o) Differentiate between black box and white box testing.

p) What do you mean by symbolic execution?

q) What are comments?

r) Define software maintenance.

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a) Explain the software problem.

b) Write a note on Iterative enhancement model.

c) Explain the components of software configuration management process. (5 + 4 + 6)

3. a) Explain the different phases of phased development process.

b) Write a note on prototyping model.

c) Briefly explain the various activities of software configuration management process. (6 + 4 + 5)

4. a) Explain the software engineering problem.
   b) With the help of diagram explain the waterfall model.
   c) Write the major components of a software process. (6 + 6 + 3)

UNIT – II

5. a) Explain the characteristics of SRS.
   b) Write a note on Design Walkthrough.
   c) Explain the various levels of cohesion. (6 + 5 + 4)

6. a) Explain the components of SRS.
   b) Explain the steps in SDM strategy.
   c) Explain the verification methods of Detailed Design. (6 + 5 + 4)

7. a) Explain the activities of requirement process with the help of diagram.
   b) Explain the various factors that affect the coupling.
   c) Write a note on Logic/Algorithm Design. (6 + 5 + 4)

UNIT – III

8. a) Explain the data-flow based testing with example.
   b) Explain the concept of structured programming.
   c) Explain the cause – effect graphing with the help of diagram. (5 + 4 + 6)

9. a) Explain control flow based testing.
   b) Explain internal documentation.
   c) With suitable diagram explain test oracles. (5 + 4 + 6)

10. a) Explain equivalence class partitioning.
    b) Write a note on – top down and bottom-up approach in coding.
    c) Explain static analysis and its uses. (4 + 5 + 6)

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COA 404 Reg.No. .....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018

B.C.A

COMPUTER NETWORKS

Time: 3 Hrs Max. Marks: 120

PART – A

1. Answer any 15 questions from the following: 15x2=30
   a. Define Computer Network.
   b. State the difference between connectionless and connection oriented communication.
   c. Write any two advantages of dividing the network into 7 layers.
   d. Which are the layers of OSI model that handles error notification and establishing sessions?
   e. What is a datagram?
   f. Expand SMTP and FTP.
   g. What is MAC address?
   h. Differentiate between broadcast and point to point technology.
   i. What is DOD model?
   j. What do you mean by peer layer communication?
   k. List any two advantages of optical fiber cables.
   l. What is the basic function of a Transport layer in the OSI reference model?
   m. Describe attenuation and delay distortion.
   n. What do you mean by sliding window?
   o. Define Internet.
   p. What are the two parts of the frame header called?
   q. What is the purpose of ICMP testing?
   r. Why IP addresses are written in dotted decimal notation?

PART – B

Answer any TWO full Questions from each unit:

UNIT – I

2. a. Explain TCI/IP reference model.
   b. Write the advantages and disadvantages of WAN. (10+5)

3. a. Explain LAN and MAN with neat diagrams.
   b. Write a note on wireless networks. (10+5)

4. a. Describe the process of acknowledgement in transport layer and identify acknowledgement techniques and their purposes.
   b. Write a note on ARPANET and NSFNET. (7+8)

UNIT – II

5. a. With a neat diagram explain star and mesh topology. List the advantages and disadvantages of both.
   b. Explain unshielded twisted pair cable. (8+7)

6. a. Explain the following:
   i) Bridges ii) Routers iii) Switches
   b. Explain CSMA/CD (9+6)

7. a. What is NIC? Define and describe the purpose of NIC.
   b. Explain the operation of Ethernet 802.3 and its broadcasting.
   c. What is a concentrator? (5+7+3)

UNIT – III

8. a. Explain RARP request and RARP reply frames.
   b. What is default gateway?
   c. Describe UDP segment format. (8++3+4)

9. a. What is subnet masking? Explain ANDing operation with example.
   b. With a neat diagram explain the format of an IP datagram. (8+7)

10. a. Write a note on Binary IP addressing.
    b. What is a reserved IP address?
    c. Mention and explain the classes of IP address. (4+3+8)

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COA 401 Reg. No.....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
JAVA PROGRAMMING

Duration: 3 Hrs. **Max. Marks: 100**

PART – A

1. **Answer any ELEVEN questions from the following:** 11×2=22

   a) List any two differences between Java and C++.

   b) Define the scope and lifetime of a variable.

   c) List out any four tools in JDK.

   d) What is type casting? Give an example.

   e) Mention any four exceptions of Java.

   f) What are wrapper classes?

   g) List the differences between array and vector.

   h) What is method overriding?

   i) List any two features of an applet.

   j) What is a constructor? Give an example.

   k) Name any two Java enabled browsers.

   l) What are final classes?

   m) Write any two benefits of packages.

PART – B

Answer any TWO questions from each unit:

UNIT – I

2. a) Explain the structure of Java Program.

   b) List and explain the data types of Java.

   c) Explain the do.. while loop with syntax and example. (4 + 5 + 4)

3. a) Explain any five features of Java.

   b) Explain the switch statement with syntax and example.

   c) What is JVM? Explain its role in making Java as a Machine neutral language. (5 + 4 + 4)

4. a) Explain the arithmetic, relational and logical operators of Java.

   b) Explain the classification of Java statements.

   c) What are Java tokens? Explain them in brief. (5 + 5 + 3)

UNIT – II

5. a) What is inheritance? Explain the different types of inheritance.
   b) What is a package? How to create a package? Explain with an example.
   c) Write a note on Java API packages. (5 + 5 + 3)

6. a) Describe the various forms of implementing interfaces. Give an example.
   b) Explain the different wrapper classes to convert primitive number to object numbers.
   c) Explain the various methods used in vector class. (5 + 3 + 5)

7. a) Write a note on visibility modifiers of Java.
   b) Explain the following:
      i) Static members ii) Abstract class iii) Finalizer method
   c) Explain the use of 'super' keyword with example. (3 + 6 + 4)

UNIT – III

8. a) What is an exception? Explain the exception handling mechanism.
   b) With a neat diagram, explain the life cycle of an applet. (5 + 8)

9. a) Explain the purpose of synchronization.
   b) How does an applet differ from a stand-alone program?
   c) Write a note on Applet tag. (4 + 5 + 4)

10. a) Explain the process of creating a thread by implementing the Runnable interface. Give suitable example.
    b) Write a note on i) Thread exceptions ii) Passing parameters to applets (6 + 7)

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COA 401(R) Reg. No.....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
JAVA PROGRAMMING

Duration: 3 Hrs. **Max. Marks: 120**

PART – A

1. **Answer any FIFTEEN questions from the following:** 15×2=30

a) List any two differences between Java and C++.

b) Define the scope and lifetime of a variable.

c) List out any four tools in JDK.

d) Define class. How do you create object?

e) What is type casting? Give an example.

f) What are command line arguments?

g) Mention any four exceptions of Java.

h) What are wrapper classes?

i) List the differences between array and vector.

j) What is method overriding?

k) List any two features of an applet.

l) How to set the priorities for thread?

m) What is a constructor? Give an example.

n) What are multiple catch blocks? Give an example.

o) Name any two Java enabled browsers.

p) What are final classes?

q) Write any two benefits of packages.

r) Differentiate between local and remote applet.

PART – B

Answer any TWO questions from each unit:

UNIT – I

2. a) Explain the structure of Java Program.

b) List and explain the data types of Java.

c) Explain the do.. while loop with syntax and example. (5 + 5 + 5)

3. a) Explain any five features of Java.

b) Explain the switch statement with syntax and example.

c) What is JVM? Explain its role in making Java as a Machine neutral language. (5 + 5 + 5)

4. a) Explain the arithmetic, relational and logical operators of Java.

b) Explain the classification of Java statements.

c) What are Java tokens? Explain them in brief. (5 + 5 + 5)

UNIT – II

5. a) What is inheritance? Explain the different types of inheritance.

b) What is a package? How to create a package? Explain with an example.

c) Write a note on Java API packages. (6 + 5 + 4)

6. a) Describe the various forms of implementing interfaces. Give an example.

b) Explain the different wrapper classes to convert primitive number to object numbers.

c) Explain the various methods used in vector class. (5 + 5 + 5)

7. a) Write a note on visibility modifiers of Java.

b) Explain the following:

i) Static members ii) Abstract class iii) Finalizer method

c) Explain the use of 'super' keyword with example. (6 + 6 + 4)

UNIT – III

8. a) What is an exception? Explain the exception handling mechanism.

b) With a neat diagram, explain the life cycle of an applet. (7 + 8)

9. a) Explain the purpose of synchronization.

b) How does an applet differ from a stand-alone program?

c) Write a note on Applet tag. (6 + 5 + 4)

10. a) Explain the process of creating a thread by implementing the Runnable interface. Give suitable example.

b) Write a note on i) Thread exceptions ii) Passing parameters to applets (7 + 8)

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STA 402.1 Reg. No. .....

CREDIT BASED FOURTH SEMESTER B.C.A. DEGREE EXAMINATION

APRIL 2018

STATISTICS-II

PROBABILITY

Time: 3 Hrs **Max. Marks: 80**

Note: Normal Distribution Tables will be provided on request.

PART - A

Answer any TEN of the following: **2X10=20**

1. a) Define sample space and give an example.

b) If $P(A) = 0.8, P(B) = 0.5, P(AUB) = 0.9$. *Find* $P(A/B)$. Are A and B independent?

c) Two dice are rolled once. What is the probability that (i) product of points is 15 (ii) sum is 8

d) What is the probability of drawing an ace or a spade from a well shuffled pack of 52 cards.

e) A throws a fair die once. If the number obtained is even, he gets Rs 10. otherwise he loses Rs 5 Find his expectation.

f) S.D (X)= 15, $E(X^2)$ =200 find E(X), E (4X+3)

g) For a random variable X, V(X) =4, find V (2X+4) and V(-3X)

h) Mention any two properties of discrete probability distribution.

i) Mention any two properties of Bernoulli variate.

j) The mean and variance of Binomial distribution are 4 and 4/3 respectively. Find P ($X \geq 1$)

k) If a random variable X follows a Poisson distribution such that P (X=1) = P(X=2) Find P(X=0).

l) Write down the probability density function of a normal variate with mean 8 and variance 4. Also give one example for normal variate.

PART – B

Answer any TWO of the following: **2x10=20**

2. a) A bag contains 7 red and 8 black marbles. Two marbles are randomly drawn. What is the probability that they are of (i) Same Colour (ii) Different Colour

b) Two cards are drawn from a pack of playing cards. Find the probability that the cards drawn are i) both Queens ii) both hearts iii) either both clubs or both spades iv) one diamond and one heart. (4+6)

3. a) There are 8 PU students, 12 UG students and 5 PG students in a training camp. What is the probability of selecting a team of 4 leaders one from PU, one from UG and 2 from PG.

b) A can hit a target 2 times with 6 shots B can hit 3 times with 4 shots and C can hit 2 times with 3 shots. If each of them shoot once at the target, what is the probability that (i) all of them hit (ii) atleast one of them hits? (5+5)

4. a) A bag contains 5 tennis and 4 cricket balls. Another bag contains 4 tennis and 6 cricket balls. A ball is drawn from the first bag and is placed in the second. Then a ball is drawn from the second bag. What is the probability that it is a tennis ball?

b) A purse contains 2 silver coins and 4 copper coins. Another purse contains 3 silver and 5 copper coins. If a coin is selected at random from one of the two purses; what is the probability that it is a silver coin. (5+5)

Answer any TWO of the following: **2x10=20**

5. a) From the following data find V(X) and E (-3x+2)

x	8	12	16	20	24
P(x)	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{12}$

b) A bag has 6 white and 4 blue marbles. Two marbles are drawn at random from the bag. Find expected number of blue marbles that can be drawn. **(5+5)**

6. a) A purse has 5 one rupee coins, 5 two rupee coins and 10 ten rupee coins. A coin is randomly drawn from the purse. Find the expectation of the amount drawn.

b) From the following probability distribution, find the value of K and hence calculate V(X)

x	-3	-2	0	2	3
P(x)	$\frac{K}{6}$	$\frac{K}{2}$	$\frac{2K}{3}$	$\frac{K}{2}$	$\frac{K}{6}$

(6+4)

7. For the following bivariate probability distribution find k and hence obtain its correlation coefficient r_{xy}.

(10)

x \ y	2	4	6
1	0.2	0.05	0.05
2	0.1	0.1	0.05
3	0.1	0.15	0.2

Answer any TWO of the following: **2x10=20**

8. a) Probability of A wining a single game against B is $^2/_3$ Find the probability that in a series of 5 games with B, A wins i) exactly 3 games ii) atleast 3 games iii) atmost 3 games.

b) Certain automatic screw manufacturing machine produces one slotless screw among every 100 screws. If the screws are packed in boxes of 300, what percentage of these boxes would you expect to have. i) no slotless screws ii) alleast one slotless screws iii) atmost 2 slotless screws. **(5+5)**

9. a) A skilled typist on routine work, kept a record of mistakes made per day during 300 working days. Fit a Poisson distribution to the data. **(10)**

Mistakes per page	0	1	2	3	4	5	6
No. of pages	143	90	42	12	9	3	1

10. a) The mean I.Q of a large group of children of age 14 was 100 and the standard deviation was 16. Find i) What percentage of children had I.Q under 80? ii) What proportion of children had I.Q above 110?

b) During rainy season on a tropical island, the length of the shower has an exponential distribution with parameter $\lambda = 2$, time being measured in minutes. Find the probability that a shower will last i) for more than 3 minutes. ii) between 2 and 6 minutes.

(5+5)

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COA 605 Reg. No.....

CREDIT BASED SIXTH SEMESTER B.C.A. DEGREE EXAMINATION APRIL 2018
COMPUTER APPLICATIONS
COMPUTER GRAPHICS AND MULTIMEDIA

Duration: 3 Hrs. **Max. Marks: 100**

PART – A

1. **Answer any ELEVEN questions from the following:** 11×2=22
   a) What is scan conversion?
   b) What is a refresh buffer?
   c) Write 8 way symmetry of the circle.
   d) Write the matrix for shear transformation along x-direction.
   e) Write the diagram of clip window along with region out codes.
   f) What is affine transformation?
   g) Expand PHIGS and DVST.
   h) Write the matrix for 3D translation.
   i) Define the following terms – frequency and Amplitude.
   j) List the advantages of digital CD – DA technology.
   k) What is entropy coding?
   l) Define the term sampling rate.
   m) Expand CD – WO and WORM.

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a) Explain the architecture of Vector display with a neat diagram.
   b) Derive midpoint line algorithm to draw a straight line. (5 + 8)

3. a) Derive and write midpoint circle algorithm.
   b) Write a note on software portability and graphics standards. (7 + 6)

4. a) Discuss different methods of drawing thick primitives.
   b) Write DDA algorithm for generating a straight line.
   c) Write a note on pattern filling. (5 + 5 + 3)

UNIT – II

5. a) Derive and explain rotation of an object about an arbitrary point P at (x1, y1) by an angle θ.
   b) Prove that successive rotations are additive.
   c) Write a note on homogeneous transformation. (5 + 5 + 3)

6. a) Explain window to viewport transformation.

b) Write cohen-sutherland line clipping algorithm. (5 + 8)

7. a) Explain composition of 3D transformation with respect to rotation.

b) Explain Sutherland – Hodgman polygon clipping algorithm.

c) Prove that successive translations are additive. (5 + 5 + 3)

UNIT – III

8. a) Discuss various criteria for classification of media.

b) Explain various components of a MIDI synthesizer.

c) Discuss various image formats. (5 + 5 + 3)

9. a) Explain different steps of image compression.

b) Explain main properties of a multimedia system.

c) Explain basic technology of optical storage media with a suitable diagram. (5 + 4 + 4)

10. a) Write the steps of JPEG compression with a diagram.

b) Explain dynamics in graphics.

c) Write a note on CD – MO. (5 + 4 + 4)

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