COA 101.1 Reg. No. .....

CREDIT BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION
OCTOBER 2017
B.C.A
FUNDAMENTALS OF COMPUTERS

Time: 3 Hrs. Max. Marks: 80

PART – A

1. **Answer any TEN questions from the following:** 10×2=20
   a. Write the basic components of a computer system.
   b. Define secondary storage device. Give an example.
   c. What are Registers?
   d. What is a Micro computer?
   e. Differentiate between Hard Copy and Soft Copy.
   f. Define Resolution.
   g. What is an operating system?
   h. What is the use of on screen keyboard?
   i. Differentiate between RAM and ROM.
   j. What do you mean by Gadgets in Windows 7.
   k. Define Browser. Give examples.
   l. What is an Algorithm?

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a. Explain the applications of a computer.
   b. Explain the various units used to measure computer memory. (5+5)

3. a. Explain the various units of a system bus.
   b. Write a note on super computer. (5+5)

4. a. Explain the characteristics of a computer.
   b. Write a note on cache memory. (6+4)

UNIT – II

5. a. Explain the working principle of keyboard.
   b. Write a note on Blu-Ray Disk. (5+5)

6. a. Differentiate between LCD and CRT.
   b. Write a note on scanner. (5+5)

7. a. Explain the storage organization in Magnetic Disk.
   b. How does Laser Printer work? Explain. (5+5)

UNIT – III

8. a. Explain the features of Windows XP.
   b. Explain any two applications of internet. (5+5)

9. a. Explain the phases of program Development Cycle.
   b. Define compiler and interpreter. (6+4)

10. a. Explain the various symbols used in flowchart with its meaning.
    b. Explain any two types of application software. (5+5)

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MAT 102.1 Reg. No. .....

CREDIT BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017

MATHEMATICS

PAPER I: FUNDAMENTALS OF MATHEMATICS I

Duration: 3 hours **Max Marks: 80**

Note: 1. Answer any SIX questions in Part A. Each question carries 2 marks.
2. Answer FOUR full questions from Part B choosing ONE full question from each unit.

PART A **2x6=12**

1. a) Resolve $\frac{8-x}{2x^2+3x-2}$ into partial fractions.

b) Find the inverse of $\begin{bmatrix} -6 & 5 \\ -7 & 6 \end{bmatrix}$

c) Convert angle into degrees $\frac{7\pi^c}{12}$

d) Prove that $\frac{\sin\theta}{\cos ec\theta}+\frac{\cos\theta}{\sec\theta}=1$

e) Find the value of x for which the points $(x,-1)$ $(2,1)$ and $(4,5)$ lie on a line.

f) Find an equation of the straight line with slope $\frac{-2}{3}$ and y intercept 5.

g) Show that the points $(3,-4)$ $(-7,6)$ and $(-2,1)$ are collinear.

h) For the ellipse $\frac{x^2}{25}+\frac{y^2}{9}=1$ find the length of the Latus rectum.

PART - B

UNIT-I

2. a) Resolve into partial fractions $\frac{x^2-10x+13}{(x-1)(x^2-5x+6)}$. **(6)**

b) Solve using Cramer's rule

$x+y+z=7$

$2x+3y+2z=17$

$4x+9y+z=37$ **(6)**

c) Show that $\left(2+\sqrt{3}\right)^5+\left(2-\sqrt{3}\right)^5=724$ **(5)**

3. a) Resolve into partial fractions $\frac{x+3}{x^3-x}$. **(5)**

b) Solve the simultaneous equations by matrix method:

$x+y-2z=0$

$2x-y+z=2$

$x+2y-z=2$ **(6)**

c) Find the middle terms in the expansion of $\left(\sqrt{x}-\frac{4}{x^2}\right)^{11}$ **(6)**

UNIT-II

4. a) Prove that $\frac{\tan\theta}{\sec\theta-1}-\frac{\sin\theta}{1+\cos\theta}=2\cot\theta$ **(6)**

b) Prove that $\frac{\sin(\pi-\theta)\cos(2\pi-\theta)\cot\left(\frac{\pi}{2}-\theta\right)}{\tan\left(\frac{\pi}{2}+\theta\right)\cot\left(\frac{3\pi}{2}+\theta\right)\sin(-\theta)}=-\sin\theta$ **(5)**

c) If $\sec\alpha=\frac{13}{5}$, α is acute, then find $\frac{2\sin\alpha-3\cos\alpha}{4\sin\alpha-9\cos\alpha}$ **(6)**

5. a) Prove that $\sqrt{\frac{1+\cos A}{1-\cos A}}=\operatorname{cosec}A+\cot A$ **(6)**

b) Prove that $\cos 570^\circ \sin 510^\circ-\sin 330^\circ \cos(-390^\circ)=0$ **(5)**

c) If $\cot\theta=-\frac{60}{11}$, $\frac{3\pi}{2}<\theta<2\pi$ find the value of $\frac{2\sin\theta+\cos\theta}{\operatorname{cosec}\theta-\cot\theta}$ **(6)**

UNIT-III

6. a) Find the co-ordinates of the circum centre of Δ ABC where $A\equiv(-2,0)$ $B\equiv(5,-1)$ $C\equiv(2,8)$ **(6)**

b) Find the area of the quadrilateral ABCD where A(1, 1), B(3, 4), C(5, −2) and D(4, −7) **(6)**

c) Find the angles of the triangle ABC where $A\equiv(-4,2)$ $(12,-2)$ $C\equiv(8,6)$ **(5)**

7. a) Show that $A(4,1)$ $B(7,4)$ and $C(13,-2)$ are the vertices of a right angled triangle. Find its area. **(6)**

b) Find the co-ordinates of the point which divides the line joining the points (4, 7) and (1, −2) externally in the ratio 5 : 2. **(5)**

c) Find an equation of the straight line passing through (2, 4) and perpendicular to the line $5x-7y=100$ **(6)**

UNIT-IV

8. a) Find the equation of the perpendicular bisector of AB where $A\equiv(-4,6)$ and $B(8,8)$ **(6)**

b) Find the centre and radius of the circle $3x^2+3y^2-6x+9y+5=0$. Also find its area. **(6)**

c) Find the focus, directrix, vertex, axis and length of latus rectum of $y^2-8x=0$ **(5)**

9. a) Find the equation of the locus of a point P such that $PA^2+PB^2=8$ where $A=(2,0)$ and B(0,3). **(6)**

b) Find the equation of the circle centred at (-4, 5) and passing through the point (−3, 1). Also find its area. **(6)**

c) Find the vertices, foci, equations of directrices, lengths of major and minor axis and eccentricity of $\frac{x^2}{49}+\frac{y^2}{36}=1$. **(5)**

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COA 102 Reg. No. .....

CREDIT BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION
OCTOBER 2017
B.C.A
BASIC CONCEPTS OF PROGRAMMING IN 'C'

Time: 3 Hrs. Max. Marks: 80

PART – A

1. **Answer any TEN questions from the following:** 10×2=20
   a. Define constant. List its various types.
   b. Give any two rules for defining variable names.
   c. If $x = 3, y = 5$, find the values of m and n.
      i) $m = ++x + y;$
      ii) $n = y++ - 2;$
   d. What is the purpose of getchar( ) and putchar( ) functions?
   e. Considering a = 5, b = 2, what is the output of fmod (a, b) and pow (a, b)?
   f. What is the purpose of strcmp( ) function?
   g. Re-write the following if...else statement using conditional operator.

```
if (bond > 0)
   weight = 1;
else
   weight = 0;
```

   h. Write any two differences between arrays and structures.
   i. What is a function? What is the default return type of a function?
   j. Differentiate between local and global variables.
   k. How does a union differ from a structure?
   l. What is the role of C preprocessor?

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a. Explain the structure of C program.
   b. Explain the basic data types in C. (5+5)

3. a. With suitable examples, explain various relational operators used in C.
   b. Explain formatted input function with syntax and example.
   c) Write a note on enumerated data-types. (4+3+3)

4. a. Differentiate between
      i) single character constant and string constant
      ii) floor ( ) and ceil ( ) functions
   b. With a suitable example, explain various arithmetic operators.

c) Explain how automatic type conversion is used to evaluate the expression $x = \frac{l}{i} + i * f - d$ where l is long int, i is an integer, f is float, d is double and x is an integer. (3+4+3)

UNIT – II

5. a. Explain if.... Else and Nesting of if.... Else statements with syntax and examples.
   b. Why do we need 1-dimentional arrays in C? With an example, explain how to declare and initialize them. (5+5)

6. a. Differentiate between while and do... while loops.
   b. Write a program to generate 'n' fibonacci numbers. (6+4)

7. a. Explain switch statement with syntax and example.
   b. Write a program to find the sum of two matrices. (5+5)

UNIT – III

8. a. How do we declare and initialize string variables? Explain.
   b. Explain how stracat( ) is different from strcpy( ).
   c. Write the syntax of user defined function. Give an example. (4+3+3)

9. a. Describe the various categories of functions.
   b. Explain automatic and static storage classes. (6+4)

10. a. With syntax and an example, explain how structure can be defined and structure variables can be declared?
    b. Write a note on macros. (5+5)

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COA 301.1 Reg. No.....

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
OBJECT ORIENTED PROGRAMMING CONCEPTS AND PROGRAMMING USING C++

Duration: 3 Hrs. Max. Marks: 100

PART – A

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

a) What is a constructor? Give an example.

b) Write the use of scope resolution operator.

c) Why do we need methods in an object model?

d) What are manipulator functions? Give an example.

e) What is meant by function overloading?

f) Define inheritance.

g) What is a friend function? When is it required?

h) What is function prototyping? Give an example.

i) List any two rules for overloading operators.

j) List the special characteristics of a static data member.

k) Define virtual function.

l) What are inline functions?

m) What is an attribute? List any two attributes of a car object.

PART – B

Answer any two full questions from each unit:

UNIT – I

2. a) With syntax and example, explain the input and output statements used in C++.
b) Write a note on polymorphism.
c) Explain why object orientation is needed. **[6 + 3 + 4]**

3. a) Explain any 5 characteristics of object oriented programming.
b) Explain, how object oriented approach differs from traditional top-down approach.
c) Write a note on unified approach. **[5 + 5 + 3]**

4. a) Explain the syntax and usage of any 5 manipulator functions in C++.
b) Write a note on use-case approach.
c) What are the orthogonal views of software? **[5 + 4 + 4]**

UNIT – II

5. a) What is a class? Explain with syntax and example, how a class is declared in C++.
b) Explain how memory allocation is done for objects.
c) When do you need default arguments in a function? Explain with an example. **[4 + 5 + 4]**

6. a) Write a program using function overloading to calculate the volume of cube and cylinder.
   b) Write a note on friend function.
   c) What is call by reference? Explain with a programming example. [5 + 4 + 4]

7. a) With an example, explain how we can create an array of objects.
   b) How can we pass objects as function arguments? Explain. [7 + 6]

UNIT – III

8. a) What is operator overloading? Explain the overloading of unary operator with an example.
   b) Explain single inheritance and multiple inheritance with a programming example. [5 +8]

9. a) Write a note on 'this" pointer.
   b) Explain the role of public, private and protected keywords with respect to inheritance.
   c) List any 5 characteristics of a constructor. [4 + 4 + 5]

10. a) Explain the concept of conversion between class to basic type with an example.
    b) Write a note on copy constructor.
    c) What are virtual functions? Explain with an example. [5 + 4 + 4]

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COA 302 Reg. No. .....

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION
OCTOBER 2017
B.C.A
INTERNET PROGRAMMING

Time: 3 Hrs. Max. Marks: 100

PART – A

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

a. What is HTTP? Why is it used?
b. What is a web browser? Give two examples.
c. List and mention the purpose of any two attributes of <HR> tag.
d. What is a form? Write the purpose of ACTION attribute of form.
e. Write the syntax of FRAME tag.
f. List any two methods of date object in java script.
g. Mention the purpose of
   i) hostname in location object
   ii) write in document object
h. Mention any two mathematical functions used in java script.
i. What is an array? How do you define an array in java script?
j. List the three types of variables in java script.
k. What is the purpose of LEFT( ) and MID( ) string functions in VB script?
l. List any two arithmetic operators in VB script and give examples for each.
m. Mention the purpose of MsgBox function in VB script.

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a. Explain any five text formatting tags.
b. How do you create lists in HTML? Explain with examples for each.
c. What is the use of <MARQUEE> tag? Explain. **(5+6+2)**

3. a. Explain the following terms
   i) object ii) method iii) event
b. Explain any five properties of document object in java script.
c. Explain the while loop in java script with an example. **(5+4+4)**

4. a. What are event handlers in java script? Explain any two.
b. With suitable example explain the if statement in java script.
c. What are local and global variables? Explain with examples. **(6+5+2)**

UNIT – II

5. a. Explain the working of do while and do until loops in VB script with syntax and examples.
   b. Explain any four string functions in VB script with syntax and examples.
   c. Write a VB script program to display whether the entered number in a text box is positive, negative or zero on clicking a command button. **(6+4+3)**

6. a. With syntax and example explain any four date functions in VB script.
   b. Explain the logical and relational operators in VB script.
   c. How do you define a function in VB script? Explain with an example. **(4+4+5)**

7. a. Explain the following VB script functions.
      i) isArray( ) ii) VarType iii) Isnumeric
   b. With syntax and example explain select statement in VB script.
   c. What are the different data types available in VB script? Explain. **(6+3+4)**

UNIT – III

8. a. What are style sheets? Explain three ways of creating styles.
   b. Explain various style properties associated with background.
   c. Explain the XML structure with an example. **(5+4+4)**

9. a. What is the difference between XML schema and DTD?
   b. What are the different ways to load XML documents? Explain.
   c. What do you mean by valid and well formed XML document? Explain. **(4+4+5)**

10. a. With a suitable example, explain how to view XML document using HTML tables?
    b. Explain the following properties of style sheets.
       i) color ii) border style iii) font family iv) background-repeat
    c. What is DTD? Explain with an example. **(4+4+5)**

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COA 304.1 Reg. No.....

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
DIGITAL ELECTRONICS

Duration: 3 Hrs. Max. Marks: 120

PART – A

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

a) Find 1's and 2's complement of $(11011)_2$.

b) Write BCD and Excess-3 code of $(512)_{10}$.

c) Perform $(110011)_2 + (110111)_2$.

d) Differentiate between canonical and standard form.

e) Define principle of duality. Write the dual of $\bar{x}y + xz + y\bar{z} = 1$.

f) $(315.25)_8 = (?)_2$.

g) Write the general structure of 3 and 4 variable K-map.

h) Write the truth table of half adder and half subtractor.

i) Write a table to show minterms for three binary variables x, y and z.

j) Define BCD adder.

k) What is multiplexer?

l) Prove that $x + xy = x$.

m) Differentiate between characteristic table and excitation table.

n) Draw SR latch circuit using NAND gates.

o) Define a flip-flop.

p) Write the excitation table of JK and T flip-flops.

q) Write the logic circuit of T flip-flop.

r) Find the complement of $F = x\bar{y} + \bar{y}z + xz$.

PART – B

Answer any two full questions from each unit:

UNIT – I

2. a) State and prove DeMorgan's theorem.
b) Write a note on error detection code.
c) Simplify the following expression using the rules of Boolean Algebra and write the logic circuit for the simplified expression.
$A\bar{B}C + AB\bar{C} + \bar{A}BC + ABC + \bar{A}B\bar{C} + \bar{A}\bar{B}\bar{C}$ **[5 + 5 + 5]**

3. a) Perform the following:
i) $(175.75)_{10} = (?)_2$ ii) $(BCA)_{16} = (?)_8$
iii) $(10101.11)_2 = (?)_{10}$
b) Prove that NAND is universal gate.
c) Write a note on alphanumeric codes. **[6 + 5 + 4]**

4. a) Perform the following subtractions using 1's & 2's complement method.
   i) 11001 – 11011 ii) 10101 – 1010
   b) Express the following function in sum of minterms and product of maxterms
   $F(x, y, z) = \bar{x}y + y\bar{z}$
   c) Explain NAND and NOR gates with truth table and logic diagram. **[6 + 5 + 4]**

UNIT – II

5. a) Define adder. Explain full adder along with its circuit diagram and table.
   b) Implement the following expression.
   $F = A\bar{B} + AB\bar{C} + AC$
   i) Using logic gates
   ii) Using only NAND gates
   c) Explain binary parallel adder along with suitable diagram. **[5 + 5 + 5]**

6. a) Using K-map, simplify the following expression:
   $F(w, x, y, z) \sum(0,1,2,4,6,7,8,9,10,12,14)$
   b) Explain the working of 3 to 8 line decoder.
   c) Explain 2 bit magnitude comparator. **[5 + 5 + 5]**

7. a) Design code converter to convert excess-3 to BCD code.
   b) Explain the working of decimal adder along with block diagram. **[8 + 7]**

UNIT – III

8. a) Explain the working of 4 to 1 line MUX.
   b) Explain the working of JK flip-flop along with its logic diagram, truth table, graphic symbol and characteristic equation. **[7 +8]**

9. a) Design mod 7 counter using T-flip-flop.
   b) What is a register? Explain 4 bit register along with suitable diagram. **[8 + 7]**

10. a) Explain the working of a 1 to 4 line demultiplexer.
   b) Explain the working of 4 bit shift register along with a neat diagram. **[8 + 7]**

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COA 303.1 Reg. No...1151599.....

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
SOFTWARE ENGINEERING

Duration: 3 Hrs. Max. Marks: 120

PART – A

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

a) Give the IEEE definition for software.

b) Differentiate between "Corrective maintenance" and "Adaptive maintenance".

c) Mention the different software quality attributes.

d) How does prototyping overcomes the drawback of waterfall model?

e) Mention the different phases of project management process.

f) What do you mean by software metrics? Which are the two types of it?

g) Which are the two basic approaches to testing?

h) Mention the components of SRS.

i) Mention the seven levels of cohesion.

j) Write the DFD for transaction analysis.

k) Differentiate between validation and verification.

l) What is consistency checker?

m) What do you mean by Information Hiding?

n) What is comment? What is the purpose of it?

o) Define the terms 'Fault' and 'Failure'.

p) Which are the two basic approaches to testing?

q) What is equivalence class? Give example?

r) What is Data Flow based Testing?

PART – B

Answer any two full questions from each unit:

UNIT – I

2. a) Explain the first two phases of the phased development process.
b) Write a short note on CMM.
c) What are the limitations of water fall model? **[6 + 5 + 4]**

3. a) Explain iterative development process model with example.
b) Write a note on inspection process.
c) 'Scaling' is one of the challenges of Software Engineering Justify. **[6 + 5 + 4]**

4. a) Explain any three characteristics of Software Process.
b) Write a note on Prototyping.
c) What is the mechanism involved in software configuration management process? **[6 + 5 + 4]**

UNIT – II

5. a) What are the needs for SRS?
   b) Write a short note on logic/algorithm design.
   c) What is PDL? Explain.

[6 + 5 + 4]

6. a) Explain the three basic tasks involved in requirement process.
   b) Explain Data Flow Diagram with the help of an example.
   c) List the three verification methods.

6+3+6
[5 + 4 + 4]
Please check

7. a) Explain any six characteristics of a SRS.
   b) Write a short note on structure chart.
   c) Compare and contrast coupling and cohesion.

[6 + 5 + 4]

UNIT – III

8. a) Explain the different coding errors.
   b) What is psychology of testing? Explain.
   c) Explain cause-effect graphing with the help of an example

[6+5+4]

9. a) Write a note on Unit Testing.
   b) What do you mean by Boundary value analysis? Explain.
   c) Explain any one of the verification methods of coding.

[6+5+4]

10. a) What is the significance of Symbolic Execution? Explain.
    b) Write a short note on Test Oracle.
    c) Explain the concept of structured programming.

[6 + 5 + 4]

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COA 303.2 Reg. No.....

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
OPERATING SYSTEMS

Duration: 3 Hrs. Max. Marks: 120

PART – A

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

a) Define operating system.
b) What is multiprogramming system?
c) Differentiate between cooperating process and independent process.
d) Define spooling. Mention its benefits.
e) What do you mean by context switch?
f) Define throughput and turnaround time.
g) What is a deadlock state?
h) Differentiate between preemptive and non-preemptive scheduling.
i) What are the requirements for solutions to critical section problem?
j) Define user thread and kernel thread.
k) What is dispatch latency?
l) What do you mean by logical address?
m) Write the disadvantages of priority scheduling.
n) Differentiate between text file and executable file.
o) What is thrashing?
p) Mention any four attributes of a file.
q) What is internal and external fragmentation?
r) What is segmentation?

PART – B

Answer any two full questions from each unit:

UNIT – I

2. a) Explain real time system.
b) Mention and explain different operating system services.
c) Explain different multithreading models. **[6 + 5 + 4]**

3. a) Write a note on multi-programmed system.
b) Expand PCB. Mention and explain any four fields of PCB.
c) With the help of state diagram explain various states f a process. **[5 + 5 + 5]**

4. a) Explain any four components of operating system.
b) Define thread. Explain the benefits of multithreading. **[8 + 7]**

UNIT – II

5. a) Explain priority scheduling with the help of an example.
   b) What is CPU scheduling? Write a note on different types of schedulers. [10 + 5]

6. a) Explain the methods for handling deadlock.
   b) Write Peterson's solution for critical section problem.
   c) What are the operations of Semaphore? Write the usage of different types of semaphores. [5 + 5 + 5]

7. a) What are the necessary conditions for deadlock situation to occur? Explain.
   b) Consider the following set of process with the length of CPU burst time given in milliseconds.

Process	Burst Time
P_1	10
P_2	1
P_3	2
P_4	1
P_5	5

Draw the Gantt chart using Round Robin scheduling with time quantum of 3 milliseconds and find the average waiting time.
   c) Explain Resource Allocation graph with an example. [5 + 5 + 5]

UNIT – III

8. a) What is demand paging? Explain.
   b) Explain the directory structure with the help of a diagram.
   c) Explain swapping with a neat diagram. [5 + 5 +5]

9. a) Consider the following page reference string
   7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1. How many page faults would occur for the FIFO page replacement algorithm? Assume three frames per page.
   b) Write a note on file access methods.
   c) Explain first fit, best fit and worst fit storage allocation. [5 + 5 + 5]

10. a) Explain LRU page replacement algorithm with an example.
    b) Explain any two file allocation methods. [9 + 6]

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COA 501.1 Reg. No. .....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION
OCTOBER 2017
B.C.A
ADVANCED JAVA

Time: 3 Hrs. Max. Marks: 100

PART – A

1. **Answer any ELEVEN questions from the following:** 11×2=22
   a. Write the three logical layers of Enterprise Architecture.
   b. Name any four J2EE components.
   c. List the Remote object Protocols.
   d. What is EJB?
   e. Write any two differences between statement object and prepared statement objects?
   f. What is JDBC-ODBC Bridge?
   g. Write any two methods of PreparedStatement.
   h. Write any two differences between cookies and sessions.
   i. How do you move the cursor position to the next record ResultSet?
   j. Which are the three types of JDBC Statement objects?
   k. How do you create a new cookie?
   l. Write any two benefits of using a Java Servlet over CGI.
   m. What is the use of getParameterValues( ) method?

PART – B

Answer any TWO full questions from each unit:

UNIT – I

2. a. Explain n-tier architecture with a neat diagram.
   b. What are the needs for enterprise programming? (7+6)

3. a. Write a note on communication technologies.
   b. Explain the three types of Java Beans. (7+6)

4. a. With a neat diagram, explain the architecture of J2EE.
   b. Explain any three advantages of J2EE. (7+6)

UNIT – II

5. a. Explain the ODBC architecture with a neat diagram.
   b. Write the features of JDBC. (7+6)

6. a. Explain Type-3 JDBC driver. Write any two advantages and disadvantages of it.
   b. Describe any three interfaces of JDBC with example. (7+6)

7. a. Write any three methods of statement object and explain with example for each.
   b. How do you read the content of a table using JDBC? Explain with the help of an example. (7+6)

UNIT – III

8. a. Explain the life cycle of a JSP.
   b. Write a servlet program using session to count the number of hits on a web page (7+6)

9. a. How does HTTPRequestHeader and HTTPResponseHeader functions?
   b. Explain the different JSP scripting tags with example. (7+6)

10. a. Write a note on Deployment Descriptor.
    b. Explain the different methods involved in servlet life cycle. (7+6)

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COA 503.1 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
MICROPROCESSOR PROGRAMMING

Duration: 3 Hrs. Max. Marks: 100

PART – A

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

a) List the different buses found in microprocessor based computers.

b) The logical and physical size of memory segment is _____bytes and _____ bytes.

c) What is "little endian" and "big endian" method of storing data in memory?

d) Give the name of the addressing mode for the instruction

i) MOV [BP], CX ii) MOV AX, BX

e) After executing the following instructions, what is the status of CF and PF?

MOV AL, EFH
ADD AL, 29H

f) If AL = OE2H and CL = O1H, What is the content of AL and CF after executing ROR AL, CL

g) What is the purpose of CLD and STD instructions in 8086?

h) Name the control flags of 8086 microprocessor.

i) Differentiate between SUB and SBB instructions.

j) Expand AAD and AAM

k) Mention the instructions used to control the contents of the carry flag?

l) List any two features of 4004 microprocessor.

m) What is intersegment and intrasegment jump?

n) List the various segment registers of 8086.

PART – B

Answer any two questions from each unit:

UNIT – I

2. a) With a suitable block diagram, explain microprocessor based computer system. Explain the functioning of each block.
b) Explain any 5 conditional flags. **[8 + 5]**

3. a) Explain with example i) Byte sized data ii) Word sized data
b) List and explain multipurpose registers of 8086 microprocessor **[6 + 7]**

4. a) With suitable examples and diagrams, explain any 2 types of data addressing modes.
b) Explain the evolution of microprocessor from 4 – bit to 16 – bit. **[7 + 6]**

UNIT – II

5. a) Describe PUSH and POP operations with suitable diagrams and examples.
   b) Explain the usage of direction flag in string operations. [9 + 4]

6. a) Differentiate between i) ADD and ADC
   ii) SHR and SAR
   iii) CMPS and SCAS
   b) Explain any two logical instructions with examples. [9 + 4]

7. a) Write an assembly level program to check whether the given number is prime or not.
   b) Explain NEAR and FAR calls with suitable examples. [5 + 8]

UNIT – III

8. a) Write a short note on MACRO.
   b) What is an Interrupt? Give the functions of any 4 interrupt types supported by 8086. [4 +9]

9. a) Explain any data conversion method with suitable example.
   b) Write a note on hardware interrupts. [7 + 6]

10. a) Give the usage of PUBLIC and EXTERN directives with suitable examples.
    b) What is an interrupt vector? Explain. [6 + 7]

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COA 502 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
COMPUTER GRAPHICS AND MULTIMEDIA

Duration: 3 Hrs. Max. Marks: 120

PART – A

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

a) Write two advantages of raster graphics.

b) What do you mean by scan conversion?

c) What is view port?

d) Writ 3D scaling matrix.

e) What is clipping?

f) Define rigid body transformations.

g) What is quantization?

h) Write the advantage and disadvantage of CD-DA technology.

i) State the difference between pits and lands.

j) What are ADC and DAC?

k) Define data stream. Give on example of a data stream.

l) Expand MIDI and MPEG.

m) Define the terms frequency and sound.

n) List the drawbacks of DDA algorithm

o) What is a sliver?

p) Define multimedia

q) How are sound waves generated?

r) How data is written to magneto-optical disk?

PART – B

Answer any two full questions from each unit:

UNIT – I

2. a) Briefly explain raster system architecture.
b) Explain the midpoint technique used for drawing the circle. **[7 + 8]**

3. a) Briefly explain vector system architecture.
b) Explain the midpoint technique used for drawing the line. **[7 + 8]**

4. a) With the help of a diagram, explain the conceptual framework for interactive graphics.
b) Write a note on i) Replicating pixels ii) The moving pen **[7 + 8]**

UNIT – II

5. a) Show that two successive translations are additive and successive scaling are multiplicative.
   b) Explain the sequence of transformations for rotating an object about arbitrary point in 2D transformations. **[8+ 7]**

6. a) Explain Cohen Sutherland line clipping algorithm.
   b) Consider the endpoints A(20, 15), B(20, 50), C(60, 50), and D(60, 15) on a 2D space.
      i) Scale the polygon 2 alogy x-axis, 1.5 along y – axis.
      ii) Translate the polygon x – axis by 50 and y – axis by 30. **[8 + 7]**

7. a) Explain Cohen Hodgeman polygon clipping technique.
   b) Write the matrix translation, scaling and rotation about 3 axes in 3D homogeneous coordinate system. **[8 + 7]**

UNIT – III

8. a) List and explain various image recognition steps.
   b) Explain the main properties of multimedia system. **[9+6]**

9. a) Explain data stream characteristics for continuous media in detail.
   b) Explain different types of media. **[9 + 6]**

10. a) Briefly explain JPEG compression technique.
    b) Explain commonly used components of a MIDI synthesizer.
    c) Explain asynchronous, synchronous, and isochronous transmission modes. **[5 + 5 + 5]**

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COA 502.1 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
WEB PROGRAMMING WITH ASP.NET

Duration: 3 Hrs. Max. Marks: 100

PART – A

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

a) Name any four primary application entries that are stored in the virtual directory.

b) List any two methods corresponding to the events that occur in the global.aspx file.

c) How is a Literal Server control different from a label control?

d) Compare the ListBox server control and DropDownList control.

e) Differentiate between Button Server Control and Image Button Server control.

f) Explain the use of Panel Server Control.

g) Explain the use of Panel Server Control.

h) List any four validation controls.

i) Explain any two properties of a Password Recovery Control.

j) List any 4 options provided by BehaviourEditorPart.

k) Mention the important four DataSource Controls.

l) Write any two benefits of ASP.NET.

m) Write a note on inline coding model.

PART – B

Answer any two questions from each unit:

UNIT – I

2. a) Write a note on Application lifetime
b) What are the different Application Location Options available in ASP.NET?
c) Explain any two Server Control Validation of the Button Server Control. **[3 + 6 + 4]**

3. a) Write a note on code sharing using the code directory.
b) What are the different code compilation models that can be used to compile an application using ASP.NET? Explain.
c) What do you mean by Cross Page Posting? Explain. **[3 + 6 + 4]**

4. a) List any three features of Visual Web Developer 2005.
b) Explain any six inbuilt directories for web applications.
c) Explain the following: a) The Application State b) The view state **[3 + 6 + 4]**

UNIT – II

5. a) Explain how it is possible to retrieve a range of dates from a selection in a Calendar Control.
b) Explain the following with respect to AdRotatorControl
i) Alternate text Impressions

c) Explain any four properties of a Base Validator Class. [5 + 4 + 4]

6. a) Explain the steps involved in creating an User Account in ASP.NET.
   b) Explain any four date formats to output from the calendar control.
   c) Explain the different membership services that have to be set for retrieving the password in a PasswordRecovery Control. [5 + 4 + 4]

7. a) Explain any three login controls.
   b) Explain the use of an AdRotator Servel Control.
   c) What is the use of CompareValidator Control and customValidator Control? Explain. [6 + 3 + 4]

UNIT – III

8. a) Explain any four functions of a WebPartManager Control.
   b) Write a note on DataAdapters and DataSets.
   c) Why are Master pages needed in a web application? Explain. [4 +5 + 4]

9. a) Explain different types of themes.
   b) Explain the disconnected Data Architecture in .NET framework.
   c) Explain any two functions of a master page. [4 + 5 + 5]

10. a) How can themes be applied on Controls at Runtime? Explain.
    b) Explain the steps involved in accessing data with ServerExplorer. [8 + 5]

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COA 505.6 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
E – COMMERCE

Duration: 3 Hrs. Max. Marks: 80

PART – A

1. Answer any Ten of the following: **10×2=20**

a) Define E – Commerce.

b) List any four categories of E – Commerce business model.

c) Give any two benefits of EDI.

d) State any two core issues in the implementation of B2B.

e) List any two main activities of E-Commerce.

f) What is a digital signature?

g) List any two categories of smart cards.

h) Define SCM.

i) What are the benefits of using the internet for SCM?

j) What is denial of service?

k) What is phishing?

l) What are paperless bills?

PART – B

Answer any two questions from each unit:

UNIT – I

2. a) Explain the broad goals of E-Commerce.
b) Explain the prerequisites of E-Commerce. **[6 + 4]**

3. a) List the advantages and disadvantages of E-Commerce.
b) Explain the four functions of E-Commerce **[6 + 4]**

4. a) What is the scope of E-Commerce? Explain.
b) Write a note on the users of E-Commerce. **[6 + 4]**

UNIT – II

5. a) Briefly explain B2C E-Commerce with a diagram.
b) Explain the necessity of having firewalls. **[6 + 4]**

6. a) What are the benefits for buyers and sellers in a B2B market place?
b) Explain any six types of computer crimes. **[4 + 6]**

7. a) What are the different privacy issues in E-Commerce? Explain.
b) Explain public key encryption with the help of a diagram. **[5 + 5]**

UNIT – III

8. a) Explain the information flow in Business to Business supply chain with the help of a diagram.
   b) Write a note on spoofing and sniffing. [5 + 5]

9. a) Explain the functions of supply chain management.
   b) Explain any two modern payment systems. [5 + 5]

10. a) What is micropayment? Explain.
    b) Explain any two strategies of SCM. Give examples. [4 + 6]

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COA 504.4 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION OCTOBER 2017
B.C.A
DATA MINING

Duration: 3 Hrs. Max. Marks: 80

PART – A

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

a) What is data mining?

b) What is KDD?

c) What is supervised learning?

d) What is base cuboid?

e) What is clustering?

f) What is datamart?

g) What is SVM?

h) Define frequent set.

i) What is stemming?

j) What is temporal data mining?

k) What is decision tree?

l) Define web usage mining.

PART – B

Answer any two questions from each unit:

UNIT – I

2. a) Write a note on any two OLAP operations.
b) Explain meta data with their types. **[6 + 4]**

3. a) Describe typical warehouse architecture.
b) State the differences between DBMS and Data mining. **[6 + 4]**

4. a) Differentiate ROLAP and MOLAP.
b) Describe any two warehouse schema with examples. **[4 + 6]**

UNIT – II

5. a) Explain partition algorithm with an example.
b) Differentiate agglomerative and divisive clustering. **[6 + 4]**

6. a) Write a note on decision tree.
b) What is numerical clustering? How is it different from categorical clustering? **[5 + 5]**

7. a) Explain Apriori algorithm with an example.
b) Write a note on splitting criteria. **[6 + 4]**

UNIT – III

8. a) What is MLP? Explain.
   b) Explain the typical artificial neurons with activation function. [5 + 5]

9. a) Write a short note on genetic algorithm.
   b) Explain support vector machine. [6 + 4]

10. a) Explain neural network's perceptron model.
    b) Explain web content mining. [5 + 5]

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