SEAT No. :

[Total No. of Pages : 2

[5521]-101

M.C.A. (Commerce) (Semester - I)
101 : Fundamental of Information Technology
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :
   1) *All questions are compulsory.*
   2) *Figure to the right indicate full marks.*

Q1) Define the following terms (Any 7) :   **[7 × 2 = 14]**

   a)   Logic gates.

   b)   Hexadecimal number system.

   c)   System software.

   d)   Flowchart

   e)   Compiler

   f)   Joystick

   g)   Data Base management system

   h)   Protocol

Q2) Attempt the following (any 3) :   **[3 × 4 = 12]**

   a)   Explain Architecture of 8085 microprocessor.

   b)   What is operating system? Explain types of O.S.

   c)   Distinguish between Digital and Analog Transmission.

   d)   What is printer? Describe its types with suitable diagram.

Q3) Attempt the following (any 3) :   [3 × 4 = 12]

   a)   Explain Software Development Activities.

   b)   Explain EBCDIC in detail.

   c)   Define 'Output Device'. Explain LCD with figure.

   d)   Write an algorithm to find given number is prime or not and draw its flowchart.

Q4) Attempt the following (any 3) :   [3 × 4 = 12]

   a)   What is external storage devices? List it and explain any one in detail.

   b)   Write an algorithm to check leap year and draw a flowchart.

   c)   Convert the following :

        i) $(AC)_{16} = (?)_{10}$

        ii) $(10001)_2 = (?)_{10}$

   d)   Explain following DOS commands :

        i)   DEFRAG

        ii)   FDISK

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[5521]-102

M.C.A. (Commerce Faculty) (Semester - I)
102 : Programming in 'C'
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :
  1) *All questions are compulsory.*
  2) *Assume suitable data, if necessary.*

Q1) Attempt any seven :   **[7 × 2 = 14]**

  a)   What is expression in 'C'.

  b)   Define :
        i)   printf()
        ii)   Scanf()

  c)   Give syntax of if-else statement with example.

  d)   What is a function? List the types of function.

  e)   What is the difference between an array and an ordinary variable?

  f)   What is string? How to initialize a string variable.

  g)   What is 'union'? Give syntax of it.

  h)   Give syntax and example of fopen().

Q2) Attempt any three :   **[3 × 4 = 12]**

  a)   What is operator? Explain any two categories of it.

  b)   What is the difference between while loop and do-while loop.

  c)   Write a note on 'C preprocessor'.

d) What will be the output of the program?

```c
#include<stdio . h>
int main()
{
int fun(int);
int i = fun(10);
printf("%d\n", - - i);
return(0);
}
int fun(int i)
{
return (i++);
}
```

Q3) Attempt any three :   **[3 × 4 = 12]**

a) Write a 'C' Program to accept 'n' numbers, store them in an array and search for a given number using liner search.

b) Write a function in 'C' which will accept a number and returns whether the number is even or odd.

c) Write a program to display the following pattern:

```
1     2     3
4     5
6
```

d) What will be the output?

```c
#include<stdio.h>
int main()
{
int i = 6,* j, k;
j = &i;
printf("%d\n", i * * j* i + *j);
return 0;
}
```

Q4) Attempt any three :   **[3 × 4 = 12]**

    a)   What is an array? Discuss limitations of an array.

    b)   What is nested structure? Explain it with proper example.

    c)   Write syntax and usage of the function

        i)   fopen()   ii)   fclose()

        iii)   fread()   iv)   fwrite()

    d)   Trace the output

```
int main()
{
    int color = 2;
    switch(color)
    {
        case0: printf("Black");
        case1: printf('Blue");
        case2: printf("Green");
        case3: printf('Aqua");
        default:printf("Other");
    }
    return 0;
}
```

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[5521]-103

M.C.A. (Commerce) (Part - I) (Semester - I)
ELEMENTS OF STATISTICS
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :
1) *All questions are compulsory.*
2) *Figure to the right indicate full marks.*
3) *Use of calculator is allowed.*
4) *Assume suitable data, if necessary.*

Q1) Answer any two of the following :   **[14]**

a) Draw histogram for the following data and find the mode graphically.**[7]**

Marks	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	2	18	30	42	15	10

b) Calculate Standard deviation and coefficient of variations for the following frequency distribution of the marks of 100 students given below.   **[7]**

Marks	Frequency
0-20	5
20-40	12
40- 60	32
60- 80	40
80-100	11

c) The hours of sleep for 10 patients before and after giving a new drug and recorded. Test whether there is a significant difference in the average hours sleep at 5% level of significance (t value with 10 d,f. is 2.228). **[7]**

Patients No.	1	2	3	4	5	6	7	8	9	10
Sleep (before) in hours	6	5	7	7	8	9	6	6	7	8
Sleep (After) in hours	7	8	7.5	9	7	6.5	7	8	8.5	7

Q2) Attempt any two of the following. [2 × 6 = 12]

a) Explain term correlation and use of scatter diagram to all explain types of correlation. [6]

b) The failure of a certain electronic device is suspected to increase linearly with its temperature. Fit a least square regression line through the following data. [6]

Temp 0_F	55	65	75	85	95	105
Failure rate 10^{-6}	1.90	1.93	1.97	2.00	2.01	2.01

Also predict the failure rate at 70°C.

c) In a department examination, the candidate of both gender yielded as presented in following table : [6]

Gender	Pass	Fail	Total
Male	18	50	68
Female	62	127	189

Can it be inferred that the result of the test is related to the gender of the candidate.

Q3) Attempt any three of the following. [3 × 4 = 12]

a) Explain the following terms. [4]

i) Type I error

ii) Critical region.

b) Explain the procedure to test the equality of the two population variances. [4]

c) Let X be the random variable with the following as the p.m.f. [4]

x	0	1	2	3
P(x)	0.2	0.1	0.3	0.4

Find E(X) and Var(X).

d) If X has normal Distribution with mean 2 and variance 4 find [4]

i) $P\{X > 4\}$

ii) $P\{2 < X < 6\}$

Q4) Attempt any three of the following. [3 × 4 = 12]

a) State Binomial distribution with parameter n and p and derived expression of mean and variance. [4]

b) Answer the following : [4]

   i) State additive property of the Poisson distribution.

   ii) Let X and Y are independent Poisson random variables with mean 2 and 4 respectively find $P\left\{\dfrac{X+Y}{2} < 1\right\}$.

c) A random sample of 27 pairs of the observations from normal distribution gave correlation coefficient of 0.6. Is this correlation coefficient is significant of the correlation coefficient in the population? [4]

d) If X and Y are independent normal variables with means 2, 2 and variances 1, 4 respectively. A Find [4]

$$P\left[\dfrac{X}{2} + Y > 3\right]$$

$P[X + Y < 10]$

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[5521]-104

M.C.A. (Commerce) (Semester - I)
104 - Financial Accounting
(Credit System) (2013 Pattern)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :
   1)   ***Questions no. 1 is compulsory.***
   2)   ***Solve any Three questions from the remaining.***

Q1) From the following Trial Balance of Mr. Sanjay, prepare Final Accounts as on
      31st March, 2016.   **[14]**

Particulars	Debit Rs.	Credit Rs.
Capital		250000
Premises	137000	
Plant and machinery	40000	
Goodwill	20000	
Drawings	25000	
Cash in hand	1895	
Opening Stock	27000	
Wages	10000	
Purchases less returns	70000	
Carriage inward	600	
Commission	6000	
Insurance	2000	
Motor car	13000	
Carriage outward	1400	
Sales less returns		130000
Salaries	15000	
Bank charges	105	
Reserve for doubtful debts		1500
Debitors	20000	
Creditors		7500
Total	389000	389000

P.T.O.

Adjustments;

a) On 31ˢᵗ March, 2016, the stock was valued at Rs. 50000/- (Market Value Rs.60000/-).

b) Insurance premium amounting to Rs. 500 is prepared.

c) Outstanding salaries amounted to Rs. 1500.

d) Depreciation to be provided on Plant and Machinery and Motor Car is 15% p.a.

Q2) Journalise the following transactions in the books of M. **[12]**

a) Mandar started Business with Capital of Rs. 20000/- and Machinery of Rs.30000/-

b) Deposited to open Bank a/c Rs.3000/-

c) Sanjay has given Loan of Rs.15000/- to the business.

d) Sold Goods to Vijay worth Rs.65000/- on credit.

e) Purchased goods worth Rs.50000/- from M/s ABC Co. on credit.

f) Received Rent Rs. 2000/- by cash.

g) Cash withdrawn for personal use by Mr. M Rs.5000/-

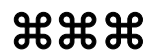h) Paid Salaries Rs.10000/- Wages Rs.8000/- and Telephone Charges Rs.1000/-

Q3) Success Enterprises purchased Machinery on 1ˢᵗ April 2016 for Rs. 1000000/- They have decided to Company decided to charge depreciation by Fixed Instalment method. The life of the Machine is expected to be 5 years. However Company have sold this Machinery on 31ˢᵗ March 2018 for Rs. 150000/- Prepare Machinery Account and Depreciation Account. **[12]**

Q4) Define Management Accounting. Distinguish between Financial Accounting and Management Accounting. **[12]**

Q5) Write short notes on the following (Any3) :   [12]

    a)   Importance of Accounting Standards.

    b)   Merits and Demerits of ERP (Enterprise Resource Planning).

    c)   Convention of Conservatism.

    d)   Going concern Concept.

    e)   Users of Financial Accounting.

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[5521]-201

M.C.A. (Commerce) (Part - I) (Semester - II)

201 : DATA STRUCTURE USING - C

(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

Q1) Solve the following.

   a) Attempt any three :   **[12]**

     i) Define stack? Explain the operations performed on the stack.

     ii) Write an algorithm for bubble sort.

     iii) Write 'C' function to insert node at the beginning to singly linked list.

     iv) Write a note on circular doubly linked list.

   b) Attempt any one :   **[2]**

     i) Define time complexity & space complexity.

     ii) State the applications of graph.
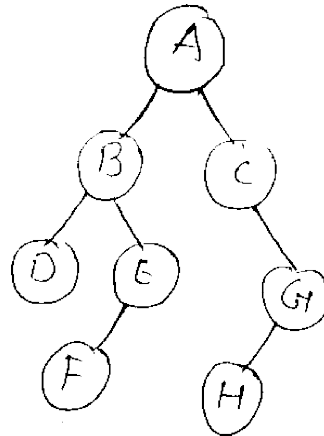
Q2) Attempt any three :   **[12]**

   a) Define :

     i) Abstract Data type

     ii) Linked List

     iii) Priority queue

     iv) Hashing

   b) Write an iterative algorithm for postorder traversal of a tree.

   c) Write a 'C' function to delete element from queue.

   d) Write a 'C' function to count no. of leaf nodes of a tree.

Q3) Attempt any three :   [12]

   a)   Define array? Explain dynamic implementation of an array.

   b)   Convert the following infix expression to postfix expression.

       (A + B) * (C – D) / E

   c)   Find Inorder, Preorder & Postorder traversal for following binary tree.

   d)   What is generalized linked list? Represent the given list

       (a, b, (c, d, e), f, g)

Q4) Attempt any three :   [12]

   a)   Sort the following numbers in ascending order using heap sort method.

       100, 97, 50, 23, 65, 92, 15, 78.

   b)   Write an algorithm for DFS traversal of a graph.

   c)   Explain any two hashing techniques.

   d)   Write a note on Adjacency list.

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[5521]-202
M.C.A. (Commerce) (Semester - II)
202 : OOP's Using C++
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
   1)   All questions are compulsory.
   2)   Figures to the right indicate full marks.

Q1) Attempt any two :   **[2 × 7 = 14]**
   a)   Write C++ program to create abstract class of volume. Derive two classes cylinder and cone. Calculate the volume of both.
   b)   Write a C++ program using operator overloading to override the <<and>> operators for class DATE whose data members are dd, mm, yy.
   c)   Write a C++ program to declare a class Book having data members bookid, title and author using array of objects. Accept data for five books, display data, sort and search book.

Q2) Attempt any three :   **[3 × 4 = 12]**
   a)   What is the output of this program?

```
# include <iostream>
  using namespace std;
int main ( )
 {
    randomize ( );
    int marks [  ] = {99, 92, 94, 96, 93, 95};
    My marks = marks [1 + random (2)];
      cout << My Marks << end1;
 }
```

   b)   Trace the output for

```
# include <iostream>
  using namespace std;
void position (int &c_1, int c_2 = 3)
 {
    c_1 + = 2;
    c_2 + = 1;
 }
```

P.T.O.

```cpp
int main ( )
{
    int p₁ = 20,  p₂ = 4;
    position (p₁);
    cout << p₁ << ","  << p₂ << end1;
    position (p₂, p₁);
    cout << p₁ << ","  << p₂ << end1;
}
```

c) Trace the out put for

```cpp
# include <iostream>
 using namespace std;
class A
{
    public :
        in x = 20;
};
class B
{
    public :
        in x = 10;
};
int main ( )
{
    A obj 1;
    B obj 2;
    obj 1 = obj 2;
    cout << obj 1.x
    cout << end1;
    return 0;
}
```

d) Trace the output for

```cpp
# include <iostream>
 using namespace std;
class A
{
    int x = 2;
    int main( )
    {
        int x = 4;
        cout << x;
        cout << end1;
```

```
            }
                    cout << x;
                    cout << end1;
                    cout << :: x;
                    cout << end1;
                    return 0;
            }
```

Q3) Attempt any three :   **[3 × 4 = 12]**

    a)   Explain intine function with its example and limitations.

    b)   What is an inheritance? Explain multiple and hierarchical inheritance with example.

    c)   Explain the importance of class template with example.

    d)   Explain operator overloading with uniary operators.

Q4) Write short notes on :   **[3 × 4 = 12]**

    a)   Abstract class

    b)   Destructor

    c)   Namespaces

    d)   Access specifier

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[5521]-203

M.C.A. (Commerce) (Semester - II)

203 : Elements of Mathematics

(2013 Pattern) (Credit System)

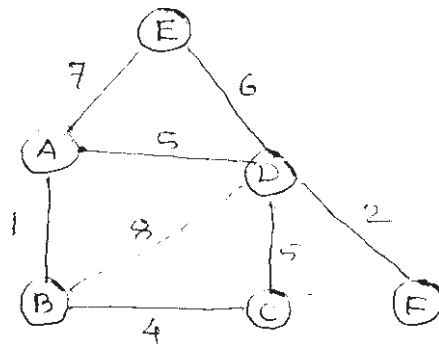*Time : 3 Hours]* *[Max. Marks :50*

Instructions to the candidates:

    1) *All questions are compulsory.*

    2) *Figures to the right indicate full marks.*

Q1) Attempt any two from the following : **[2 × 7 = 14]**

    a) Explain logical connectivities with truth tables.

    b) Let A = {1, 2, 3, 4, 5, 6} be a set and relation R defined on A as : x R y if and only if a ≤ b. Determine wheather R is a partial order relation or not.

    c) Explain the MST and find MST for the following.

Q2) Attempt any three from the following : **[3 × 4 = 12]**

    a) Draw Hasse diagram for the following
        {2, 3, 4, 6, 8, 12, 18, 36}

    b) Verify the following are equivalent or not.
        $(\sim p \lor q) \land (\sim q \lor p) \equiv p \Leftrightarrow q$

    c) Write the following sets in the set builder form
        i) A = {7^1, 7^2, 7^3, 7^4}
        ii) B = {2, 4, 6, 8, 10, 12, 14}

    d) Explain the following terms
        i) Multigraph
        ii) Connected graph

Q3) Attempt any three from the following: [3 × 4 = 12]

   a)   Solve the following by crammer's rule

       $x + y + z = 6,\ 3x - y + 3z = 10,\ 5x + 5y - 4z = 3$

   b)   Examine the validity of the following argument

$$p \vee q$$

$$\frac{\sim q}{\therefore\ p}$$

   c)   Explain the following

      i)   m-ary tree

      ii)   height of tree

   d)   Define and explain

      i)   Range

      ii)   Identity Relation

Q4) Attempt any three from the following :   [3 × 4 = 12]

   a)   Explain the following.

      i)   Lower triangular matrix

      ii)   Scalar matrix

   b)   Write following sets in set builder form

       $A = \{2, 3, 4, 6, 8, 12, 18, 36\}$

       $B = \{1, 4, 9, 16\}$

   c)   Define complete Graph and Draw complete Graph for k3, k5.

   d)   Verify wheather contradiction is exist or not

       $(p \Rightarrow q)\ \wedge\ (q \Rightarrow p)$

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[5521]-204

M.C.A. (Commerce Faculty)
204 : SYSTEM ANALYSIS AND DESIGN
(2013 Pattern) (Semester - II)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
   1) All questions are compulsory.
   2) Neat diagram must be drawn wherever necessary.
   3) Figures to the right indicate full marks.

Q1) The SBI Bank Management has decided to implement computerized system for all bank transaction. Consider suitable assumptions. Draw the content level and first level DFD for the system and ERD diagram.   **[14]**

Q2) Attempt the following (any three) :   **[3 × 4 = 12]**
   a)   Explain spiral model used in software development.
   b)   Explain various types of system maintenance.
   c)   What is Agile process of software development.
   d)   Advantages and disadvantages of water fall model.

Q3) Attempt the following (any three) :   **[3 × 4 = 12]**
   a)   Design input form for voter registration system.
   b)   What is S/W testing? Explain the objective of software testing.
   c)   Explain various steps of SDLC model.
   d)   Explain prototype model of software development.

Q4) Write short notes on (any three) :   **[3 × 4 = 12]**
   a)   Post Implementation study.
   b)   Feasibility study in detail.
   c)   Reverse engineering.
   d)   4GL

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[5521]-205

M.C.A. (Commerce) (Semester - II)

205 : Database Management System

(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

1)   All questions are compulsory.

2)   Figures to the right indicate full marks.

3)   Neat diagrams must be drawn wherever necessary.

4)   Assume suitable data, if necessary.

Q1) a)   Attempt any three :   **[3 × 2 = 6]**

     i)   What is transaction?

     ii)   What is Record? List the types of Record.

     iii)   Define :

        I)   Entity

        II)   Relationship

     iv)   List any four aggregate functions used in SQL.

  b)   In a nursery, the plants are sold to the customers. These plants are flowering and non-flowering only. Nutrients are given to the plant with same quantity. Nutrients includes pesticides, watering and manure. From a given case study list out entities, attributes, primary keys and relationship. Draw an E-R diagram for the same.   **[8]**

Q2) Attempt any three :   **[3 × 4 = 12]**

  a)   Explain concept of Normalization in detail.

  b)   What is Deadlock? Explain deadlock prevention in detail.

  c)   Explain log based recovery in detail.

  d)   Explain properties of transaction.

Q3) a)   Consider the following relations and solve any two queries in relational algebra.   **[2 × 2 = 4]**

    Item (item-code, item-name, price)

    Order (order-code, order-date, customer-name)

    Item-order (item-code, order-code, quantity)

    i)   Find all the items that are ordered by customers.

    ii)   Display all the order numbers along with items under then.

    iii)   List all the items along with their prices.

P.T.O.

b) Consider the following relations and solve any four queries in SQL.
Owner (licence-no, name, address, phone)   **[4 × 2 = 8]**
Car (carno, model, colour, licence-no)
  i) Create table query for car table by adding primary key constraint and model should not be null.
  ii) Add city attribute in owner table.
  iii) Insert a raw/record in owner table.
  iv) Display the names of owner of 'zen' or 'Indica' cars.
  v) Delete all cars having colour 'black'.

Q4) Attempt any three :   **[3 × 4 = 12]**
  a) Explain data types in SQL.
  b) Write a note on Recoverability.
  c) Following is the list of events in an interleaved execution if set T_1, T_2, T_3 and T_4 assuming 2PL. Is there a deadlock? If yes which transactions are involved in deadlock?

Time	Transaction	Code
t_1	T_1	Lock (A, X)
t_2	T_2	Lock (A, S)
t_3	T_3	Lock (A, S)
t_4	T_4	Lock (B, S)
t_5	T_1	Lock (B, X)
t_6	T_2	Lock (C, X)
t_7	T_3	Lock (D, S)
t_8	T_4	Lock (D, X)

  d) Following are the log entries at the time of system crash.
  [Start -transaction, T_1]
  [Write-item, T_1, A, 1000]
  [Commit, T_1]
  [Start-transaction, T_3]
  [Write-item, T_3, B, 2000]
  [Checkpoint]
  [Commit, T_3]
  [Start-transaction, T_2]
  [Write-item, T_2, B, 3000]
  [Start-transaction, T4]
  [Write-item, T_4, D, 2000]
  [Write-item, T_2, C, 3000] system crash
  If deferred update technique with checkpoint is used, what will be the recovery procedure?

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[5521]-206
M.C.A. (Semester - II)
COMMERCE
Human Resource Management
(2013 Pattern) (Credit Base System)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
    1)   *All questions are compulsory.*
    2)   *Figures to the right indicate full marks.*

Q1) Answer the following (any two) :   **[14]**
    a)   Define Human resource Planning .Explain the various factor influencing estimating Human Resource in organization.
    b)   What is performance appraisal? Explain the process of performance Appraisal in brief.
    c)   Define HRM. Explain functions of HRM.

Q2) Answer the following (any two) :   **[14]**
    a)   Define training. Explain various methods of training in brief.
    b)   Define job description and job specification. Explain in detail Job description & job Specification with example.
    c)   Define recruitment. Explain the various sources of recruitment.

Q3) Answer the following (any two) :   **[14]**
    a)   Explain the various roles & responsibilities of HR manager in IT Industry.
    b)   What organization Development? Explain methods of Organization Development.
    c)   Discuss International training and development issue.

Q4) Write short notes (Any Two)   **[8]**
    a)   The selection process in detail.
    b)   Challenges of HRM.
    c)   Reasons for joining union.
    d)   Collective bargaining is an effective tool for graveness redressal.

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[5521]-301
M.C.A. (Semester - III)
COMMERCE FACULTY
301 : Core Java
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
   1)   All questions are compulsory
   2)   Assume suitable data, if necessary.

Q1) Attempt any seven :   **[7 × 2 = 14]**

   a)   What is the role of java C and java in program execution?

   b)   What is the use of 'static' and 'this' keywords?

   c)   What is the purpose of hasnext ( ) method?

   d)   Define constructer and list its types.

   e)   Differentiate between string & string buffer.

   f)   List parameters used in Applet tag.

   g)   Define interfaces.

   h)   What is difference between throw and throws?

Q2) Attempt any three :   **[3 × 4 = 12]**

   a)   Write a java program to accept three command line arguments i.e. first two integer nos and third is any arithmatic operator and display the result.

   b)   Define the following :

   i)   Data types   ii)   Variables

   iii)   Operators   iv)   Keywords

   c)   Write a java program to accept name from user of the first character of the name is not in uppercase, then throw an exception.

   d)   Define inheritance and explain types of Inheritance supported in Java.

Q3) Attempt any three :   **[3 × 4 = 12]**

    a)   Write a note on garbage collection.

    b)   List any four AWT componants with syntax and example.

    c)   Create an applet to display a string 'MCA Commerce' in red color.

    d)   Create package methods for two classes addition and substraction addition has method add ( ) to perform addition and substration has method sub( ) to purform substraction and display the result.

Q4) Attempt any three :   **[3 × 4 = 12]**

    a)   What is layout manager? Explain any two in detail.

    b)   Explain applet life cycle.

    c)   Write a program to create a linkedlist. Add element at the begining and delete element from the last of the collection.

    d)   Write a java program to check age eligibility of a person for votting.

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[5521]-302

M.C.A. (Commerce) (Semester - III)

302 : ADVANCED DATABASE MANAGEMENT SYSTEM

(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

1) *Attempt any five questions.*

2) *Figures to the right indicate full marks.*

Q1) Attempt the following:

   a)   What are advantage and disadvantage of parallel database?   **[4]**

   b)   Explain N-tier Architecture.   **[4]**

   c)   Define : Vertical Fragmentation.   **[2]**

Q2) Attempt the following:

   a)   Explain decision tree in detail.   **[4]**

   b)   What is deadlock?   **[4]**

   c)   What is Point Data?   **[2]**

Q3) Attempt the following:

   a)   Write note Homogeneous system.   **[4]**

   b)   Write note on time stamping.   **[4]**

   c)   Define: ranked query.   **[2]**

Q4) Attempt the following:

   a)   Explain local wait for graph.   **[4]**

   b)   List out steps of query processing.   **[4]**

   c)   What is goal of ADBMS?   **[2]**

P.T.O.

Q5) Attempt the following :

    a)   Write a note on object.   **[4]**

    b)   Explain 2-phase commit protocol.   **[4]**

    c)   Define the term Recall.   **[2]**

Q6) Attempt the following :

    a)   Write a note on Intra query parallelism.   **[4]**

    b)   Write a note on Shared memory.   **[4]**

    c)   Define : Inheritance   **[2]**

Q7) Attempt the following :

    a)   Consider the following schema

        Teacher (tno, tname, city, class)

        Perform Horizontal fragmentation of Game relation using following predicates.

        $P_1: \sigma_{city}$ = "Ahmednagar"

        $P_2: \sigma_{city}$ = "Pune"

        $P_3: \sigma_{city}$ = "Nashik"   **[5]**

    b)   Perform vertical fragmentation of Drug relation given below. Drug (dno, dname, price, type, company). According to following requirements.   **[5]**

        i)   Site A requires information about dno, dname and type.

        ii)   Site Y requires information about company price.

Q8) Attempt the following :

    a)   Write short note on locking methods.   **[5]**

    b)   What is XML? Differentiate between HTML and XML.   **[5]**

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[5521]-303
M.C.A. (Semester - III)
COMMERCE
303 : Object Oriented Software Engineering
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
    1)   *All questions are compulsory*
    2)   *Figures to the right indicate full marks.*
    3)   *Neat diagrams must be drawn wherever necessary.*

Q1) Attempt any seven of the following :   **[7 × 2 = 14]**
    a)   Define Abstraction?
    b)   State symbols use in use case diagram.
    c)   What do you mean by OOSE?
    d)   Which symbol is use to show dependency?
    e)   Define type and role names.
    f)   Define term fork and join.
    g)   Define concurrency?
    h)   Define attribute and operation?
    i)   Describe the term deployment.

Q2) Attempt any four of the following :   **[4 × 3 = 12]**
    a)   Describe all notations of Collaboration diagram in details.
    b)   Explain extensibility mechanism in UML.
    c)   Explain Object design process.
    d)   What is Unified Process? Explain its phases.
    e)   Explain different types of conceptual model of UML.

Q3) Attempt any three of the following :   **[3 × 4 = 12]**
    a)   Explain SDLC in details.
    b)   Explain UML architecture in details.
    c)   Explain Booch method with an example.
    d)   Draw Class Diagram for ATM Banking.

Q4) Attempt any three of the following :   [3 × 4 = 12]

    a)   Explain different types of views.

    b)   Explain Testing life cycle in details.

    c)   Draw Activity diagram for Library Management System.

    d)   Explain OOA in details.

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[5521]-304

M.C.A. (Commerce) (Semester - III)
304 : NETWORK OPERATIONS
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
   1) *All questions are compulsory.*
   2) *Figures to the right indicate full marks.*

Q1) Explain the following terms (Any one) :   **[1 × 2 = 2]**
   a)   LAN
   b)   IP

Q2) Solve the following questions (Any three) :   **[3 × 4 = 12]**
   a)   What is Computer Network?
   b)   Explain briefly Nyquist's bit rate formula for noiseless channel.
   c)   Differentiate between OSI and TCP/IP Model.
   d)   Given a 12 bit sequence 11010011101100 and a divisor of 1011. Find the CRC.

Q3) Solve the following questions (Any three) :   **[3 × 4 = 12]**
   a)   Explain briefly IPV4 Protocol.
   b)   What are the advantages of VLANS?
   c)   Explain briefly Synchronous Transmission.
   d)   Write a short note on ALOHA.

Q4) Solve the following questions (Any three) :   **[3 × 4 = 12]**
   a)   Explain briefly Message switching.
   b)   What are the problems with 1-bit sliding window protocol?
   c)   Explain FDMA Channelization.
   d)   What is bandwidth? Explain.

P.T.O.

Q5) Solve the following questions (Any three)   **[3 × 4 = 12]**

    a)   Write a note on CSMA/CD.

    b)   Explain briefly twisted pair cable.

    c)   Write a note on Hamming code.

    d)   What is Data Communication? Explain.

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[5521]-305

M.C.A. (Commerce Faculty) (Semester - III)
305 : OPERATING SYSTEM
(2013 Pattern)

Time : 3 Hours] *[Max. Marks :50*
Instructions to the candidates:
  1) All Questions are compulsory.
  2) Figures to the right indicate full marks.

Q1) Attempt the Following (any 7): [7 × 2 = 14]

  a) What are the states of process?

  b) Define Linker and Loader.

  c) What is Page Fault?

  d) Define Swap In and Swap Out.

  e) Define the term Long term scheduler.

  f) State any two attributes of Memory management system call.

  g) What you mean by Physical address?

  h) Define Critical Section.

Q2) Attempt the following (any 3): [3 × 4 = 12]

  a) What are the methods used to remove the deadlock? Explain it.

  b) Explain Index Allocation method of file.

  c) Write note on the Reader Writers Problem.

  d) Calculate Average turn-around time and Average waiting time for the Round Robin using Time Quantum = 4 for the following:

Processes	Burst Time	Arrival time
P1	24	0
P2	03	1
P3	03	2

Q3) Attempt the following (any 3) :   [3 × 4 = 12]

a) Explain Multilevel Queue scheduling.

b) Explain Process state transition diagram.

c) Write note on Segmentation with paging.

d) Consider the following Page reference String find page fault for 3 free frames using the following:

 i) LRU   ii) FIFO

  4,3,2,1,4,3,5,4,3,2,1,5

Q4) Attempt the following (any 3) :   [3 × 4 = 12]

a) Explain Tree structure of directory.

b) What are the Scheduling criteria? Explain it.

c) Write note on I/O interface

d) Consider the following snapshot of system. A system has 5 processes A through E and four resources type R1 through R4:

	Allocation			
	R1	R2	R3	R4
A	0	0	1	2
B	1	0	0	0
C	1	3	5	4
D	0	6	3	2
E	0	0	1	4

	Max			
	R1	R2	R3	R4
A	0	0	1	2
B	1	7	5	0
C	2	3	5	6
D	0	6	5	2
E	0	6	5	6

Available Resources			
R1	R2	R3	R4
1	5	2	0

Answer the following questions using Bankers Algorithm:

i) What are contents of matrix need?

ii) Is the system in a safe mode?

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[5521]-307
M.C.A. (Semester - III)
COMMERCE
308 : Management Information System
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
   1)   *Solve any five questions.*
   2)   *Figures to the right indicate full marks.*

Q1) Explain concept of Information. How MIS helps to improve quality of information. **[10]**

Q2) Explain the role of system analyst, in development of MIS. **[10]**

Q3) What is system orientation? Explain system development through OOT. **[10]**

Q4) How structure of MIS is based on management activity? **[10]**

Q5) Compare MIS and DSS. **[10]**

Q6) Explain the concept of system. Explain the need and importance of system analysis for existing system. **[10]**

Q7) How information system impacts organizations and business firms? Explain in detail. **[10]**

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[5521]-401

M.C.A. (Commerce)

401 : ADVANCE JAVA

(2013 Pattern) (Semester - IV)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

  1)   All questions are compulsory.

  2)   Figures to the right indicate full marks for the question.

Q1) Attempt all of the following :   **[7 × 2 = 14]**

  a)   What is cookies?

  b)   What is Thread priority?

  c)   Write use of socket class.

  d)   Write different types of servlet.

  e)   What is JSP tags?

  f)   What is Metadata?

  g)   What is Beans?

Q2) Attempt any three from the following :   **[3 × 4 = 12]**

  a)   What is JDBC? Explain JDBC drivers in detail.

  b)   What is significance of prepared Statement class, explain in detail?

  c)   Write servlet program to display Hit count.

  d)   Write JDBC program to display employees whose name starting with 'N'.

Q3) Attempt any three from the following :   **[3 × 4 = 12]**

  a)   Explain the states involved in thread life cycle.

  b)   Explain JSP directives with suitable example.

  c)   Write JSP program to accept username & print as per server time.

  d)   Create thread to display prime numbers between 1 to 500 affer every 3 second.

P.T.O.

Q4) Attempt any three from the following :   [3 × 4 = 12]
  a) Explain RMI architecture with diagram.
  b) What is JAR file? Write the steps to create JAR file.
  c) Write file server program which accepts file name from client and display contents on client machine.
  d) Write a program to display course detail (courseno, coursename, course fees) using JDBC.

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[5521]-402

M.C.A. (Semester - IV)
COMMERCE
402 : Visual Programming
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
    1)   *Figure to right full marks.*
    2)   *Attempt all of the following.*

Q1) Attempt any seven of the following :   **[7 × 2 = 14]**
    a)   Differentiate between DrawText( ) and TextOut( ).
    b)   Define Device Context.
    c)   Explain Mapping modes.
    d)   What are virtual keys.
    e)   Give syntax of message box API.
    f)   What is Hungarian Notation?
    g)   What is peekMessage( ).
    h)   What is hotspot and a caret.

Q2) Attempt any three of the following :   **[3 × 4 = 12]**
    a)   Explain in detail about the windows message structure and windows procedure.
    b)   Differentiate modal and modeless dialog boxes.
    c)   What is Thread? Differentiate between Multitasking and Multithreading.
    d)   What is Timer? Explain the application of Timer.

Q3) Attempt any three of the following :   **[3 × 4 = 12]**
    a)   Explain OBDC and its architecture with neat diagram.
    b)   Differentiate between Pen and Brush.
    c)   Explain LParam and WParam in case of client mouse message.
    d)   Explain the different methods of Device context.

Q4) Attempt any two of the Following :   **[2 × 6 = 12]**

a)   Display a static text on the screen. By pressing "HOME" and "END" key the cursor can be moved the beginning and end of the text respectively.

b)   Write a window procedure to change the color of client area based on timer.

c)   Write a SDK program to calculate GCD of two numbers using three textboxes and one ok button, two textboxes to accept two numbers and third textbox for displaying result.

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[5521]-403

M.C.A. (Semester - IV)
COMMERCE
CS -403 : Distributed Database System
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

1)   *All question are compulsory.*

2)   *Figures to the right indicate full marks.*

Q1) Attempt any seven :   **[7 × 2 = 14]**

    a)   Define :

        i)   Network Transparency

        ii)   Replication Transparency

    b)   Differentiate between Shared Memory and Shared Disk Architecture.

    c)   Define :

        i)   Primary Horizontal Fragmentation.

        ii)   Derived Horizontal Fragmentation.

    d)   Define :

        i)   Bushy Join Tree

        ii)   Linear Join Tree

    e)   What are different characteristics of Query Processing?

    f)   What is Deadlock?

    g)   Define System and System failure.

    h)   Which are the types of transaction?

Q2) Attempt any three :   **[3 × 4 = 12]**

    a)   Discuss the different types of transparencies addressed by distributed database.

    b)   Explain the components of DDBMS.

    c)   Write a note INGRES Algorithms.

    d)   Write a on "MDBS without GCS"

Q3) Attempt any three :   [3 × 4 = 12]
   a)   Write a note on In-Place-Order.
   b)   What is workflow? Explain types of workflow?
   c)   Write a note on Multiversion TO Algorithm.
   d)   Write a note on Distributed deadlock detection.

Q4) Attempt any three :   [3 × 4 = 12]
   a)   Student (Rno, Sname, age, address)
        Project (Pno, Pname, duration, type)
        St-Proj (Rno, pno, grade)
        Draw Query graph for following query
        Select Sname, Pname
        from Student, Project, St-Proj
        where Student.Rno=St-Proj.Rno
        and Project.Pno=St-Proj.Pno
        and age>30 and duration < 12
        and grade='A+'
   b)   Simplify the following query and transform it into an optimized
        operator tree, using the restructuring algorithm
        Select Iname, Inv-no
        from Item I, Invoice in, In-inv itn
        where In.amt> 15000
        and (I.iname ='grocery' OR itn.Qty=400)
        and itn.Inv-no=In.Inv-no and itn.itno=I.itno;
   c)   Assume that Dept is horizontally fragmented as
        Dept 1 = Dno <=20(Dept)
        Dept 2 = Dno >20(Dept)
        Reduce the following query into a reduced query on fragments.
             Select Ename, Dname
             From Employee,Dept
             Where Employee.Dno=Dept.Dno
             And Dno=9;
   d)   Consider the following schema
        DOCTOR (DNUM, NAME, DEPT)
        Fragment the given relation into fragments DOCTOR1 DOCTOR2,
        DOCTOR3 using following predicates
        DOCTOR1 = SL $_{DEPT ="SURGERY"}$ (DOCTOR)
        DOCTOR2 = SL $_{DEPT = "PEDRIATICS"}$ (DOCTOR)
        DOCTOR3 = SL $_{DEPT = "ORTHO" \ AND \ DEPT = CARDIAC"}$ (DOCTOR)

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[5521]-404

M.C.A. (Commerce) (Semester - IV)

404 : WEB TECHNOLOGIES

(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

1)   *Attempt any five questions.*

2)   *Figures to the right indicate full marks.*

Q1) Answer the following :

a)   Explain HTTP protocols.   **[5]**

b)   Explain DOM Model.   **[5]**

Q2) Answer the following:

a)   Explain types of CSS.   **[5]**

b)   Explain client side web scripting in VBscript.   **[5]**

Q3) Answer the following:

a)   Write steps for installing PHP.   **[5]**

b)   Write a Javascript to print fibonacci series of a given no.   **[5]**

Q4) Answer the following:

a)   Explain XML with CSS.   **[5]**

b)   Explain with example ordered & unordered list tags.   **[5]**

Q5) Answer the following :

a)   Explain HTML frame tags with example.   **[5]**

b)   Write a VBscript to check whether a given number is palindrome or
     not.   **[5]**

Q6) Answer the following :

    a)   Explain image mapping with example. **[5]**

    b)   Explain XSLT. **[5]**

Q7) Answer the following :

    a)   Explain web server Architecture model of PHP. **[5]**

    b)   Explain SAX and DOM parses. **[5]**

Q8) Answer the following :

    a)   Write HTML code to design Table **[5]**

Day	Mon	Tue	Wed	Thur	Fri
Time					
12.00-1.00					
1.00-2.00					
2.00-2.30-	Break				
2.30-3.30					

    b)   Explain Javascript Maths & string methods. **[5]**

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[5521]-405

M.C.A. (Semester - IV)
COMMERCE FACULTY
406 : IT Project Management
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
   1)   All questions are compulsory.
   2)   Figures to the right indicate full marks.

Q1) Attempt the Following (any 7) :   **[7 × 2 = 14]**
   a)   Define project and its attributes.
   b)   State qualities of Project manager.
   c)   What you mean by Defect Management?
   d)   Define Staff Acquisition.
   e)   What are the types of power?
   f)   Define Quality assurance.
   g)   List the processes involved in the Human resource management.
   h)   Write the formula for Cost performance index.

Q2) Attempt the following (any 3) :   **[3 × 4 = 12]**
   a)   Discuss on Project management.
   b)   Explain Cocomo Model.
   c)   Explain types of cost estimation.
   d)   What is Risk? Explain its Types.

Q3) Attempt the following (any 3) :   **[3 × 4 = 12]**
   a)   Explain project life cycle and its phases.
   b)   Explain Configuration management.
   c)   What is the role of user in System implementation?
   d)   Explain Project organization structure.

Q4) Attempt the following (any 3):   [3 × 4 = 12]

   a) Explain Cost budgeting and cost control.

   b) What are the outputs of Risk Response control?

   c) Write note on communication management.

   d) Discuss Qualities of Project Manager.

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[5521]-406

M.C.A. (Commerce Faculty)
407 : CYBER LAW AND INFORMATION SECURITY
(2013 Pattern) (Semester - IV)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

    1)   *All questions are compulsory.*

    2)   *Neat diagrams must be drawn wherever necessary.*

    3)   *Figures to the right indicate full marks.*

Q1) Define and explain in brief any seven of the following :   **[7 × 2 = 14]**

    a)   Fire wall

    b)   Cryptanalysis

    c)   Information Technology Act, 2000

    d)   Rotor Machines

    e)   Attributes of Electronic Records

    f)   Importance of Information Security

    g)   Trade Marks

    h)   Cipher

Q2) Discuss any three of the following :   **[3 × 4 = 12]**

    a)   Briefly explain IPR

    b)   Explain IP Security Architecture.

    c)   Discuss simple columnar transposition technique with example.

    d)   Explain brute force search technique.

Q3) Discuss any three of the following :   **[3 × 4 = 12]**

    a)   What is steganography?

    b)   Explain the EPS packet format.

    c)   What are the elements of public key crypto system?

    d)   What is transposition cipher?

P.T.O.

Q4) Discuss any three of the following :   [3 × 4 = 12]

    a)   Briefly define the cuser cipher.

    b)   Explain the basic principles of information security.

    c)   What is Infringement of patent and remedies?

    d)   What are the essential ingredients of symmetric cipher?

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[5521]-407

M.C.A. (Commerce) (Semester - IV)

408 : ADVANCED NETWORKING

(2013 Pattern)

Time : 3 Hours]   *[Max. Marks : 50*

Instructions to the candidates :
1) *Attempt any five questions.*
2) *Figures to the right indicate full marks.*

Q1) Attempt the following

    a)   Explain TCP/IP model.   **[4]**

    b)   Write a short note on Router.   **[4]**

    c)   Define WAN.   **[2]**

Q2) Attempt the following

    a)   Write a short note on digitizing audio and video.   **[4]**

    b)   What is Distance Vector Routing? Explain with example.   **[4]**

    c)   What is Cipher text?   **[2]**

Q3) Attempt the following

    a)   What is difference between symmetric and asymmetric key cryptography.   **[4]**

    b)   Write a short note on certificate based authentication.   **[4]**

    c)   List any two transposition techniques.   **[2]**

Q4) Attempt the following

    a)   Write a short note on ICMPV4.   **[4]**

    b)   What is Kerberos? State the parties involved in it.   **[4]**

    c)   Define Electronic Money.   **[2]**

Q5) Attempt the following

    a)   Write a short note on Firewalls.   **[4]**

    b)   What is difference between IPV4 and IPV6?   **[4]**

    c)   Define point-to-point WAN.   **[2]**

Q6) Attempt the following

    a)   Write a short note on CSMA/CD.   **[4]**

    b)   What is difference between UDP and TCP?   **[4]**

    c)   What is Inter Domain Routing?   **[2]**

Q7) Attempt the following

    a)   Explain structure of Routing.   **[5]**

    b)   Write a short note on VPN.   **[5]**

Q8) Attempt the following

    a)   Give the prime numbers P = 19, Q = 7. Find out N, E & D in an RSA encryption process.   **[5]**

    b)   Write a short note on Cross-Verification.   **[5]**

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[5521]-501

M.C.A. (Commerce) (Semester - V)
501 : ADVANCED WEB PROGRAMMING
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*
Instructions to the candidates:
1) *All questions carry equal marks.*
2) *Figures to the right full marks.*
3) *Attempt any five of the following.*

Q1) Attempt the following.

a) What is UDDI? Explain.   **[4]**

b) Explain the feature of C#.   **[4]**

c) What is polymorphism.   **[2]**

Q2) Attempt the following.

a) Explain Indexers with example.   **[4]**

b) State the different types of Validation Controls used in ASP.NET with example.   **[4]**

c) What is type conversion.   **[2]**

Q3) Attempt the following.

a) Explain JSON with example?   **[4]**

b) Write a C# program to accept the details of Person (pno, pname, desig) from user and store them in Person table which is created in MS-ACCESS.   **[4]**

c) What is Query Strings?   **[2]**

Q4) Attempt the following.

a) Write a C# Program to calculate factorial of a given number.   **[4]**

b) What is Event handling? Explain in c#.   **[4]**

c) What is WSDL?   **[2]**

Q5) Attempt the following :

   a)   What are cookies? Explain Cookies with suitable example.   **[4]**

   b)   What are the application of web Services? Explain.   **[4]**

   c)   What is NameSpace in C#?   **[2]**

Q6) Attempt the following :

   a)   What is Crystal Report Generation? Explain.   **[4]**

   b)   Write steps to access database in ADO.net using SqlDataReader object.   **[4]**

   c)   What is Function overriding ? Explain.   **[2]**

Q7) Attempt the following :

   a)   What is AJAX? Explain life cycle of AJAX.   **[5]**

   b)   What is the difference between Web Service and web application.   **[5]**

Q8) Attempt the following :

   a)   Write a web application in ASP.NET using C# to accept the Patient information and on submit button information should be displayed on next page.   **[5]**

   b)   Explain the different application of AJAX.   **[5]**

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[5521]-502

M.C.A. (Commerce) (Semester - V)

CA -502 : DATA CENTRE TECHNOLOGIES

(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

1)   *Out of 8 questions attempt any 5 questions.*

2)   *Draw neat labelled diagram where needed.*

Q1) Attempt all :

   a)   Explain briefly the causes of downtime. **[4]**

   b)   Explain briefly data centre pre-requisites. **[4]**

   c)   What is HVAC? **[2]**

Q2) Attempt all :

   a)   What is a Benchmark? Explain in detail. **[4]**

   b)   What are the types of Coad balancing? Explain any one type in detail. **[4]**

   c)   What is celebrity travels? **[2]**

Q3) Attempt all :

   a)   What are the best practices of system administration? **[4]**

   b)   Explain various high availability metrics. Explain each in detail. **[4]**

   c)   Define Out-band monitoring. **[2]**

Q4) Attempt all :

   a)   Explain SPEC-Mail benchmark and SPEC-Web benchmark. **[4]**

   b)   What are the types of complex cluster configuration? Describe any one in detail. **[4]**

   c)   Explain : internet access in datacenter. **[2]**

Q5) Attempt all :

    a)   How to select proper location for data center?   **[4]**

    b)   What is cluster? Explain different types of cluster.   **[4]**

    c)   What do you mean by PDUs?   **[2]**

Q6) Attempt all :

    a)   Explain automation and its different types.   **[4]**

    b)   Explain :   **[4]**

        i)   Electrostatic discharge [ESD].

        ii)   NOC

    c)   What is Co-location Data center?   **[2]**

Q7) Attempt all :

    a)   What do you mean by slowest link? How to identify it explain with suitable example?   **[4]**

    b)   Write a short note on private Heartbeat Networks.   **[4]**

    c)   What is Top-to bottom cooled racks?   **[2]**

Q8) Attempt all :

    a)   Explain server security. Explain the various sources of server security.   **[5]**

    b)   Explain SNMP protocol in detail.   **[5]**

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[5521]-503

M.C.A. (Commerce Faculty)

503 : INFORMATION SYSTEM AUDIT

(2013 Pattern) (Credit System) (Semester - V)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

   1)   *All questions are compulsory.*

   2)   *Figures to the right indicate full marks.*

Q1) Answer the following (any 7) :   **[7 × 2 = 14]**

   a)   What do you understand by the term ISA?

   b)   Explain back-up plan.

   c)   What are the objectives of IT Act?

   d)   What is DRP?

   e)   Describe organization controls.

   f)   Describe financial controls.

   g)   What is BCM Information collection Process?

   h)   Explain the key functions of IS Auditor.

   i)   Explain Green IT.

Q2) Answer the following (any 3) :   **[3 × 4 = 12]**

   a)   What is difference between cloud computing & Grid Computing?

   b)   What is digital signature? How it is used for the authentication of electronic record?

   c)   What is the need of controls & audit for information system?

   d)   Discuss various approaches to system development.

Q3) Answer the following (any 3) :   [3 × 4 = 12]

   a)   What activities are part of System Development Life Cycle (SDLC)?
        Explain Briefly.

   b)   What are different types of plans in BCP?

   c)   Describe the audit of BCP/DRP.

   d)   Describe Information security & its objectives.

Q4) Answer the following (Any 3) :   [3 × 4 = 12]

   a)   Explain different is controls based an nature of controls.

   b)   Explain expert system & describe its components.

   c)   Explain need for COBIT 5.

   d)   Discuss the major differences between original IT Act 2000 and ITAA
        2008.

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[5521]-504

M.C.A. (Semester - V)
COMMERCE
504 : Content Management System
(2013 Pattern) (Credit System)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

   1)   *All questions are compulsory.*

   2)   *Draw diagrams wherever necessary.*

Q1) Answer the following :   **[7 × 2 = 14]**

   a)   What is formatting?

   b)   What is web CMS?

   c)   What is converting?

   d)   What is content?

   e)   When do you need a CMS?

   f)   What is repository?

   g)   What is system administration in Joomla?

Q2) Answer the following (any 3) :   **[3 × 4 = 12]**

   a)   What is 'Authoring' from collection system? Explain.

   b)   What is structure? Explain structure by type.

   c)   Explain static website with diagram.

   d)   Explain - content organization start with purpose.

Q3) Answer the following (any 3) :   **[3 × 4 = 12]**

   a)   How to gauge complexity by knowing the number of publications.

   b)   Explain - content is not data.

   c)   What is Monolithic Vs Mix-and-match functionality?

   d)   Create a website for wrist watch showroom and Edit the prices of watches.

P.T.O.

Q4) Answer the following (Any 3) :   **[3 × 4 = 12]**

    a)   Explain publishing templates.

    b)   Explain features of Joomla.

    c)   Explain - CM is Distributing Business value.

    d)   Create a website for mobile and delete the article for any old model of mobile.

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[5521]-505

M.C.A. (Commerce)
506 : MOBILE COMMUNICATION
(2013 Pattern) (Semester - V)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
  1) Neat diagram must be drawn wherever necessary.
  2) All questions are compulsory.
  3) Figures to right side indicate full marks.

Q1) Attempt any seven :   **[7 × 2 = 14]**
  a) What is CSMA/CD.
  b) Define cluster.
  c) Compare Co-COA with FA-COA.
  d) Define Mobile Computing.
  e) List any two disadvantages of snooping TCP.
  f) Define HLR.
  g) What is Activity?
  h) What is Near Terminal Problem?

Q2) Attempt any three :   **[3 × 4 = 12]**
  a) How localization is achieved in GSM.
  b) What are advantages & disadvantages of cellular system.
  c) What is Transaction Oriented TCP?
  d) What is hidden & expose terminal problem? Which scheme solves this problem.

Q3) Attempt any three :   **[3 × 4 = 12]**
  a) Name the requirements of Mobile IP & Justify them.
  b) Explain different types of frequency Hopping Spread Spectrum.
  c) Explain the different types of registration method used by mobile nodes.
  d) Write a short note on selective Retransmission.

Q4) Attempt any three :   [3 × 4 = 12]

    a)   What is handover? Explain with example.

    b)   Explain Bearer services in GSM.

    c)   Explain the working of Mobile TCP.

    d)   Discuss features of Android.

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[5521]-506

M.C.A. (Commerce) (Semester - V)
507 : SYSTEM SIMULATION AND MODELING
(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:
  1) *All questions are compulsory.*
  2) *Figures to the right indicate full marks.*
  3) *Neat labeled diagram must be drawn wherever necessary.*

Q1) Attempt any two of the following :   **[2 × 7 = 14]**

  a)   Explain steps used in simulation study with neat flow diagram.

  b)   Consider the college library as the system of study, explain the following terms system, Entity, Attribute, Activity, state of the system, Event.

  c)   Explain the iterative process of calibration and validation of models with suitable example.

Q2) Attempt any three of the following :   **[3 × 4 = 12]**

  a)   Define output analysis. Explain point estimation and interval estimation.

  b)   Explain poisson process in detail.

  c)   Explain event scheduling algorithm with a suitale example.

  d)   Distinguish between :

   i)   System and environment.

   ii)   Random numbers and random variates.

Q3) Attempt any three of the following :   **[3 × 4 = 12]**

  a)   List the different types of models and explain any two of them.

  b)   Briefly explain desirable features of simulation software.

  c)   Explain the characteristics of a queuing system.

  d)   Explain stochastic nature of out put data with example.

Q4) Attempt any three of the following :   **[3 × 4 = 12]**

   a)   Describe initialization bias in steady state simulation.

   b)   Explain Discrete Distribution with example.

   c)   Write a note on trends in simulation software.

   d)   Explain advantages and disadvantages of simulation.

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[5521]-507

M.C.A. (Semester - V)

COMMERCE

508 : Businesses and Professional Skills

(2013 Pattern)

Time : 3 Hours]   *[Max. Marks :50*

Instructions to the candidates:

   1)   All questions are compulsory.

   2)   Figures to the right indicate full marks.

Q1) What is communication? Explain the benefits of business communication?
                                                                      [10]

OR

What is Business letter? Explain in detail the layout of Business letter.

Q2) Explain importance of Body language in the overall Development of personality.   **[10]**

OR

What do you mean by dress code? Explain the guidelines for professional business attire.

Q3) What is Listening? Explain the barriers in the listening process.   **[10]**

OR

Give the guidelines for conducting a formal meeting.

Q4) Distinguish between voice mail and video conferencing.   **[10]**

OR

What do you mean by manners? Explain role of good manners in business.

                                                                      P.T.O.

Q5) Write tips for an effective presentation. **[10]**

OR

Explain the different types of managerial speeches.

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