Seat
No.

[5261]-101

M.C.A. (First Semester) EXAMINATION, 2017
101 : FUNDAMENTAL OF INFORMATION TECHNOLOGY
(2013 PATTERN)

Time : Three Hours　　　　　　　　　　　**Maximum Marks : 50**

N.B. :— (*i*)　*All* questions are compulsory.

(*ii*)　Figures to the right indicate full marks.

1.　Define the following terms (any *seven*) :　　　　　　　[14]

(*a*)　Explain the term 'Memory'.

(*b*)　What is Software ?

(*c*)　Advantages of Networking.

(*d*)　Explain the term 'Algorithm'.

(*e*)　Define the term 'Computer Language'.

(*f*)　Define the term 'Threads'.

(*g*)　Advantages of 'OFC Cable'.

(*h*)　Decision Table.

2.　Write on (any *three*) :　　　　　　　　　　　　[3×4=12]

(*a*)　What is Assembler ? Explain in detail.

(*b*)　What is an output device ? Explain any *two* with suitable diagram.

(*c*)　Explain the term 'Topology'. Explain Hybrid topology.

(*d*)　Convert the following :

(*i*)　$(10001)_2$ to $(?)_{10}$

(*ii*)　$(256)_{10} = (?)_8$

(*iii*)　$(AC)_{16} = (?)_{10}$

(*iv*)　$(96)_{10} = (?)_2$

3. Write on (any *three*) :   [3×4=12]

   (*a*)   What is flowchart ? Explain advantages and limitations.

   (*b*)   What is Virus ? Explain different types.

   (*c*)   Explain EBCDIC in detail.

   (*d*)   Explain file organization and explain accessing technique.

4. Write on (any *three*) :   [3×4=12]

   (*a*)   Explain digital and analog transmission.

   (*b*)   Differentiate CD and DVD with diagram.

   (*c*)   What is operating system ? Explain its types.

   (*d*)   Differentiate LAN and WAN.

Total No. of Questions—4]   [Total No. of Printed Pages—4

Seat
No.   **[5261]-102**

M.C.A. (Commerce Faculty) (First Semester)

EXAMINATION, 2017

102 : PROGRAMMING IN 'C'

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Assume suitable data, if necessary.

1. Attempt any *seven* :   [7×2=14]

   (*a*) Define :

      (*i*)   identifier

      (*ii*) keywords.

   (*b*) Explain syntax and purpose of :

      (*i*)   printf()

      (*ii*) scanf().

   (*c*) List names of decision-making structures.

   (*d*) What are the ways of calling functions in 'C'?

   (*e*) What is an array ? How are arrays declared in'C' ?

   (*f*) What is structure ?

   (*g*) What is preprocessor in 'C' ?

   (*h*) How is file opened in 'C' ?

                                                        P.T.O.

2. Attempt any *three* : [3×4=12]

    (*a*)   What are operators in 'C' ? Explain any *two* operators in detail.

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

    (*c*)   What is pointer in 'C' ? Explain in detail with proper example.

    (*d*)   What will be the output of the program ?

```
#include<stdio.h>
void  fun(int*,  int*);
int  main()
{
  int  i=5,  j=2;
  fun(&i,  &j);
  printf("%d,  %d",  i,  j);
  return  0;
}
void  fun(int  *i,  int  *j)
{
  *i  =  *i**i;
  *j  =  *j**j;
}
```

3. Attempt any *three* : [3×4=12]

    (*a*)   Write a 'C' program to calculate x * y without using '*' operator.

(*b*) Write a 'C' program to convert given character into upper case and vice versa.

(*c*) Write a 'C' program to accept a number and count its occurrences in an array.

(*d*) What will be the output of the program (sample.c) given below if it is executed from the command line (Turbo C in DOS) ?

cmd>*sample* 1 2 3

```
/* sample.c */
#include<stdio.h>

int main(int argc, char *argv[])
{
        int j;
        j = argv[1] + argv[2] + argv [3];
printf("%d", j);
return 0;
}
```

4. Attempt any *three* :   [3×4=12]

(*a*) What is string ? Explain any *four* standard library functions of string.

(*b*) Write a note on 'union'.

(*c*)   What is file in 'C' ? Explain how files are handled in 'C'.

(*d*)   What will be the output of the program ?

```c
#include<stdio.h>
    struct course

    {

       int courseno;

       char coursename[25];

    };

int main()

{

    struct course c[] = { {102, "Java"},

                  {103, "PHP"},

                  {104, "DontNet"} };

printf("%d", c[1].courseno);

printf("%s\n", (*(c+2)). coursename);

return0;

}
```

Total No. of Questions—4]   [Total No. of Printed Pages—4

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[5261]-103

M.C.A. (Commerce) (First Semester) EXAMINATION, 2017
ELEMENTS OF STATISTICS
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*)   *All* questions are compulsory.

(*ii*)   Figures to the right indicate full marks.

(*iii*)   Use of calculator and statistical table is allowed.

1.   Attempt any *two* of the following :   [2×7=14]

(*a*)   The daily expenditure of 100 families is given below :

Expenditure	No. of Families
20—29	14
30—39	—
40—49	27
50—59	—
60—69	15

If the mode of the distribution is 43.5, then find the missing frequencies.

Also draw the histogram and verify mode graphically.

(*b*)   The following is the dates of runs scored by two batsmen A and B in the series of 5 one-day international cricket matches. Using coefficient of variation (C.V.) find which batsman is more consistent in scoring the runs :

Runs scored by batsman A	120	10	75	48	39
Runs scored by batsman B	75	55	60	50	54

P.T.O.

(*c*)   Compute Karl Pearson's coefficient of correlation for the following data and interpret the result :

Export	Import
10	12
11	14
14	15
14	16
20	21
22	26
16	21
12	15

2.   Attempt any *two* of the following   :   [2×6=12]

(*a*)   Explain the following terms with illustration :

(*i*)   Discrete random variable

(*ii*)   Probability mass function (p.m.f.)

(*iii*) Continuous random variable.

(*b*)   Let X be a discrete r.v. with p.m.f.

$$P(X = x) = kx; \quad x = 1, 2, 3, 4$$

Find the value of *k* and hence mean of X.

(*c*)   State the p.m.f. binomial distribution with parameter *n* and *p*. State its mean and variance. State real life situations of binomial distribution.

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

(*a*)   Define the following terms with illustration :

(*i*)   Null hypothesis

(*ii*)   Alternative hypothesis

(*iii*) Level of significance (l.o.s.)

(*b*)　Explain the procedure of chi-square test of goodness of fit.

(*c*)　The following table shows the classification of 1200 workers in a factory according to the disciplinary action taken by the management and their promotional experience :

Disciplinary action	Promotional Experience	
	Promoted	Not Promoted
Non-offenders	100	258
Offenders	42	800

Test whether the promotional experience is independent of disciplinary action. Use 1% l.o.s.

(*d*)　State the probability density function (p.d.f.) of normal distribution. State its mean and variance. State additive property of two independent normal variates.

(*e*)　If $X \to N(100, 25)$, then find :

$P(X \geq 100)$, $P(X \geq 110)$, $P(X \leq 90)$,

$P(90 \leq X \leq 110)$.

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

(*a*)　Explain the following terms with illustration :

(*i*) Type-I error,

(*ii*) Type-II error.

(*b*)　A manufacturer of ball-bearings guarantees that 2% of items are defective. A sample of 1000 ball-bearings gave 25 defective. Can we say that the product meets guarantee ? Use 5% l.o.s.

(*c*)　Explain the procedure of paired *t*-test. State the situations in which paired *t*-test can be used.

(*d*)　If X → B(n, p) with :

　　(*i*)　E(X) = 18, Var(X) = 12, then find the value of *n* and *p*, also find P(X = 0)

　　(*ii*)　If *n* = 15 and E(X) = 5, then find Var(X).

(*e*)　Obtain the values of mean, median and mode for the following data :

$$9, \ 12, \ 21, \ 18, \ 3, \ 21, \ 12, \ 21, \ 10, \ 21.$$

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[5261]-104

M.C.A. (Commerce) (First Semester) EXAMINATION, 2017

104 : FINANCIAL ACCOUNTING

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 70**

N.B. :— (*i*) Question No. **1** is compulsory. Out of the remaining attempt 3 questions.

       (*ii*) Figures to the right indicate full marks.

1. Prepare Trading, Profit and Loss A/c and Balance Sheet from the following Trial Balance as on 31st Mar. 2016 :   [14]

Trial Balance

Particularls	Dr. Amount	Cr. Amount
Capital		2,71,000
Premises	1,50,000	
Machinery	75,000	
Furniture and Fixture	25,000	
Drawings	5,000	
Cash in Hand	3,000	
Cash at Bank	15,000	
Opening Stock	22,000	

Purchases	71,000	
Wages	9,000	
Rent	5,000	
Sales		1,50,000
Commission		5,000
Salaries	15,000	
Creditors		10,000
Debtors	20,000	
Stationery	12,000	
Misc. Exp.	4,000	
Insurance	4,000	
Carriage outward	1,000	
	4,36,000	4,36,000

Adjustment :

(*i*)   Closing stock was valued at 44,000.

(*ii*)   Depreciate Machinery by 10% and furniture by 20%.

(*iii*)   Insurance Rs. 1,000 is prepaid.

(*iv*)   Salaries are outstanding Rs. 3,000.

2.   Prepare 'Journal' for the following Transactions :

1.   Introduce Cash Rs. 50,000 and Machinery Rs. 25,000 to start the business by Mr. Suresh.

2.   Deposited Rs. 10,000 cash in to Bank of India A/c.

3.   Purchase Machinery and Tools from ABC Co. on credit for Rs. 25,000.

4. Purchase goods Rs. 15,000 from Lumax and Co. on 2 months credit.

5. Sold goods to Sunder Enterprises Rs. 20,000 on credit.

6. Cash withdrawn for personal use Rs. 3,000 to pay for life Insurance.

7. Goods of Rs. 3,000 Cost by fire and Insurance company admitted a claim of Rs. 2,500.

8. Paid wages Rs. 9,000 and Administrative expenses Rs. 5,000.

3. An engineering company purchased a Machinery costing Rs. 90,000 plus Installation charges of Rs. 10,000 as on 1st April 2013. Company decided to provide Depreciation @ 20% p.a. under written Down Value method.

As on 31st March, 2016 Company decided to sold the machinery as they want to replace it with new advance machine. Machinery was sold at Rs. 40,000 and received a cheque prepare Machinery A/c, Depreciation A/c for 2013 to 2016.

4. What do you mean by Financial Accounting ? Explain the users of Financial Accounting.   [12]

5. Explain in brief various concepts and conventions of Financial Accounting.   [12]

6. Write short notes (any *three*) :   [12]

   (*i*)   Importance of Accounting Standards

   (*ii*)   Advantages of Computerised Accounting

   (*iii*) Enterprise Resource Planning (ERP)

   (*iv*)   Money Measurement Concept

   (*v*)   Need for Management Accounting.

Total No. of Questions—7]　　　　　　　　[Total No. of Printed Pages—2

Seat
No.

[5261]-105

M.C.A. (Commerce) (First Semester) EXAMINATION, 2017

105 : PRINCIPLES OF MANAGEMENT

(2013 PATTERN)

Time : Two Hours　　　　　　　　　　　**Maximum Marks : 50**

N.B. :— (*i*) Attempt any *three* from questions **1** to **6**.

(*ii*) Q. No. **7** is compulsory.

(*iii*) Figures to the right indicate full marks.

(*iv*) Draw figures wherever necessary.

1. (*a*) Define Management. Explain the nature and function of management. [7]

(*b*) Whether management is an Art, Science or Profession. Explain. [7]

2. (*a*) Compare and analyze the contribution of F.W. Taylor and Henry Fayol in the field of management. [7]

(*b*) Define System Approach to management. Explain the importance relationship of the approaches. [7]

3. (*a*) Define Organisation. State types of organization structure and explain any *one*. [7]

(*b*) Explain the concept of Motivation. Discuss Maslow's theory and Herzberg's theory. [7]

4. (*a*) What is delegation of authority ? Distinguish between Delegation of Authority and Decentralization. [7]

(*b*) Discuss in detail Responsibility and Quality of Effective Leader of IT Organisation. [7]

5. (*a*) Define the role of Strategic Management. What are the benefits of it to the organisation ? [7]

(*b*) Explain the SWOT analysis process with suitable example of IT professional. [7]

6. (*a*) Explain the concept Management of change. What are the factors responsible for the Change ? [7]

(*b*) Define social Responsibility of Management. Explain the different responsibility of Business. [7]

7. Write short notes on (any *two*) : [8]

(*a*) Span of Management

(*b*) Total Quality Management

(*c*) Stress Management

(*d*) Disaster Management

(*e*) Event Management.

Total No. of Questions—4]　　　　　　[Total No. of Printed Pages—2

Seat
No.

[5261]-106

M.C.A. (First Semester) EXAMINATION, 2017
BUSINESS COMMUNICATION
(2013 PATTERN)

Time : Three Hours　　　　　　　Maximum Marks : 50

N.B. :— (*i*) *All* questions are compulsory.

　　　(*ii*) Figures to the right indicate full marks.

1. What is communication ? Explain in detail the barriers to communication. [14]

Or

What do you mean by verbal communication ? Distinguish between the oral and written communication. [14]

2. What is listening skills ? Explain the types of listening skills. [14]

Or

What do you mean by social media ? Describe the types of social media. [14]

3 (*a*) Explain the layout of business letter. [7]

Or

Draft an enquiry letter on behalf of TCS Limited, Pune to M/s. Ekbote Furniture, East Street Road, Pune regarding office furniture. [7]

(b) Explain the following parts of speech with examples : [7]

(i) Noun   (ii) Adjective   (iii) Verb

Or

Explain the following parts of speech with examples : [7]

(i) Adverb   (ii) Preposition   (iii) Conjunction

4. Write short notes on (any *two*) : [8]

(a) Process of communication

(b) Non-verbal communication

(c) Email Etiquettes

(d) Interview skills.

Seat
No.

[5261]-201

M.C.A. (Commerce) (Second Semester)

EXAMINATION, 2017

CAC-201 : DATA STRUCTURE USING C

(2013 PATTERN)

Time : Three Hours　　　　　　　　　　　Maximum Marks : 50

N.B. :— (*i*) Neat diagrams must be drawn wherever necessary.
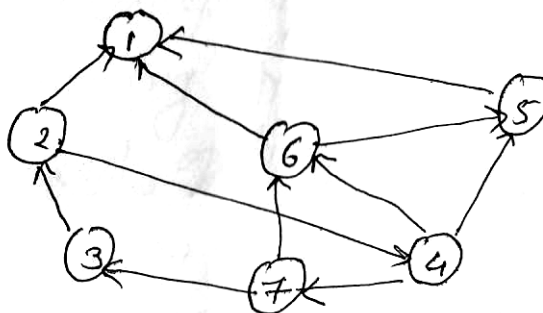
(*ii*) Figures to the right indicate full marks.

1. (A) Answer any *three* of the following : [12]

(*i*) Explain in detail primitive operations on stack.

(*ii*) Compare analysis of all sorting techniques.
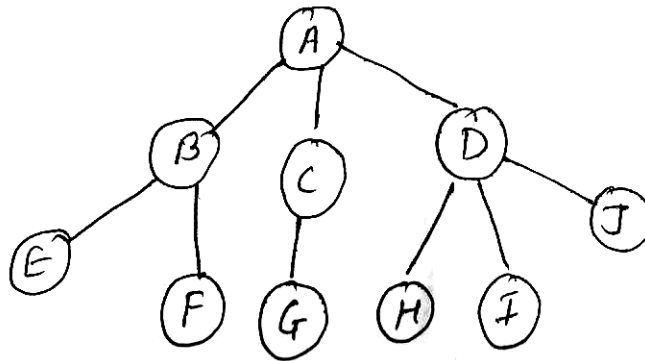
(*iii*) For the diagram below, obtain :

(*a*) In degree and out degree of a graph

(*b*) Its adjacency matrix

(*c*) Its adjacency representation.

(*iv*) Convert the fallowing tree to binary tree step by step :

(B) Write short notes on any *one* of the following : [2]

(*i*)   Adjacency matrix

(*ii*) Real world applications of a graph.

2. Answer any *three* of the following : [12]

(*a*) Explain the concept of spanning tree. What is minimal spanning tree ?

(*b*) Explain concept of hashing and hash table.

(*c*) Write a program to perform basic operations like (insert, update, delete) on linked list.

(*d*) What do you mean by complexity ? Explain concept of time and space complexity.

3. Answer any *three* of the following : [12]

(*a*) Explain different terminologies used in tree.

(*b*) Convert the following expression into prefix and postfix form. Show stack contents at each step.

Expression :

$$((A/(B–C + D)) \times (E – A) \times C)$$

(*c*)   What is binary search tree ? Draw binary search tree for the following data :

                7, 2, 9, 0, 5, 6, 8, 1

(*d*)   Explain concept of sparse matrix.

4.   Answer any *three* of the following :   [12]
(*a*)   Explain Dijkstra's algorithm for finding shortest path.
(*b*)   What do you mean by ADT ? What are advantages and disadvantages of ADT ?
(*c*)   Write a C program to insert and delete node at a given position in a link list.
(*d*)   Write an algorithm for DFS.

Total No. of Questions—4]   [Total No. of Printed Pages—3

Seat
No.

[5261]-202

M.C.A. (Commerce) (Second Semester) EXAMINATION, 2017

OOP's USING C++ (202)

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicates full marks.

1. Attempt any *two* from the following :   [2×7=14]

(*a*) Write a C++ program to accept records on 'n' students and store it in an array of objects. The class STUDENT contains data int. rollno, char name[20], float percentage members. Overload the search function for the following :

(*i*) Search by rollno

(*ii*) Search by name

(*iii*) Search by percentage.

(*b*) Write a C++ program to read the content of file and count the number of characters, words and lines in the file.

(*c*) Write a C++ program using operator overloading to override the <<and>> operators for class DATE whose data members are dd, mm, yy.

2. Attempt any *three* from the following :   [3×4=12]

(*a*) What is the output of the following

\#   include <iostream>

```
        using namespace std;
        int main()
        {
              char str[] = "steve jobs";
              int val = 65
              char ch = 'A'
              count. width (5);
              cout << right;
              cout << val <<endl;
              return 0;
        }
```

(b)   What is the output of the following :
```
#     include <iostream>
      using namespace std;
      int main ()
      {
            int arr [] = {4, 5, 6, 7};
            int * p = (arr +1);
            cout << * arr + 9;
            return 0;
      }
```

(c)   What is the output of the following :
```
#     include <iostream>
      using namespace std;
      int main()
      {
            int n;
            n = 43;
            cout << hex << n << end|;
            return 0;
      }
```

(*d*)   What is the output of the following :

```
#       include <iostream>
        using namespace std;
        int main()
        {
                int n;
                n = -77
                cout.width(4);
                cout << internal << n << endl;
                return 0;
        }
```

3.   Attempt any *three* from the following :   [4×3=12]
(*a*)   Explain the concept of constructor and destructor.
(*b*)   Elaborate the concept of runtime polymorphism with suitable example.
(*c*)   Explain the importance of class template with suitable example.
(*d*)   What is inline function ? Explain it with suitable example.

4.   Write short notes on (any *three*) :   [4×3=12]
(*a*)   Destructors;
(*b*)   String manipulation;
(*c*)   Virtual function
(*d*)   Abstract class.

Seat
No.

[5261]-203

M.C.A (Commerce Faculty) (Second Semester)

EXAMINATION, 2017

203 : ELEMENTS OF MATHEMATICS

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

      (*ii*) Figures to the right indicate full marks.

1. Attempt the following (any *two*) :   [7×2=14]

   (*a*) Define "Equivalence Relation". State and explain the properties of equivalence relation.

   (*b*) Solve the following linear equation system using Gaussian Elimination method.

   $$2x_2 + x_3 = -8$$

   $$x_1 - 2x_2 - 3x_3 = 0$$

   $$-x_1 + x_2 + 2x_3 = 3$$

   (*c*) Explain various Logical connectivities with truth tables.

2. Attempt the following (any *three*) : [4×3=12]

(*a*) Explain the following terms with suitable example :

    (*i*)   Descendent

    (*ii*) Rooted tree

(*b*) Write the following sets in the listing form :

    (*i*)   A = { x/x is an integer and $x^2 < 5$}

    (*ii*) B = { x/x is a square root of 81}

(*c*) Write the steps of Warshall's Algorithm to find the transitive clousure of R.

(*d*) Define contradiction and verify the following is contradiction or not. $(p \Rightarrow q) \wedge (q \Rightarrow p)$

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

(*a*) Explain Euler graph with Euler circuit and path.

(*b*) Examine the validity of the following argument :

$$p \Rightarrow q$$

$$\underline{q \Rightarrow p}$$

$$\therefore \ p \vee q$$

(*c*) Define and explain the Transpose of matrix with suitable example.

(*d*) Define and explain the following terms :

    (*i*)   Inverse Relation

    (*ii*) Universal Relation.

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

    (*a*)   Explain the following with suitable example :

        (*i*)   Union of sets

        (*ii*)   Subset.

    (*b*)   Define and explain Regular Graph with suitable example.

    (*c*)   Find the Adjoint of :

$$A = \begin{bmatrix} 3 & -4 & 1 \\ -3 & 6 & -1 \\ 4 & -8 & 2 \end{bmatrix}$$

    (*d*)   Define and explain the centre of tree with suitable example.

[5261]-203   3

Total No. of Questions—4]   [Total No. of Printed Pages—2

Seat
No.

[5261]-204

MCA (Commerce) (Semester-II) EXAMINATION, 2017
SYSTEM ANALYSIS AND DESIGN
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. (*a*) If customer is within Maharashtra state has sales tax exemption certificate no Sales Tax is levied; otherwise 8% Sales Tax is charged on the sales value. If the customer is outside Maharashtra state 4% Central Sales Tax in place of sales tax is charged. Draw decision tree and decision table.   [6]

(*b*) The Udaya 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.   [8]

2. Attempt the following (any *three*) :   [12]

(*a*) List various characteristics of the system.

(*b*) What is testing ? Explain its principles and objectives.

(*c*) Explain the limitations of SDLC.

(*d*) Explain spiral model used in software development.

P.T.O.

3. Attempt the following (any *three*) : [12]

    (*a*)   Advantages and disadvantages of Prototyping Model.

    (*b*)   Design Input form for Railway Reservation System.

    (*c*)   Explain step-by-step process of implementation.

    (*d*)   Explain Agile process of software development.

4. Write short notes on (any *three*) : [12]

    (*a*)   4GL Model

    (*b*)   Post-Implementation Review

    (*c*)   Interviews

    (*d*)   Data Dictionary

Total No. of Questions—4]   [Total No. of Printed Pages—4

Seat
No.

[5261]-205

MCA (Commerce) (II Semester) EXAMINATION, 2017

205 : DATABASE MANAGEMENT SYSTEM

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*)   *All* questions are compulsory.

(*ii*)   Figures to the right indicate full marks.

(*iii*)   Neat diagrams must be drawn wherever necessary.

(*iv*)   Assume suitable data, if necessary.

1.   (*a*)   Attempt any *three* :   [3×2=6]

(*i*)   Differentiate data and information.

(*ii*)   Define :

(*a*)   Record

(*b*)   File

(*iii*)   List set operations.

(*iv*)   Enlist types of data model.

(*b*)   A company has several employees. At least one employee is assigned to a project, but an employee may be on vacation and not assigned to any projects.

From a given case study list out entities, attributes, primary keys and relationships. Draw an E-R diagram for the same.   [8]

2. Attempt any *three* : [3×4=12]

(*a*) Explain any *four* Aggregate functions with syntax.

(*b*) Write a note on Normalization.

(*c*) Explain transaction state with suitable diagram.

(*d*) What is Automicity ? Explain with example.

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

Employee (Eid, Ename, ecity, Salary, Cid)

Company (Cid, Cname, Ccity)

(*i*) Find the name of employees who works for "Infosys".

(*ii*) Find the list of employees who works in the same city where they live.

(*iii*) Find the list of employees having salary more than 10,000 Rs.

(*b*) Consider the following relations and solve any *four* queries in SQL. [4×2=8]

Student (Rollno, Name, Marks)

Teacher (Tno, Tname, Sub)

Student-Teacher (Rollno, Tno)

(*i*) Create table query for teacher table by adding primary key constraint and Tname should be NOT NULL.

(*ii*) Add qualification attribute in Teacher table.

(*iii*) Insert row in student table.

(*iv*) List the teacher name who are teaching to student "AMAR".

(*v*) Display all details of teachers who is teaching subject "DBMS".

4. Attempt any *three* :   [3×4=12]

(*a*) List capabilities of good DBMS. Explain any *two* of them.

(*b*) Define deadlock. Explain deadlock prevention schemes.

(*c*) Consider the following transaction :

T_1	T_2
READ (X);	READ (Y);
X : = X − 70;	Y : = Y + 10;
WRITE (X);	WRITE (Y);
READ (Y);	READ (Z);
Y : Y + 70;	Z : Z − 5;
WRITE (Y);	READ (X);
	WRITE (Z);
	X : = X − 15;
	WRITE (X);

Give at least 2 non serial schedules that are serializable.

(*d*) The following is the list representing the sequence of events in an interleaved execution of set transactions T_1, T_2, T_3 and T_4 assuming two phase locking protocol.

Time	Transaction	Code
T_1	T_1	Lock (A, X)
T_2	T_2	Lock (B, X)
T_3	T_3	Lock (C, X)
T_4	T_4	Lock (A, S)
T_5	T_1	Lock (C, S)
T_6	T_2	Lock (D, S)
T_7	T_3	Lock (D, X)
T_8	T_4	Lock (B, S)

Construct a wait for graph according to above request. Is there deadlock at any instance ? Justify.

Total No. of Questions—4]　　　　　　　[Total No. of Printed Pages—2

Seat
No.

[5261]-206

MCA (Commerce) (II Semester) EXAMINATION, 2017

206 : HUMAN RESOURCE MANAGEMENT

(2013 PATTERN)

Time : Three Hours　　　　　　　Maximum Marks : 50

N.B. :— (*i*) *All* questions are compulsory.

　　　　(*ii*) Attempt any *two* from each question.

　　　　(*iii*) Figures to the right indicate full marks.

1. (*a*) What is Human Resource Management ? Which challenges are faced by HRM ? [7]

　　(*b*) Define Resource Information System. Explain objective and process of Human Resource Planning. [7]

　　(*c*) Define HRD. Explain scope and importance of HRD. [7]

2. (*a*) Which methods are used for selection of Employees. [6]

　　(*b*) What is recruitment ? What are the goal and sources of recruitment ? [6]

　　(*c*) What is Employees Development ? Explain the concept and methods of employees development. [6]

3. (*a*) What is performance appraisal ? Explain concept and purpose of performance appraisal. [6]

(*b*) What is job analysis ? Which steps are taken for job analysis. [6]

(*c*) Discuss International training and development issue. [6]

4. (*a*) What is collective bargaining ? Explain in detail process of collective bargaining. [6]

(*b*) What is Employees Training ? Explain objectives and importance of Training. [6]

(*c*) What is concept of Union ? Which are reasons of joining union ? [6]

Total No. of Questions—4]　　　　　　[Total No. of Printed Pages—3

Seat
No.

[5261]-301

M.C.A. (Commerce Faculty) (Third Semester)

EXAMINATION, 2017

301 : CORE JAVA

(2013 PATTERN)

Time : Three Hours　　　　　　Maximum Marks : 50

N.B. :— (*i*) *All* questions are compulsory.

　　　　(*ii*) Assume suitable data, if necessary.

1.　Attempt any *seven* :　　　　　　　　　　　　　[7×2=14]

　(*a*)　Name the class which is at the top of exception class hierarchy.

　(*b*)　A class required to handle event on Menu. Which listener should be used ?

　(*c*)　When sub class cannot access super class properties ?

　(*d*)　State the difference between class variable and instance variable.

　(*e*)　Define bytecode.

　(*f*)　What is the purpose of hasNext( ) method ?

　(*g*)　What is interface ?

　(*h*)　List the mandetory attributes of applet tag.

　(*i*)　What is the advantage of using adapter class ?

2. Attempt any *three* : [3×4=12]

    (*a*) Write a java program to accept a string and throw the following Exceptions.

        (*i*) String contains number

        (*ii*) String length is less than 5.

    (*b*) How is destruction of object achieved in java ?

    (*c*) Differentiate iterator and enumerator.

    (*d*) Create a Package College which has two classes teacher and student. Teacher has two methods accept( ) and display( ) and student has two methods accept( ) and display( ). Display the given information of Teacher and Student.

3. Attempt any *three* : [3×4=12]

    (*a*) Define an abstract class staff with protected members id and name. Define a parameterized constructor. Define one sub class office staff with member department. Create *n* objects of office-staff and display details.

    (*b*) Write a java program using (AWT/Swing/Applet) that contains list of countries. Display the selected country in a textbox.

    (*c*) What is container ? Explain different types of containers used in java.

    (*d*) Explain how exception handling can be used in debugging a program ?

4. Attempt any *three* :   [3×4=12]

   (*a*) Write a note on package.

   (*b*) Explain lifecycle of an Applet.

   (*c*) Write a program in java to create a linkedlist. Add elements at the last position and remove elements from the first position of the collection.

   (*d*) Write a simple java program which accepts a string into mixcase and display the given string into reverse case [e.g. HeLlo O/P hElLO].

Seat
No.

[5261]-302

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017

302 : ADVANCED DATABASE MANAGEMENT SYSTEM

(2013 PATTERN)

Time : Three Hours　　　　　Maximum Marks : 50

N.B. :— (*i*)　Attempt any *five* questions out of 8 questions.

(*ii*)　Figures to the right indicate full marks.

1.　Attempt *all* of the following :　　　　　[4+4+2=10]

(*a*)　What is advantage and disadvantage of parallel database?

(*b*)　Explain range partitioning technique in brief.

(*c*)　Differentiate between object identity and foreign key.

2.　Attempt *all* of the following :　　　　　[4+4+2=10]

(*a*)　What is Intra Query Parallelism ? Give its advantages ?

(*b*)　Explain decision tree in detail.

(*c*)　Define the terms :

(*i*)　Spatial data

(*ii*)　Point data.

3. Attempt *all* of the following :   [4+4+2=10]

     (*a*)   What is time stamping ?

     (*b*)   Explain deadlock handling in DBMS.

     (*c*)   Define the terms :

         (*i*)   Boolean Query

         (*ii*)   Ranked Query

4. Attempt *all* of the following :   [4+4+2=10]

     (*a*)   Explain distributed cat log manager.

     (*b*)   Compare Homogeneous and Heterogeneous system.

     (*c*)   List out steps of query processing.

5. Attempt *all* of the following :   [4+4+2=10]

     (*a*)   Explain local wait for graph.

     (*b*)   Write a note on object.

     (*c*)   What is vertical fragmentation ?

6. Attempt *all* of the following :   [4+4+2=10]

     (*a*)   Explain in detail 2–phase commit protocol.

     (*b*)   Compare between OODBMS and ORDBMS.

     (*c*)   What is goal of ADBMS ?

7. Attempt *all* of the following :   [5+5=10]

    (*a*)   Explain majority protocol in brief.

    (*b*)   What is data allocation ? Discuss.

8. Attempt *all* of the following :   [5+5=10]

    (*a*)   Consider the following schema :

            Machine (<u>MNO</u>, MNAME, MCOST)

            Perform horizontal, fragmentation of M/H relation using the

            following predicates :

            P_1 : 6 MCOST <2000

            P_2 : 6MCOST $\geq$ 2000 and MCOST < 5000

            P_3 : 6 MCOST > = 5000

    (*b*)   What do you mean by concurrency control ? Explain locking

            methods in detail.

Total No. of Questions—4]   [Total No. of Printed Pages—3

Seat
No.

[5261]-303

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017

303 : OBJECT ORIENTED SOFTWARE ENGINEERING

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*)   *All* questions are compulsory.

(*ii*)   Figures to the right indicate full marks.

(*iii*)   Neat diagram must be drawn wherever necessary.

1.   Attempt any *seven* of the following :   [2×7=14]

(*a*)   Which symbol is used to show notes ?

(*b*)   Define an elaboration phase during analysis.

(*c*)   Define object-oriented testing.

(*d*)   What do you mean by concurrency ?

(*e*)   What is use of state chart diagram ?

(*f*)   What is purpose of use case view ?

(*g*)   Define binary association.

(*h*)   Define Dependency.

2. Attempt any *four* of the following : [3×4=12]

    (*a*)   Explain Agile Unified Process in detail.

    (*b*)   Differentiate between white box testing and black box testing.

    (*c*)   Explain Class diagram with an example.

    (*d*)   Explain "Object-oriented design Jacobson method" with suitable diagram.

    (*e*)   Explain different types of relationship with an example.

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

    (*a*)   Explain Deployment diagram with an example.

    (*b*)   Explain UML architecture in detail.

    (*c*)   Differentiate between Alpha and Beta testing.

    (*d*)   How are test cases designed for object-oriented software.

4. Attempt the following : [6×2=12]

The passenger is required to fill in a reservation form giving details of his journey. The counter clerk ensures whether the place is available. If so, entities are made in the register, tickets are prepared, amount is computed and cash is accepted. A booking statement is prepared in triplicate from the reservation register. One copy of it is retained as office copy, the other is pasted on the compartment and then is pass on to the train conductor. Besides booking statement, cash statement is prepared at the end of each shift.

Read the case study and draw the following diagram :

(*i*)   Use case diagram

(*ii*) Sequence diagram

Or

(*a*)   Draw Component and Activity diagram for Hospital Management System by considering different types of scenarios.

(*b*)   Write short notes on the following :

(*i*)   SDLC

(*ii*) Iterative Development Process

(*iii*) Data Management Component.

Total No. of Questions—4]　　　　　　[Total No. of Printed Pages—2

Seat
No.

[5261]-304

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017

304 : NETWORK OPERATIONS

(2013 PATTERN)

Time : Three Hours　　　　　　　　　　**Maximum Marks : 50**

N.B. :— (*i*) Attempt *all* question.

　　　　(*ii*) Figures to the right indicate full marks.

1. (*a*) Solve any *three* :　　　　　　　　　　　　[3×4=12]

　　　　(*i*) Explain Mesh Topology

　　　　(*ii*) Explain OSI reference model with diagram.

　　　　(*iii*) Write note on Pipelining.

　　　　(*iv*) Briefly explain CSMA/CD.

　　(*b*) Solve any one :　　　　　　　　　　　　　[1×2=2]

　　　　(*i*) State the applications of computer network.

　　　　(*ii*) Define Bandwidth, Jitter.

2. Solve any *three* :　　　　　　　　　　　　　　[3×4=12]

　　(*a*) Explain Design issues of the Layers.

　　(*b*) State the characteristics of Line coding. Explain NRZ method.

　　(*c*) Explain Stop and wait ARQ for noisy channel.

　　(*d*) Compare virtual circuit and Datagram.

3. Solve any *three* :   [3×4=12]

(*a*) Explain Message switching with its advantages and disadvantages.

(*b*) Write a note on IPv4 protocol.

(*c*) What is meant by channelization ? Explain in short FDMA.

(*d*) Differentiate between LAN and WAN.

4. Solve any *three* :   [3×4=12]

(*a*) Explain logical addressing. Give IPv6 address structure.

(*b*) Explain unguided transmission media with its types.

(*c*) Explain the functionality of network layer.

(*d*) We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz. How many signal level are required for this.

Total No. of Questions—4] [Total No. of Printed Pages—3

Seat
No.

[5261]-305

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017

306 : OPERATING SYSTEM

(2013 PATTERN)

Time : Three Hours **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Neat diagram must be drawn whenever necessary.

1. Attempt the following (any *seven*) : [7×2=14]

(*a*) Define Swap in and Swap out.

(*b*) What is Long—Term Scheduler ?

(*c*) Define Transfer Time.

(*d*) What is Resource Allocation Graph ?

(*e*) Define Dynamic Loading.

(*f*) What are the operations performed on directory ?

(*g*) State the types of semaphore.

(*h*) What is CPU Utilization ?

2. Attempt the following (any *three*) : [3×4=12]

(*a*) Calculate Average Turn-around time and average waiting for

the following by using :

(i)   Non-Pre-emptive SJF

(ii)   Round Robin (RR)

Process	Burst time	Arrival time
P1	3	1
P2	2	2
P3	5	0

(b)   Explain segmentation with paging.

(c)   Define File allocation. Explain linked allocation method.

(d)   Describe process model with diagram.

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

(a)   Define Deadlock. Explain Deadlock prevention method.

(b)   Explain Reader-writer's Problem.

(c)   Describe the term application of I/O Interface in detail.

(d)   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

assume there are 3 free frames. Find page fault by using :

(i)   Optimal page replacement

(ii)   LRU.

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

(a)   What are the conditions for critical section ? Explain it.

(b)   Write note on Real time systems.

(*c*) Explain sequential access method of file.

(*d*) Consider the following snapshot of system. A system has 5 processes A through E and four resources type R_1 through R_4.

	Allocation					Max			
	R_1	R_2	R_3	R_4		R_1	R_2	R_3	R_4
A	3	0	1	1	A	4	1	1	1
B	0	1	0	0	B	0	2	1	2
C	1	1	1	0	C	4	2	1	0
D	1	1	0	1	D	1	1	1	1
E	0	0	0	0	E	2	1	1	0

Available Resources			
R_1	R_2	R_3	R_4
1	0	2	0

Answer the following questions using Banker's algorithm :

(*i*) What are contents of matrix need ?

(*ii*) Is the system in a safe stage ?

Total No. of Questions—4]　　　　　　[Total No. of Printed Pages—2

Seat
No.

[5261]-306

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017

M-COMMERCE

(2013 PATTERN)

Time : Three Hours　　　　　　　　**Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Neat diagram must be drawn wherever necessary.

1. Answer the following (any *two*) :　　　　　　　　[14]

(*a*) Define M-Commerce. Explain any *two* applications with example.

(*b*) Explain any *three* Communication Technology in Mobile Commerce.

(*c*) Explain System architecture of transaction database access for M-Commerce Client.

2. Answer the following (any *three*) :　　　　　　　　[12]

(*a*) Define M-Commerce life cycle in detail.

(*b*) Explain data reconciliation in global transaction.

(*c*) Explain wireless LAN Network in Mobile Commerce System.

(*d*) Explain HTML and XML information exchange technology.

3. Answer the following (any *three*) : [12]

(*a*) Explain content development in Mobile Commerce Services.

(*b*) Explain difference between M-Commerce and E-Commerce.

(*c*) Explain base station server concept in mobile environment.

(*d*) Explain Mobile ticketing Applications with example.

4. Write short notes on (any *three*) : [12]

(*a*) Mobile Marketing and Advertising

(*b*) GSM

(*c*) Proactive Service Management

(*d*) Mobile client disconnection in global environment

Total No. of Questions—7]   [Total No. of Printed Pages—1

Seat
No.

[5261]-307

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2017
308 : MANAGEMENT INFORMATION SYSTEM
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) Solve any *five* questions.
             (*ii*) Figures to the right indicate full marks.

1. What is Decision Making ? Explain decision making process in detail. [10]

2. Explain OOSAD development life cycle in detail. [10]

3. Define System. Distinguish MIS and System Analysis in detail. [10]

4. Explain 'Long range plans in MIS' in detail. [10]

5. Explain the term Information. Explain in detail classification of information. [10]

6. What is object orientation ? Explain object oriented analysis in detail. [10]

7. Write in detail the concept of system organization. [10]

Total No. of Questions—4]   [Total No. of Printed Pages—2

Seat
No.

[5261]-401

M.C.A. Commerce (Fourth Semester) EXAMINATION, 2017
401 : ADVANCE JAVA
(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks for the question.

1. Attempt any *seven* from the following :   [7×2=14]

(*a*) What is Beans ?

(*b*) What is use of forName() method ?

(*c*) Differentiate between sleep() and interrupt() method.

(*d*) What is Session ?

(*e*) What are directives in JSP ?

(*f*) What is lookup() method ?

(*g*) What is thread priority.

(*h*) What is Metadata ?

2. Attempt any *three* from the following :   [3×4=12]

(*a*) Explain thread life-cycle with suitable diagram.

(*b*) Explain stub and skeleton ?

(*c*) Write a Servlet program to display record from student table. Take suitable structure of student table

(*d*) Write a JDBC program to insert a record in Employee table (empid, name, dept, sal).

P.T.O.

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

(*a*)   What is session ? How to handle session in servlet programming ? Explain with example.

(*b*)   What is JAR file ? Write the steps to create JAR File.

(*c*)   Write JSP program to display welcome message as per server timing.

(*d*)   Write JDBC program to display employees whose name is starting with A ?

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

(*a*)   Explain JSP tags with suitable examples.

(*b*)   Explain different types of statements in JDBC.

(*c*)   Write a File Server Program which accepts file name from client and displays its content on client machine.

(*d*)   Write a thread program to display prime numbers between 1 to 1000 after every 5 second.

Total No. of Questions—4]   [Total No. of Printed Pages—2

Seat
No.

[5261]-402

M.C.A. (Fourth Semester) EXAMINATION, 2017
402 : VISUAL PROGRAMMING
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) *All* questions carry equal marks.

1. Answer *all* of the following :   [7×2=14]

(*a*) Define a viewport ?

(*b*) What are Keystrokes?

(*c*) What is Input focus ?

(*d*) What is ODBC ? List its elements.

(*e*) WM-timer is a low priority message. Justify

(*f*) What are different pen styles ?

(*g*) What is a message loop?

2. Answer any *three* of the following.   [3×4=12]

(*a*) What alteration is necessary for the message loop if modeless dialog box is used ?

(*b*) Write a short note note on Hungarian motation.

(*c*) Explain non-client area mouse messages.

(*d*) Write a short note on Accelerators.

P.T.O.

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

   (*a*) Distinguish between Pen and Brush.

   (*b*) What is a caret ? Explain the caret functions.

   (*c*) Explain device context and various methods to get a handle to device context.

   (*d*) What is registration of class ? Why is it necessary ?

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

   (*a*) Write a short note on virtual keys.

   (*b*) Display caret at top left position in client area, use arrow keys to move caret left, right, up and down one position.

   (*c*) What do you mean by "capturing of mouse"? Explain the API functions related to mouse capture.

   (*d*) Write a window procedure to scroll string "Hello" in client area when the right mouse button is pressed and erased when it is released.

Total No. of Questions—4]   [Total No. of Printed Pages—3

Seat
No.

[5261]-403

M.C.A. (Commerce) (Fourth Semester) EXAMINATION, 2017

CS-403 : DISTRIBUTED DATABASE SYSTEM

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. Attempt any *seven* :   [7×2=14]

(*a*) What is Autonomy ? Explain different types of Autonomy.

(*b*) Define concept of serializabilty in a DDBMS.

(*c*) Define :

(1) Network Transparency

(2) Replication Transparency.

(*d*) State components of Query Optimizer.

(*e*) Which are the types of transaction ?

(*f*) What are correctness rules for fragmentation ?

(*g*) Differentiate between tightly coupled and loosely coupled multiprocessor system.

(*h*) State 2 LRM commands.

2. Attempt any *three* :   [3×4=12]

(*a*) Explain promises of DDBMS.

(*b*) Write a note on "MDBS without GCS".

(*c*) Write a note on INGRES Algorithm.

(*d*) Write a note on generic layering scheme for Distributed query processing.

3. Attempt any *three* :   [3×4=12]

(*a*) Write a note on Hierarchical deadlock detection.

(*b*) Write a note on Out-of-Place-Order.

(*c*) Explain Two phase Locking and Strict Two phase Locking protocol.

(*d*) What is workflow ? Explain types of workflow.

4. Attempt any *three* :   [3×4=12]

(*a*) Consider the following relational schema :
Book(Bno, Bname, Pubname, Price)
Auhor(Ano, Aname, City)
B_A(Bno,Ano)
Construct optimized operator tree for the following query.
Select Aname, Bname
from Book, Author, B_A
where Book. Bno=B K.Bno
and Author.Ano =B_K.Ano
and Pubname="Vision" and Price>200
and City="Pune"

(*b*) Consider the following relational schema :
Emp(Eno,Ename,Title) & Pay (Title, Sal)
Let P1 : Sal<30000 and P2 : Sal >= 30000 be two predicates.
Perform a horizontal fragmentation of relation PAY to obtain fragments PAY1 and PAY2.

(*c*)   Consider   relation PROJ(Pno, Pname, Budget) :

Assume that PROJ relation is horizontally fragmented as

$PROJ_1$ =   6 $Budget_{<200000}$ (PROJ)

$PROJ_2$ =   6 $Budget_{<=200000}$ ^ $Budget_{<=500000}$ (PROJ)

$PROJ_3$ =   6 $Budget_{>500000}$ (PROJ)

Draw an optimized operator tree for the following query. Convert the generic tree into reduced tree considering the fragmentation format.

Select Pname from PROJ where Budget >600000

(*d*)   Consider the following relations and draw query graph for given query :

Emp(Eno, Ename,Title)

Proj(Pno, Pname, Budget)

Asg (Eno, Pno, Resp, Dur))

Select Ename, Resp

From Emp, Asg, Proj

Where Emp.Eno=Asg.Eno

And Asg.Pno= Proj.Pno And Pname-"CAD/CAM" And Dur = 24

And Title = "Engineer"

Total No. of Questions—8]   [Total No. of Printed Pages—2

Seat
No.

[5261]-404

MCA (Fourth Semester) EXAMINATION, 2017

404 : WEB TECHNOLOGIES

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*) Attempt any *five* questions.

(*ii*) Figures to the right indicate full marks.

1.   Answer the following :

(*a*)   Explain HTML form tags in detail.   [5]

(*b*)   Explain CSS border and margin properties.   [5]

2.   Answer the following :

(*a*)   Explain Javascript identifiers in detail.   [5]

(*b*)   Explain variables and data types in VBScript.   [5]

3.   Answer the following :

(*a*)   Explain XML - SOAP.   [5]

(*b*)   Create HTML page and use table, frame and link tag. [5]

4.   Answer the following :

(*c*)   Write a Javascript to find maximum of *three* numbers.   [5]

(*d*)   Write a VBScript code to find factorial of given number.   [5]

5. Answer the following :

(*a*) Explain DOM parses in XML. [5]

(*b*) Explain ordered and unordered list in detail. [5]

6. Answer the following :

(*a*) Explain JavaScript Math and String functions. [5]

(*b*) Explain PHP and Web server architecture model. [5]

7. Answer the following :

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

(*d*) What is URL ? Explain in detail. [5]

8. Answer the following :

(*a*) Explain basic HTML tags in detail. [5]

(*d*) Write steps for installing PHP. [5]

Total No. of Questions—4]   [Total No. of Printed Pages—2

Seat
No.   **[5261]-405**

MCA (Commerce Faculty) (IV Semester) EXAMINATION, 2017

406 : IT PROJECT MANAGEMENT

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*)   *All* questions are compulsory.

(*ii*)   Figures to the right indicate full marks.

1.   Attempt the following (any *seven*) :   [7×2=14]

(*a*)   What are the basic responses to risk ?

(*b*)   Define MTTF.

(*c*)   What is Project Management ?

(*d*)   Define Pareto Analysis.

(*e*)   What is Staff Acquisition ?

(*f*)   State the objective of overall change control.

(*g*)   What is project plan execution ?

(*h*)   Define :

(*i*)   Legitimate power

(*ii*)   Expert power.

(*i*)   What do you mean by defect management ?

2. Attempt the following (any *three*) : [3×4=12]

    (*a*)   What are the qualities of project manager ?

    (*b*)   Write a note on resource loading and levelling.

    (*c*)   Explain outputs of quality control process.

    (*d*)   What are communication management plan content ?

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

    (*a*)   Explain project life-cycle.

    (*b*)   Write a note on organizational breakdown structure.

    (*c*)   State role and importance of stakeholders in a project.

    (*d*)   Explain cost budgeting and cost control.

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

    (*a*)   What are the output of Risk Response Development ?

    (*b*)   Explain various contents of overview of project.

    (*c*)   What factors affect the quality of information technology project ?

    (*d*)   Explain Delphi techniques.

Seat
No.

[5261]-406

M.C.A. (Commerce Faculty) (IV Sem.) EXAMINATION, 2017

407 : CYBER LAW AND INFORMATION SECURITY

(2013 PATTERN)

Time : Three Hours　　　　　　　　**Maximum Marks : 50**

N.B. :— (*i*)　*All* questions are compulsory.

(*ii*)　Neat diagrams must be drawn wherever necessary.

(*iii*)　Figures to the right indicate full marks.

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

(*a*)　Cryptanalysis

(*b*)　Trade Marks

(*c*)　Firewall

(*d*)　Information Technology Act, 2000

(*e*)　Asymmetric Keys

(*f*)　Copyright

(*g*)　SSL Record Format

(*h*)　Duties of subscribers.

2.　Discuss any *three* of the following :　　　　　　　[3×4=12]

(*a*)　What is Transposition Cipher.

(*b*)　Explain the status of digital signature under Indian Law.

(*c*)　What are the basic principles of Public Key Cryptosystem ?

(*d*)　Explain the ESP Packet format.

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

   (*a*)   Explain Steganography.

   (*b*)   Explain RSA Algorithm with example.

   (*c*)   Explain Electronic Governance.

   (*d*)   Explain IP Security Architecture.

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

   (*a*)   Explain Playfair Cipher Technique of Encryption with example.

   (*b*)   What is role of Controller of Certifying Authorities ?

   (*c*)   Explain the procedure of filing of patents with suitable example.

   (*d*)   Explain Securing Electronic Records.

M.C.A. (Commerce Faculty) (IV Sem.) EXAMINATION, 2017

408 : ADVANCED NETWORKING

(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :— (*i*)   Answer any *five* questions.

         (*ii*) Figures to the right indicate full marks.

1.   Attempt the following :   [4+4+2=10]

   (*a*)   Write a note on intra- and inter-domain routing.

   (*b*)   Explain the fragmentation process of IPV4 datagram.

   (*c*)   In the standard Ethernet, if maximum propagation time is
          25.6 µs, what is the minimum size of frame ?

2.   Attempt the following :   [4+4+2=10]

   (*a*)   Write a note on structure of a router.

   (*b*)   What is Kerberos ? State the parties involved in it.

   (*c*)   List the strategies of transition from IPv4 to IPv6.

3.   Attempt the following :   [4+4+2=10]

   (*a*)   Write a note on IP security.

(*b*) Which are the key participants in SET ?

(*c*) List the methods for packet forwarding in routing.

4. Attempt the following : [4+4+2=10]

(*a*) Write a note on distance vector router.

(*b*) Write a note on voice over IP.

(*c*) List *four* key principles of security.

5. Attempt the following : [4+4+2=10]

(*a*) What would be the transformation of message 'I WANT TO MEET YOU' using Rail Fence technique ?

(*b*) Write a note on Cipher Block Chaining (CBC) mode.

(*c*) Discuss any one passive attack.

6. Attempt the following : [4+4+2=10]

(*a*) Explain TCP/IP protocol model in brief.

(*b*) Write a note on 3D secure protocol.

(*c*) Define :

(*i*) Plain text

(*ii*) Cipher text.

7. Attempt the following : [5+5=10]

(*a*) List the different technologies used to connect two remote devices in point to point WAN. Explain one in detail.

(*b*) Alice and Bob want to establish a secret key using the Diffie-Hellman key exchange protocol using $n = 11$, $g = 5$, $x = 2$ and $y = 3$. Find the values A and B and the secret key.

8. Attempt the following : [5+5=10]

(*a*) Write a note on ICMPv4 package.

(*b*) Describe how cross-certification is useful.

Total No. of Questions—8]   [Total No. of Printed Pages—2

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[5261]-501

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2017
501 : ADVANCED WEB PROGRAMMING
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

N.B. :   (*i*)   Attempt any *five* questions.
        (*ii*) Figures to the right indicate full marks.

1.   (*a*)   State the difference between Abstract class and interface. [4]
    (*b*)   Explain operator overloading in C# with suitable example. [4]
    (*c*)   What are ref and out parameters in C# ?   [2]

2.   (*a*)   Explain Application Life Cycle for ASP.Net.   [4]
    (*b*)   What is Global.asax file in ASP.Net ? Explain its usage. [4]
    (*c*)   State the different types of validation control used in
         ASP.Net.   [2]

3.   (*a*)   What are master pages ? Why do we need Master pages ? [4]
    (*b*)   What is query string ? Explain with an example.   [4]
    (*c*)   What are cookies ? List its types.   [2]

4.   (*a*)   List and explain data providers used in ADO.Net.   [4]
    (*b*)   Write a ASP.Net web application to display records of Doctor
         (dno, Dname, Design, address) table in Grid view control. [4]
    (*c*)   State the difference between DataReader and DataAdapter. [2]

5.   (*a*)   Write the steps for consuming the web services.   [4]

P.T.O.

(*b*) Write a web application in ASP.Net using C# to accept the student information and on click on submit button entered information should get displayed into next page. [4]

(*c*) Write a short note on WSDL document. [2]

6. (*a*) Write a short note on AJAX security. [4]

(*b*) Write a web application in ASP.Net using C# to blink the text (using Timer Control). [4]

(*c*) List server side JSON Tools. [2]

7. (*a*) Explain ASP.Net framework with suitable diagram. [5]

(*b*) Write a program in C# to design a class Employee (eno, ename, mobile) with properties for all the fields and method calculate _salary(). Inherit class Contract Employee(hours, Rate_per_unit) and SalariedEmployee(deduction, DA, HRA, PF). Override method Calculate_Salary() in both the derived classes. [5]

8. (*a*) Explain properties in C# with suitable example. [5]

(*b*) What is exception handling ? Explain with suitable example. [5]

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No.

[5261]-502

MCA (Commerce) (Fifth Semester) EXAMINATION, 2017

502 : DATA CENTER TECHNOLOGIES

(2013 PATTERN)

Time : Three Hours　　　　　　Maximum Marks : 50

N.B. :— (*i*)　Out of **8** questions attempt any **5**.

　　　　(*ii*)　Draw neat labelled diagram wherever necessary.

1.　Attempt *all* :

　(*a*)　State the causes of Planned and Non-Planned downtime.[4]

　(*b*)　How good designed data centre takes care of power
　　　　distribution ?　　　　　　　　　　　　　　　[4]

　(*c*)　What is Plenum ?　　　　　　　　　　　　　　[2]

2.　Attempt *all* :

　(*a*)　Write a note on Data centre pre-requisite.　　　[4]

　(*b*)　Explain Network Infrastructure needed in Data Center.　[4]

　(*c*)　Explain the following terms :　　　　　　　　[2]

　　　(*i*)　Mean Time Between Failures (MTBF)

　　　(*ii*)　Mean Time to Repair (MTTR)

3. Attempt *all* :

(*a*) Explain the terms : [4]

    (*i*) Web server Farms

    (*ii*) Persistent connection

(*b*) Explain the working of the cold liquid air conditioning system. [4]

(*c*) What are different levels of availability ? [2]

4. Attempt *all* :

(*a*) Explain : [4]

    (*i*) Power Conditioning

    (*ii*) Generators.

(*b*) What are the drawbacks of complex cluster configuration ? [4]

(*c*) What is Co-Location Data Center ? [2]

5. Attempt *all* :

(*a*) What is in-band and out-of-band monitoring ? [4]

(*b*) Explain briefly physical and logical security of data centre. [4]

(*c*) What is automation? List the automation tools. [2]

6. Attempt *all* :

(*a*) State the objectives of HVAC Systems. [4]

(*b*) Explain the following : [4]

    (*i*) Plenum

    (*ii*) Aisles

(*c*) Explain the Any-to-Any Failover Model. [2]

7. Attempt *all* :

    (*a*)   Explain Designer Dresses case study and give the Data Center Design for it.   [5]

    (*b*)   List out different cluster components. Explain any *three* in detail.   [5]

8. Attempt *all* :

    (*a*)   What is load balancing ? Explain different terms used in load balancing.   [5]

    (*b*)   Give the Security Guidelines for UNIX Systems.   [5]

Total No. of Questions—4] [Total No. of Printed Pages—2

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[5261]-503

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2017

503 : INFORMATION SYSTEM AUDIT

(2013 PATTERN)

Time : 3 Hours **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. Answer the following (any *seven*) : [7×2=14]

(*a*) What is corporate governance ?

(*b*) What do you understand by the term ISA ?

(*c*) Explain cyber frauds.

(*d*) What are the components of Information system.

(*e*) What is the need for IT Audit ?

(*f*) Explain back-up plan.

(*g*) What are the objectives of IT Act ?

(*h*) What is cloud computing ?

(*i*) Explain types of system

(*j*) What is DRP ?

2. Answer the following (any *three*) : [3×4=12]

(*a*) Explain COBIT 5 framework in detail.

(*b*) Explain concept of governance and need of IT governance.

(*c*) What are the Information system control techniques ? Explain categories of control.

(*d*) Explain different types of cyber frauds.

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

(*a*) Why do we have to protect information system ?

(*b*) Responsibilities and functions of information system auditor.

(*c*) What is audit evidence ? Explain different methods of collecting audit evidence.

(*d*) What is Business continuity planning and Disaster Recovery Planning ?

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

(*a*) How does Auditing of BCP and DRP is performed ?

(*b*) Explain system development methodologies.

(*c*) Explain Electronic signature and Digital signature.

(*d*) Benefits of Mobile computing.

Total No. of Questions—4]   [Total No. of Printed Pages—2

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[5261]-504

M.C.A. (Commerce)   (Fifth Semester) EXAMINATION, 2017
504 : CONTENT MANAGEMENT SYSTEM
(2013 PATTERN)

Time : Three Hours   **Maximum Marks : 50**

***N.B.* :—** (*i*) *All* questions are compulsory.
          (*ii*) Figures to the right indicate full marks.

1. Attempt the following :   [14]

(*a*) What is format ?

(*b*) When you need a CMS ?

(*c*) What is Authoring ?

(*d*) What is data ?

(*e*) What is repository ?

(*f*) What is context ?

(*g*) What is static website ?

2. Attempt the following (any *three*) :   [12]

(*a*) What is structure ? List its types and explain structure by purpose.

(*b*) How to gauge complexity by knowing no. of publications ?

(*c*) Content is named information. Explain.

(*d*) What is web CMS ? Explain with diagram.

P.T.O.

3. Attempt the following (any *three*) : [12]

(*a*) What are the features of Joomla ? Explain.

(*b*) Explain publishing templates from publishing system.

(*c*) What is monolythic *Vs.* mix and match formatting ?

(*d*) Write steps to create a website in joomla for receipes and insert images.

4 Attempt the following (any *three*) : [12]

(*a*) Explain converting from collection system with diagram.

(*b*) Justify—CM is collection, management and publishing.

(*c*) Explain—Content is not data.

(*d*) Write steps to create a website for Toys shop and add Meta tag to it.

Total No. of Questions—4]　　　　　　[Total No. of Printed Pages—2

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[5261]-505

M.C.A. (Commerce)　(Fifth Semester) EXAMINATION, 2017
506 : MOBILE COMMUNICATION
(2013 PATTERN)

Time : Three Hours　　　　　　**Maximum Marks : 50**
N.B. :— (*i*)　Neat diagram must be drawn wherever necessary.
　　　　(*ii*)　*All* questions are compulsory.
　　　　(*iii*)　Figures to the right side indicate full marks.

1.　Attempt any *seven* :　　　　　　　　　　　[7×2=14]

　　(*a*)　What is cluster ?

　　(*b*)　Define Mobile station ?

　　(*c*)　Why is no modification required in UDP for mobile n/w ?

　　(*d*)　Define Co-CoA.

　　(*e*)　What is Multipath propagation ?

　　(*f*)　What is Activity ?

　　(*g*)　What problems of HTTP can WSP solve ?

　　(*h*)　Define Soft Handover.

2.　Attempt any *three* :　　　　　　　　　　　[3×4=12]

　　(*a*)　How is mobile communication useful in vehicle ?

　　(*b*)　Explain service life cycle in Android.

　　(*c*)　Write a short note on snooping TCP.

　　(*d*)　What is hidden and expose terminal problem ? Which scheme
　　　　　solve this problem.

3. Attempt any *three* : [3×4=12]

   (*a*)   How does registration of mobile node occur ?

   (*b*)   What are the advantages and disadvantages of MACA ?

   (*c*)   What are the goals of Mobile IP ?

   (*d*)   Explain GPRS architecture.

4   Attempt any *three* : [3×4=12]

   (*a*)   Discuss components of Android Application.

   (*b*)   What is WTLS ? Explain the services offered by it.

   (*c*)   How are encryption and authentication done in GSM ?

   (*d*)   Explain any *one* IP micro-mobility protocol with its advantage and disadvantage.

Total No. of Questions—4] [Total No. of Printed Pages—2

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[5261]-506

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2017

507 : SYSTEM SIMULATION AND MODELING

(2013 PATTERN)

Time : Three Hours **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw neat labeled diagram whenever necessary.

(*iii*) Figures to the right indicate full marks.

1. Attempt any *two* of the following : [2×7=14]

(*a*) What is system ? Explain component of system with example.

(*b*) Explain discrete distribution with example.

(*c*) List different methods of random number generation. Explain any *two* of them.

2. Attempt any *three* of the following : [3×4=12]

(*a*) Explain stochastic nature of output data with example.

(*b*) Explain data collection with example.

(*c*) What is queuing system ? Explain queuing notations.

(*d*) Write note on object oriented simulation.

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

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

    (*b*)   Define the terms system, entity, attribute and activity. Give examples of above terms taking hospital system.

    (*c*)   Write a note on software packages of simulation

    (*d*)   Explain in detail continuous distribution with example.

4. Attempt any *two* of the following :   [6×2=12]

    (*a*)   What are random numbers ? Explain properties of random numbers.

    (*b*)   Explain the simulation of telephone system.

    (*c*)   Explain the simulation of Computer system.

Total No. of Questions—5] [Total No. of Printed Pages—2

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[5261]-507

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2017

508 : BUSINESS AND PROFESSIONAL SKILLS

(2013 PATTERN)

Time : Three Hours **Maximum Marks : 50**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. Explain the benefits of business communication. [10]

Or

What is verbal communication ? Explain the methods of verbal communication. [10]

2. Explain importance of Body Language in the Overall Development of Personality. [10]

Or

What do you mean by Culture Awareness ? Give its importance. [10]

3. What is Listening ? Explain the barriers in the Listening Process.[10]

Or

Explain in detail the different types of managerial speeches. [10]

P.T.O.

4 Differentiate between formal and semiformal dress code. [10]

Or

Explain in detail how to write curriculum vitae (Resume) and covering letter. [10]

5. How to prepare agenda of meeting and explain in detail about minutes ? [10]

Or

Explain in detail internal communication. [10]