Seat No. ____

[5361]-101

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

EXAMINATION, 2018

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

(a)   Octal number system

(b)   Track ball

(c)   Digital Transmission

(d)   OR Logic Gate

(e)   Application sotware

(f)   Assembly Language

(g)   Explain the following DOS commands :

(i)   del

(ii)   copy.

(h)   MAN.

2. Attempt any *three* :   [3×4=12]

    (*a*)   Write an alogrithm to calculate x^4. Also draw flowchart.

    (*b*)   What is topology ? Explain star topology.

    (*c*)   Explain Software Development Activities.

    (*d*)   Perform the following Binary Arithmetic :

        (*i*)   Add binany numbers 1010110 and 1011010

        (*ii*)   Subtract 011011 from 110111.

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

    (*a*)   Architecture of 8085 microporcessor

    (*b*)   Decision tree

    (*c*)   Liquid crystal display

    (*d*)   Synchronization.

4. Attempt any *three* :   [3×4=12]

    (*a*)   Explain the working of time sharing system.

    (*b*)   What is computer network ? Explain the types of computer network.

    (*c*)   What is communication protocol ? Explain the roles of communication protocol.

    (*d*)   List external storage devices. Explain any *one.*

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

Seat
No.

[5361]-102

M.C.A. (Commerce) (I-Semester) EXAMINATION, 2018

102 : PROGRAMMING IN 'C'

(2013 PATTERN)

Time : Three Hours　　　　　　　　　　**Maximum Marks : 60**

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

　　　　(*ii*)　Assume Suitable data if necessary.

1.　Attempt any *seven* from the following

　(*i*)　What is token ?

　(*ii*)　Write syntax of printf statement.

　(*iii*)　List the conditional statement.

　(*iv*)　What is recursion ?

　(*v*)　Define an Array.

　(*vi*)　What is Union ?

　(*vii*)　Define Macro.

　(*viii*)　Write operations performed on files.

2.　Attempt any *three* from following

　(*i*)　What are the data types in 'C' language ? Explain with example.

　(*ii*)　Explain Switch statement with suitable example.

　(*iii*)　What is dynamic memory allocation ? Explain various functions with suitable example.

　(*iv*)　Trace the output

```
#include <stdio.h>
main()
{
int a=4,b=8,x;
x=((a>b) ? a:b);
printf("the greatest no is %d",x);
}
```

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

   (*i*)   Write a program to calculate factorial of a given number using recursion.

   (*ii*) Write a program to display multiplication of two matrices.

   (*iii*) Write a program to opens file clear.c in read mode and print mode.

   (*iv*) Find and justify output of the following program statement :

```
#include<stdio.h>
main()
{
int num;
printf("Size of 'FLOAT' is %d\n",sizeof(float);
printf("Size of 'Num' is %d\n",sizeof(num);
printf("Size of 'Char' is %d\n",sizeof(char);
}
```

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

   (*i*)   What is String ? Explain any four string functions ?

   (*ii*) Write difference between Union and Structure.

(iii) Write a note on Command Line Argument.

(iv) Trace the output of the following:

```c
#include<stdio.h>
main()
{
        int i=0, x=0;
        for(i=0;i<10;i++)
        {
            if(i%2==I)
            x=x+l;
            else
            x--;
            printf("%d",x);
        }
}
```

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M.C.A. (Commerce) (First Semester) EXAMINATION, 2018

ELEMENT 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.

(*iv*) Symbols and abbreviations have their usual meanings.

Q1 Attempt any two of the following:　　　　　　　　　　[14]

A) In a study of correlation between the amount of rainfall (X) and the iron building material (Y) measured in suitable units, the following data were recorded following data:

X	4	5	6	7	8	9	10	11	12
Y	86	90	115	102	122	76	50	145	135

Estimate Y when x=15

B) Calculate mean and median for the following frequency distribution:

Marks	0-20	20-40	40-60	60-80	80-100
No. of students	8	12	20	10	6

C) Using C.V. find which of the batsman is more consistent in scoring:

Score of A	42	115	6	73	7	19	119	36	84
Score of B	47	12	76	42	4	51	37	48	13

Q2 Attempt any two of the following [12]

A) Explain the following terms:
 i) Type-I and Type-II error
 ii) Level of Significance
 iii) Simple and Composite Hypothesis

B) If the correlation coefficient X and Y is 0.8, find the correlation between
 i) X and -Y
 ii) 2X and 3Y
 iii) X-10 and Y+15
 iv) X/2 and Y/5
 v) (X-10)/3 and (10-Y)/5
 vi) 3X and −Y/5

C) Let X be a discrete random variable with probability mass function (p.m.f)

$$P(X{=}x){=}\frac{1}{n} \quad , \quad X = 1,2,\dots n$$
$$=0 \quad , \text{ otherwise}$$

Calculate mean and variance of X

Q3 Attempt any three of the following: [12]

a) State the P.M.F. of Poisson distribution with parameter λ. State real life examples of Poisson distribution.

b) Let X $\rightarrow$ B(n,P) then comment on the following:
 i) E(X)=7 and Var(X)=12
 ii) E(X)= 4 and s.d(X)=$\sqrt{3}$ what are the values of n,p,q
 iii) If n=10, E(X)=5 find p.

c) Explain the procedure of large sample test.

d) The following 2 X 2 contingency table:

	Smoker	Non-Smoker
Literate	83	57
Illiterate	45	68

Test whether there is any relation between literacy and the smoking at 5 % level of significance

e) A random sample of 27pairs of observations from a normal population gives a correlation of 0.72. Is it likely that variables in the population are uncorrelated? (Use 5% LOS , Given that t_{25}=2.060, t_{26}=2.056,t_{27}=2.052)

Q4   Attempt any three of the following   [12]

a) Explain the test procedure of Chi-square goodness of fit.
b) A sample of 256 bricks has mean weight of 2.57 kg with standard deviation of 0.50 kg. Test the hypothesis that the samples from a population with mean weight 2.5 kg at 5 % level of significance
c) Let X→N(3, 2^2) Find P(X< 4) and P(3<X< 7)
d) Calculate coefficient of variation for the following observations:

     30,35,40,25,35,36,50,20

e) State any four properties of normal distribution.

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M.C.A. (Commerce)

FINANCIAL ACCOUNTING

(2013 Pattern) (Credit System)

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

Instructions to the candidates:

1) *Question no. 1 is compulsory.*

2) *Solve any three questions from the remaining.*

Q1) The following Trial Balance was taken out on 31ˢᵗ March, 2017 from the Books of Mr. Shankar. You are required to prepare a Trading and Profit and Loss Account and Balance Sheet as on 31ˢᵗ March, 2017. **[14]**

Particulars	Debit/Rs.	Credit/Rs.
Sales		4,00,000
Purchases	2,50,000	
Wages	10,450	
Mr. Shankar's Capital Accounts		34,350
Insurance	250	
Carriage Inwards	200	
Carriage Outwards	250	
Electricity	300	
Rates and Taxes	200	
Opening Stock	30,625	
Cash	875	
Discount	50	300
Motor Car	1,00,000	
Machinery	43,000	
Debtors	3,000	
Creditors		10,400
Furniture	4,000	
Dividend recd.		150
Salaries.	2,000	
Total Rs.	4,45,200	4,45,200

Adjustments:

a) Provide Depreciation on Machinery 15% and Furniture 10% p.a.

b) Insurance paid in advance Rs. 50.

c) Outstanding Salaries Rs. 300/-.

d) Closing stock was valued at Rs. 10,200/-

Q2) Prepare Journal from the following transactions in the books of Mr. Sunil.**[12]**

a) Sunil started business with Building worth Rs. 1,50,000/- and Cash Rs. 55,000/-

b) Borrowed Rs. 50,000/- from Sanjay as a Loan.

c) Open Bank Account and Deposited Rs. 20,000/- with State Bank

d) Sold Goods to Amar worth Rs. 25,000/- and amount received by cheque.

e) Bought goods worth Rs. 50,000/- from M/s Arvind on credit.

f) Placed an order with M/s. Dinesh & Co. for goods worth Rs. 20,000/-

g) Paid Insurance Premium of Rs. 500/-.

h) Paid for Salaries Rs. 1,000/- Wages Rs. 800/- and Stationery Rs. 200/-

Q3) A Company purchased Machinery on 1st April 2014 for Rs. 2,00,000/-. decided to charge depreciation @ 10%. Company sold the machinery on 31st March 2017 for Rs. 1,00,000/-.

Prepare Machinery A/c & Depreciation A/c using Reducing Balance Method (WDV) as a method of Depreciation. **[12]**

Q4) Explain the term Financial Accounting. Explain the objectives and users of Financial Accounting. **[12]**

Q5) What is Management Accounting? Distinguish between Management Accounting and Financial Accounting. **[12]**

Q6) Write short notes on the following: (any three)   **[12]**

     a)   Users of Accounting information.

     b)   ERP (Enterprise Resource Planning);

     c)   Importance of Accounting Standards;

     d)   Money measurement concept;

     e)   Business Entity Concept.

❀ ❀ ❀

Total No. of Questions—6]

[Total No. of Printed Pages—2

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M.C.A. (Commerce) (First Semester) EXAMINATION, 2018

PRINCIPLES OF MANAGEMENT

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*)   Question No. **6** is compulsory.

(*ii*)   Attempt any *three* from Question No. **1** to **5**.

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

Q.1.a.Define the term Management. Explain in brief functions of Management.   (07)

b. Explain in detail roles of manager in carrying out the business operation.   (07)

Q.2.a. Explain Henri Fayol's contribution in the evaluation of management thought.   (07)

b. What is Systems Approach? Explain Systems Approach in context with evaluation of management thought.   (07)

Q.3.a. Define Staffing. Explain in brief the importance of staffing.   (07)

Q.3.b.What do you mean by organizing? Discuss the in brief the types of organization.   (07)

Q.4.a. Define the term co-ordination. Explain techniques of Co-ordination.   (07)

Q.4.b.Explain in detail McClelland's need for achievement theory.   (07)

Q.5.Write a note on:

a. SWOT Analysis   (07)

b. BCG (Business Portfolio Matrix)   (07)

P.T.O.

Q.6. Short Notes (Any Two) **(08)**

a) Social Responsibility of Management

b) Span of Controlling

c) T Q M

d) Effective Leadership

e) Delegation of Authority

Total No. of Questions—4]   [Total No. of Printed Pages—1

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[5361]-106

M.C.A. (Commerce) (Sem. I) EXAMINATION, 2018

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.

Q. 1) What is communication? Explain the principles of communication.   [14]

OR

What do you mean by grapevine? Explain the various patterns of grapevine.   [14]

Q. 2) What is listening skills? Explain the barriers to effective listening skills. [14]

OR

What do you mean social media? Describe the advantages and limitations of social
media.   [14]

Q. 3: A) State the need of business correspondence.   [7]

OR

Draft an order letter on behalf of Infosys Limited, Pune to M/s. Shree Furniture,
West Street Road, Pune regarding office furniture.   [7]

B) Write the uses of simple present tense.   [7]

OR

Write the uses of present perfect tense.   [7]

Q. 4) Write short notes. **(Any two)**   [8]
a) Essential of resume.
b) Group discussion.
c) Video conferencing.
d) Reasons of complaint letter.

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MCA (Commerce) (Semester - II)
201: DATA STRUCTURE USING-C
(2013 Pattern)

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

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

Q1) a) Answer any three of the following.   **[12]**

i) Explain the basic terminologies in tree.

ii) What is queue? Explain the concept of Dqueue with example.

iii) What is binary tree? Explain operations performed on binary tree with example.

iv) Explain the concept of static and dynamic representation of linked list with example.

b) Answer any one of the following: **[2]**

i) Height of a node.

ii) Height of a tree.

Q2) Answer any three of the following.   **[12]**

a) Explain adjacency list representation of graph with suitable example.

b) Sort the following numbers using bubble sort method. 4,16,2,8,11,7,22.

c) Write an algorithm to convert enfix expression to postfix form.

d) Convert the following expression to postfix form.

(P+Q)/ (M–N) – (A*B)

P.T.O.

Q3) Answer any three of the following.   **[12]**
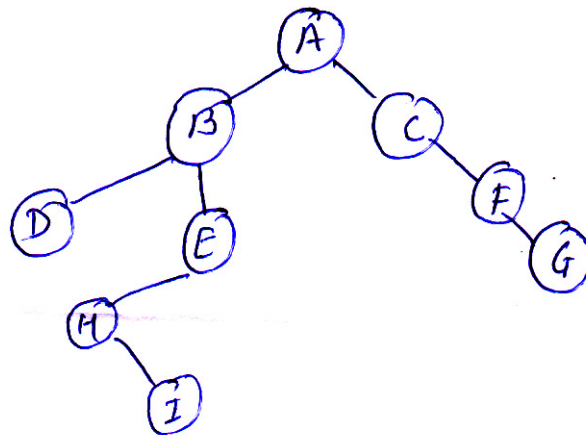
    a)   Write a short note on doubly link list.

    b)   What is an Array? Explain representation of array with example.

    c)   Explain the concept of circular queue.

    d)   Write an algorithm for DFS. Traversal.

Q4) Answer any three of the following.   **[12]**

    a)   Explain the concept of adjacency matrix and adjacency list with example.

    b)   What are different applications of stack.

    c)   Traverse the following binary tree in preorder and inorder.

    iv)   Explain Dijkstra's algorithm for finding shortest path.

○ ○ ○

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

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M.C.A. (Commerce) (II Sem.) EXAMINATION, 2018

202 : OOP'S USING C++

(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 *two* : [2×7=14]

   (*a*) Write a C++ program to accept the item_id, name, qty, rate for five items using array of objects. Calculate amount, total bill and display output.

   (*b*) Write a C++ program to copy the content of one text file into another text.File.

   (*c*) Write a C++ program to create a class TIME which contains hours, minutes, seconds and overload the = = operator to check whether given two times are same or not.

2. Attempt any *three* : [3×4=12]

   (*a*) What is the output of this program ?

   #include <iostream>

   Using namespace std;

   class A

```cpp
{   public :
        int  x  =  20;
};
class  B
{   int  x  =  10;
};
int  main( )
    {
        A  obj  1;
        B  obj  2;
        obj  1  =  obj  2;
        cout  <<  obj  1.x;
        cout  <<  endl;
        return  0;
    }
```

(b)   Trace the outupt for :

```cpp
#include  <iostream>
using  namespace  std;
class  Test
{   private :
        int  marks  =  85;
    public :
        Test  (int  marks)
        {
            cout  <<  this  →  marks;
            cout  <<  endl;
        }
};
```

```
int main ( )
{  Test t(95);
   return 0;
}
```

(*c*) Trace the output for :

```
# include <isotream>
   using namespace std;
class A {
   int x = 2;
   int main ( )
   {
      int x = 4;
      cout << x;
      cout << endl;
   }
      cout << x;
      out << endl;
      out << : : x;
      cout << endl;
      return 0;
   }
```

(*d*) Trace the output for :

```
#include <isotream>
   using namespace std;
int main ( )
{
```

```
randomize ( );

int Arr [ ] = {9, 6}, n;

int chance = random (2) +10;

For (int i = 0, i < 2; i++)

{

    n = random(2);

    cout << Arr [n] + chance << "#";

}

}
```

3. Attempt any *three* :   [3×4=12]

(*a*) What is constructor ? Explain different types of constructor in brief.

(*b*) What is Friend Function ? What are their implications on information hiding ?

(*c*) Explain the importance of class template with example.

(*d*) Explain the need of scope resolution operator.

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

(*a*) Namespaces

(*b*) Operator overloading

(*c*) String manipulation

(*d*) Virtual function.

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[5361]-203

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

EXAMINATION, 2018

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

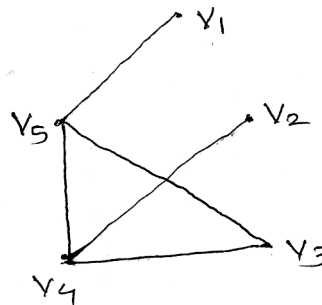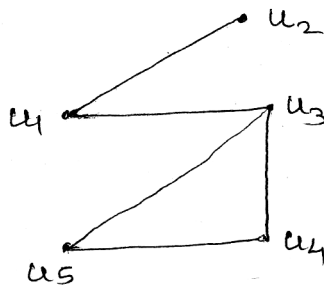(*a*)　Use Guasian elimination to solve the system of linear equations :

$$2x_2 + x_3 = -8$$
$$x_1 - 2x_2 - 3x_3 = 0$$
$$-x_1 + x_2 + 2x_3 = 3.$$

(*b*)　Explain the logical connectivities with truth tables.

(*c*)　Verify the following graph are Isomorphic or not :

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

(*a*) Define and explain :

(*i*) Subtree

(*ii*) Ancestors.

(*b*) Find the value of *x,* if :

$$\begin{vmatrix} 3+x & 4+x & 5+x \\ 1 & -1 & 2 \\ 1 & 4 & 2 \end{vmatrix} = 0$$

(*c*) Explain the term equivalence class with example.

(*d*) Define tautology. Verify the following is tautology or not :

$$(p \wedge \sim q) \vee (\sim p \wedge q).$$

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

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

$$p \Rightarrow q$$

$$q \Rightarrow p$$

$$\therefore \ p \vee q$$

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

(*c*) Prove that :

$$\begin{vmatrix} b+c & a & a \\ b & c+a & b \\ c & c & a+b \end{vmatrix} = 4\ abc$$

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(d) Define and explain the following :

    (*i*) Inverse Relation

    (*ii*) Universal Relation.

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

(*a*) Define and explain :

    (*i*) Diagonal matrix

    (*ii*) Symmetric matrix.

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

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

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

(*c*) Define and explain :

    (*i*) Contrapositive statment

    (*ii*) Inverse statement.

(*d*) Define spanning tree with suitable example.

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

Seat
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[5361]-204

M.C.A. (Sem. II) EXAMINATION, 2018

(Commerce Faculty)

204 : SYSTEM ANALYSIS AND DESIGN

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

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

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

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

1.   State electricity board had decided to implement computerized system for all related activities such as meter reading, bill generation, new connection, complaints etc. consider suitable assumption. Draw ERD, CLD and First level DFD.   [14]

2.   Attempt the following questions (any *two*) :   [2×6=12]

(*a*)   Describe SDLC with suitable diagram in detail.

(*b*)   Design a GUI form for registration of Aadhar Card.

(*c*)   In a Shopping Mall, the following scheme is introduced :
If you are a regular customer, on every shopping of Rs. 5,000 and above, you will get 1 point. On collecting such 10 points you get a free tour package. For points below 10 you get a gift coupon. The collected points between 1 January 2016 to 31 March 2016 are only considered for this scheme. Draw Decision Tree and Decision Table for the above.

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

 (*a*) Role of system analyst in software development process.

 (*b*) Elaborate various approaches of implementation.

 (*c*) Explain various types of testing.

 (*d*) Explain the various characteristics of system.

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

 (*a*) 4 GL

 (*b*) Feasibility Study

 (*c*) Reverse Engineering

 (*d*) Pseudo Code.

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

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M.C.A. (Commerce) (II-Semester) EXAMINATION, 2018

205 : DATABASE MANAGEMENT SYSTEM

(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.

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

(*iv*) *All* questions are compulsory.

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

(*i*) Define :

(*i*) Data

(*ii*) Information

(*ii*) What is view in SQL ?

(*iii*) What is entity relationship model ?

(*iv*) Define Transaction.

(*b*) University library have many books. Books are written by different authors. Books are classified into different categories. Library purchases books from specific book-sellers of different publishers. Members of library are either staff-member or student. From a given case study list out entities, attributes, primary keys and relationship. Draw an E-R diagram for the same. [8]

P.T.O.

2. Attempt any *three* : [3×4=12]

   (*a*) Write a note on Normalization.

   (*b*) Explain states of transaction with the help of suitable diagram.

   (*c*) What is failure ? Explain failure classification in detail.

   (*d*) What is deadlock ? Explain how deadlock is prevented ?

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

   Customer (cno., cname, city)

   Quotation (qno, qdate, description, amt-quoted, cno)

   (*i*) Display customer names having quotation for 'keyboard'.

   (*ii*) List all customers who lived in 'Pune' or 'Pimpri'.

   (*iii*) Display customers whose ant-quoted as Rs. 20000.

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

   Employee (eno, ename, designation, salary)

   Project (pno, pname)

   Emp-project (eno, pno, no_of_hrs_worked)

   (*i*) Create table query for project table by adding primary key constraint and project name should not be null.

   (*ii*) Add completion-date attribute in project table.

   (*iii*) Display employee details working as 'project leader'.

   (*iv*) Insert a row in employee table.

   (*v*) Charge salary of employee 'Mr. Patil' to 50000.

4. Attempt any *three* : [3×4=12]

   (*a*) Write a note on data model.

(*b*)   Explain any *four* aggregate functions in SQL with syntax.

(*c*)   Consider the following transaction :

T$_1$	T$_2$
Read (B)	Read (A)
B = B + 200	A = A − 100
Write (B)	Write (A)
Read (C)	Write (B)
C = C − 100	B = B + 100
Write (C)	Write (B)

Give *two* non-serial schedules that are serializable.

(*d*)   The following is the list representing the sequence of events in as interleaved execution of set of transactions T$_1$, T$_2$, T$_3$ and T$_4$ assuming two-phase locking protocol. 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 (B, X)
t$_3$	T$_3$	Lock (C, X)
t$_4$	T$_4$	Lock (A, S)
t$_5$	T$_1$	Lock (C, X)
t$_6$	T$_2$	Lock (D, X)
t$_7$	T$_3$	Lock (D, X)
t$_8$	T$_4$	Lock (B, X)

Seat
No.

[5361]-206

M.C.A. (Commerce) (Second Semester) EXAMINATION, 2018
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) Define HR Planning. State the objectives and process of Human Resource Planning. **(7)**

    b) Explain in detail the need and importance of training in modern business organisation. **(7)**

    c) Define HRM. What are the challenges faced by present day Human Resource Manager. **(7)**

2. a) What is collective bargaining? Explain the process. **(6)**

    b) Explain in detail Human Resource Information System? **(6)**

    c) What are the challenges of performance management system? **(6)**

3. a) What are the different methods of training? **(6)**

    b) Explain the concept of selection and its process. **(6)**

    c) Distinguish between HRM and personnel Management. **(6)**

4. Give a detailed note on:

    a) Concept of union and reasons for joining the union. **(6)**

    b) Job analysis – concept. **(6)**

    c) International Training and development issue. **(6)**

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

Seat
No.

[5361]-301

M.C.A. (Commerce) (Semester III) EXAMINATION, 2018
CORE JAVA (301)
(2013 Pattern)

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

1. Attempt any *seven* :   [7×2=14]

   (*a*)   State the purpose of this keyword.

   (*b*)   What is an applet ?

   (*c*)   Give the use and syntax of getActionCommand( ) method.

   (*d*)   List any *two* interfaces used in event handling.

   (*e*)   "A try block must have a catch block". State true or false. Justify.

   (*f*)   What is the purpose of javac ?

   (*g*)   Define hashset.

   (*h*)   What is garbage collection ?

2. Attempt any *three* :   [3×4=12]

   (*a*)   Write a note on package.

   (*b*)   Difference between asbstract class and interface.

   (*c*)   Write a program to read *n* string and insert into arraylist collection. Display the elements of collection in reverse order.

   (*d*)   Write a program using Java that accepts *n* integer as command line argument and displays the count of even and odd numbers.

P.T.O.

3. Attempt any *three* : [3×4=12]

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

    (*b*)   Write a java program which accepts a number from user. If the number is not a prime number then raise an exception "NoNotPrimeException". Otherwise display result.

    (*c*)   Write a class student. Store it in STUD package. Create another class batch with information about subject, faculty and timing. Store it in package BAT. Use class batch to set information for student class.

    (*d*)   Explain iterator and comparator with appropriate example.

4. Attempt any *three* : [3×4=12]

    (*a*)   How can we create our own exception ? Explain with example.

    (*b*)   Design a screen in java which contains two text box and one button. The content entered in to first textbox will be displayed in second text box in reverse case after button click.

    (*c*)   Explain the following string class methods with syntax and example :

        (*i*)   length( )

        (*ii*) equals( )

        (*iii*) charAt( )

        (*iv*) compareTo( )

    (*d*)   Write a java program to calculate sum of all integers greater than 50 and less than 100 that are divisible by 5.

Total No. of Questions—8]　　　　　　[Total No. of Printed Pages—3

Seat
No.

[5361]-302

M.C.A. (Commerce) (III Semester) EXAMINATION, 2018

302 : ADVANCED DATABASE MANAGEMENT SYSTEM

(2013 PATTERN)

Time : Three Hours　　　　　　　　　Maximum Marks : 50

N.B. :— (*i*)　Attempt any **5** questions.

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

1. Attempt the following :

(*a*)　What is SOAP ? Explain.　　　　　　　　　　　　　　[4]

(*b*)　Explain Round Robin Partitioning technique.　　　　　[4]

(*c*)　What is Query optimization. ?　　　　　　　　　　　[2]

2. Attempt the following :

(*a*)　Explain Intra Query parallesim.　　　　　　　　　　[4]

(*b*)　Explain Data Replication in Distributed data storage.　[4]

(*c*)　Define :

(*i*)　Encapsulation

(*ii*)　Inheritance　　　　　　　　　　　　　　　　　[2]

3. Attempt the following :

(*a*)　Explain *two* phase commit protocol.

(*b*)   Explain decision Tree.   [4]

(*c*)   Define :

   (*i*)   Region Data

   (*ii*)   Point Data   [2]

4.   Attempt the following :

(*a*)   Explain deadlock handling in DDBMS.   [4]

(*b*)   Explain client-server architecture.   [4]

(*c*)   Explain shared memory.   [2]

5.   Attempt the following :

(*a*)   Explain Data warehouse structure in detail.   [4]

(*b*)   Explain distributed catlog manager.   [4]

(*c*)   Define :   [2]

   (*a*)   Linear speed up

   (*b*)   Linear scale up.

6.   Attempt the following :

(*a*)   Explain Apriori Algorithm.   [4]

(*b*)   Compare between Homogeneous and Heterogeneous system.   [4]

(*c*)   Define :   [2]

   (*i*)   Precision

   (*ii*)   Recall

7. Attempt the following :

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

(*b*) Explain Majority Protocol. [5]

8. Attempt *All* :

(*a*) Consider the following schema : [5]

Student (sno, sname, city, class)

Perform horizontal fragmentation of student relation using following predicates.

$P_1 : \sigma_{city} = $ 'Mumbai'

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

$P_3 : \sigma_{city} = $ 'Nasik'

(*b*) Perform vertical fragmentation of Drug relation given below : [5]

Drug (dno, dname, type, company, price)

According to the following requirements :

(*a*) Site 1 requires information about dno, dname, type.

(*b*) Site 2 requires information about company price.

Seat No.	

[5361]-303

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2018
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 diagrams must be drawn wherever necessary.

Q1. Attempt any Seven of the following.   [2 X 7 = 14]

a.   What is Binary Association?
b.   Define Data Management Component.
c.   What is Collaboration?
d.   Define Model of System.
e.   What is Polymorphism?
f.   Define Dependency?
g.   What is Classifier?
h.   What is OOSE?

Q2. Attempt any Four of the following.   [3 X 4 = 12]

a.   Explain SDLC in details.
b.   Differentiate between Aggregation and Generalization.
c.   Explain System design process with suitable diagram.
d.   Draw Collaboration Diagram for Library Management System.
e.   Explain the advantages of Iterative development process.

Q3. Attempt Any Three of The following.   [4 X 3 = 12]

a.   What is use of deployment diagram? Explain with an example.
b.   What is package? Explain it with import and export stereotype.
c.   Define things? Explain types of things in UML.
d.   Explain Object design process in details.

Q4. Attempt the following.   [6 X 2 = 12]

a.   A civil hospital in Pune has number of departments having their rules. Each department faces delays in getting information from other departments. Some typical problems faced by the administrators are that invoices are frequently paid more than once. Patients are not charged uniformly. In addition about 20 patient's accounts are lost per month. The hospital faces shortages of critical medicines and drugs. The hospital dietician does not get full details of the class of patients and diet requirements in time. There are also delays in releasing the patients because of billing delays. Clinical scheduling involving patients, Physician, nursing services and out-patient is poor. "Patient monitoring errors" occur very often because same tests are ordered sometimes by the nurses and sometimes by the physician.

Read the case study and draw the following diagram:

a. Activity Diagram.
b. Sequence Diagram.

             OR

a.   Draw Use Case and State Transition diagram for considering different scenarios for College Admission System.

b.   Write a short note on the following.
     i. Black box Testing and White Box Testing
     ii. UML Architecture.
     iii. Unified Process

Seat No.	

[5361]-304

M.C.A. (Commerce) (Third Semester) EXAMINATION, 2018
305 : NETWORK OPERATIONS
(2013 PATTERN)

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

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

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

Q1)   a) Solve any Three   [3 × 4 = 12]
   i) Compare OSI and TCP/IP model.
   ii) Explain briefly pure ALOHA.
   iii) Distinguish between virtual circuit and datagram.
   iv) Write a short note on Fiber Optic Cable

   b) Solve any one   [1 x 2=2]
   i) Define Computer Network
   ii) What do you mean by Logical address?

Q.2) Solve any three   [3 × 4 = 12]
   i) Write note on Manchester coding.
   ii) Write a note on advantages of IPV6 protocol
   iii) State applications of Computer Network.
   iv) State the importance of error control.

Q.3) Solve any three   [3 × 4 = 12]
   i) Explain briefly wide area network.
   ii) Explain briefly TDMA and CDMA channelization methods
   iii) Explain Stop and Wait ARQ for noisy channel.
   iv) Explain in detail parallel transmission.

Q.4) Solve any three   [3 × 4 = 12]
   i) Explain briefly Bus topology.
   ii) Consider extremely noisy channel in which signal to noise ratio is zero.
      Find out capacity of the channel.
   iii) Differentiate between multiplexing and demultiplexing.
   iv) Write a note on Packet Switching.

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

Seat
No.

[5361]-305

M.C.A. (Commerce) (III-Semester) EXAMINATION, 2018

105 : OPERATING SYSTEM

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

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

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

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

(*a*)   Define page fault.

(*b*)   Define critical section.

(*c*)   Define semaphore.

(*d*)   Define trun around time.

(*e*)   What is swapping.

(*f*)   What is file ? List any 2 attributes of a file.

(*g*)   What is deadlock.

(*h*)   What is Dispatcher.

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

(*a*)   Explain process control block with the help of diagram.

(*b*)   Explain internal and external fragmentation with the help of
an example.

(*c*) Calculate Average turn-around time and average waiting time for the following by using :

(*i*) FCFS

(*ii*) Non-pre-emptive SJF.

Process	Burst Time	Arrival Time
P_1	4	1
P_2	3	0
P_3	2	2

(*d*) What do you mean by segmentation ? Explain the advantages of segmentation.

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

(*a*) Explain Deadlock Recovery Methods.

(*b*) Consider the following page reference string :

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

The number of frames are 3. Show page trace and calculate page foults for the following :

(*i*) FIFO

(*ii*) LRU

(*c*) Explain indexed allocation method with diagram.

(*d*) Explain in different operations of file.

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

(*a*) What is virtual memory ? How it is achived by using demand paging.

(*b*) Explain in detail the "Dining philosopher problem".

(*c*) Write short note on polling :

(*d*) Consider the following snapshot of system. A system has 5 processes. A through E and resource types M_1 through M_4.

	Allocation			
	M_1	M_2	M_3	M_4
A	0	0	1	2
B	1	1	0	0
C	1	3	5	4
D	0	6	3	2
E	1	0	1	4

	Max			
	M_1	M_2	M_3	M_4
A	0	0	1	2
B	1	7	5	0
C	2	3	5	6
D	0	6	5	2
E	1	6	5	6

Available			
M_1	M_2	M_3	M_4
1	4	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.

[5361]-306

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

EXAMINATION, 2018

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 *four* emerging applications in M-Commerce.

   (*b*) Explain system architecture of transaction database access for M-Commerce client.

   (*c*) Explain coupons and loyalty cards applications with example.

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

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

   (*b*) Explain Information Services Applications with example.

   (*c*) Explain Bluetooth Communication Technology in Mobile Commerce.

   (*d*) Explain Mobile financial services with example.

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

(*a*) Explain how consistent data broadcast utilized in global transaction.

(*b*) Explain personalized content management in Mobile Commerce Services.

(*c*) Explain Mobile Purchase Applications with example.

(*d*) Explain any *two* information exchange technology.

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

(*a*) Mobile Coupons

(*b*) 4GS

(*c*) E-Commerce

(*d*) M-Commerce Life Cycle.

Seat
No.

[5361]-307

M.C.A. (Commerce) (III-Semester) EXAMINATION, 2018

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.   Explain MIS development life cycle.   [10]

2.   Explain in detail the role of MIS in DSS.   [10]

3.   Explain different methods of data and information collection. [10]

4.   Explain the role of system analyst in development of MIS. [10]

5.   Explain in brief OOSAD development life cycle.   [10]

6.   Why a long range plan is necessary in development of MIS ? How
     is it linked with business plan of the organization ?   [10]

7.   What is system ? Explain different types of system with example. [10]

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

Seat
No.   **[5361]-401**

M.C.A. (Commerce) (IV Sem.) EXAMINATION, 2018

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.

Q1) Attempt any Seven from Following.   [7X2=14]
   (*a*) What is Introspection?
   (*b*) What is use of getConnection() method?
   (*c*) Differentiate between sleep() and interrupt() method.
   (*d*) What is Servlet?
   (*e*) What are Tag in JSP?
   (*f*) What is bind() method.
   (*g*) What is thread priority?
   (*h*) What is Metadata?

Q2) Attempt any three from following   [3X4=12]
   (*a*) Explain thread Synchronization with suitable example?
   (*b*) Explain RMI architecture with suitable diagram?
   (*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)

Q3) Attempt any three from following   [3X4=12]
   (*a*) What is session? How to handle session in servlet programming, explain with
         example
   (*b*) What is Beans? Write properties of Beans.
   (*c*) Write JSP program to display welcome message as per server timing?
   (*d*) Write JDBC program to delete employees whose name is starting with A?

P.T.O.

Q4) Attempt ant any from following [3X4=12]

(a) Explain JSP Directives with suitable example?

(b) Explain JDBC Architecture with suitable diagram?

(c) Write a File server Program which accepts file name from client and displays its content on client machine?

(e) Write a thread program to display Perfect numbers between 1 to 1000 after every 5 second?

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

Seat
No.

[5361]-402

M.C.A. (Commerce) (IV Sem.) EXAMINATION, 2018

402 : VISUAL PROGRAMMING

(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.

(*iii*) *All* questions are compulsory.

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

(*a*) What are different window resources ?

(*b*) What are queued messages ?

(*c*) Explain the use of stock pens.

(*d*) What are virtual keys ?

(*e*) Differentiate between DrawText ( ) & TextOut ( ).

(*f*) What is a hot spot and a caret ?

(*g*) List out different pen styles.

(*h*) Give syntax of message box API.

2. Attempt any *three* :   [3×4=12]

(*a*) Explain Message Loop in detail.

(*b*) Explain the various ways to acquire the handle to the device

context.

P.T.O.

(*c*) Explain WM-PAINT with an example.

(*d*) Write a window procedure to scroll string "Hello" in the Client Area by using Timer method.

3. Attempt any *three* : [3×4=12]

(*a*) Explain in detail about the Windows Message Structure and Windows Procedure.

(*b*) Explain parameters of Create Window ( ).

(*c*) Explain modal and modalless dialog boxes.

(*d*) What are the contents of lparam and wparam in case of client mouse messages ?

4. Attempt any *three* : [3×4=12]

(*a*) Write a window procedure to display Push Button at the centre of client area. Use up, Down, Left and Right arrow keys to move it accordingly.

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

(*c*) Explain ODBC and its architecture.

(*d*) Write short notes on (any *two*) :

(*i*) Accelerators

(*ii*) GDI functions (any *two*)

(*iii*) Mapping Modes.

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

Seat
No.

[5361]-403

M.C.A. (Sem. IV) EXAMINATION, 2018
(Commerce Faculty)
CS-403 : DISTRIBUTED DATABASE SYSTEM
(2013 PATTERN)

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

1. Attempt any *seven* :   [7×2=14]

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

 (*b*) What is DDBMS ?

 (*c*) What is Bushy Join Tree ?

 (*d*) State the different steps of query processing in a DDBMS.

 (*e*) List different types of failure in DDBMS.

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

 (*g*) What are different ways in which global directories can be stored in DDBMS ?

 (*h*) Define dirty read problem.

2. Attempt any *three* :   [3×4=12]

 (*a*) Write a note on Top-Down Approach of DDB design.

 (*b*) Explain Complicated Factors of distributed database.

 (*c*) Differentiate between MDBS and DDBMS.

 (*d*) Write a note on "Components of DDBMS" with the help of diagram.

3. Attempt any *three* : [3×4=12]

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

    (*b*)   Write a note on Basic Timestamp Ordering protocol in case of DDBMS.

    (*c*)   What is Transaction ? Explain different types of transaction.

    (*d*)   Write a note on Distributed deadlock detection.

4. Attempt any *three* : [3×4=12]

    (*a*)   Consider the following relational schema

        Student(Sno, Sname, City, Class)

        Subject(Sub_no, Sub_Name)

        Stud_Sub(Sno, Sub_No, Marks)

        Construct optimized operator tree for the following query.

        Select Sname, City

        from Student, Subject, Stud_Sub

        where Student.Sno=Stud_Sub.Sno. and

        Subject.Sub_no=Stud_Sub.Sub_No and

        Class="MCA" and Sub_name="DDBMS"

        and Marks>75

    (*b*)   Consider the following DWFGs

        Consider the following scenario. Transaction T1 and T2 are executing at site 1. T3 and T4 are executing at site 2. Transaction T1 is waiting for Transaction T2. Transaction T3 is waiting for Transaction T4. Transaction T1 is waiting for Transaction T3. Transaction T4 is waiting for Transaction T2.

        Draw LWFG and GWFG. Detect the deadlock.

(*c*)   Consider relation PROJ(Pno, Panme, Budget)

Assume that PROJ relation is horizontally fragmented as

$$PROJ_1 = 6_{PNO<= 15} (PROJ)$$
$$PROJ_2 = 6_{PNO> 25 \wedge PNO<= 55} (PROJ)$$
$$PROJ_3 = 6_{PNO> 55} (PROJ)$$

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

Select Budget

From PROJ

Where Pno = 65;

(*d*)   Consider the following relational schema

Book(Bno, Bname, Pubname, Price)

Author (Ano, Aname, City)

B_A(Bno, Ano)

Draw a query graph 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="Techmax" and Price>150

and City="Nashik"

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

Seat
No.

[5361]-404

M.C.A. (Commerce) (Fourth Semester) EXAMINATION, 2018

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 Internet and URL.　　　　　　　　[5]

(*b*)　Explain text formatting properties in CSS.　　　[5]

2.　Answer the following :

(*a*)　What is validations ? Explain JavaScript validations on
form.　　　　　　　　　　　　　　　　[5]

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

3.　Answer the following :

(*a*)　Explain physical and logical tags.　　　　　[5]

(*b*)　Explain configuring and installing PHP.　　　[5]

4. Answer the following :

    (*a*)   Explain DOM model in JavaScript.   [5]

    (*b*)   Explain DSO, XML namespaces, XML DTD.   [5]

5. Answer the following :

    (*a*)   Write a JavaScript to check whether a given No. is prime number or not.   [5]

    (*b*)   Write a UBscript to print even and odd numbers from 1 to 50.   [5]

6. Answer the following :

    (*a*)   Write the following code to display frame :   [5]

Web	**Technologies**
HTML CSS XML	

    (*b*)   Explain XML elements and attributes.   [5]

7. Answer the following :

    (*a*)   Explain PHP Architecture model.   [5]

    (*b*)   Explain classes in CSS.   [5]

8. Answer the following :

    (*a*)   Explain WWW and W3C.   [5]

    (*b*)   Explain Array in JavaScript.   [5]

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

Seat
No.

[5361]-405

M.C.A. (Commerce Faculty) (IV Semester) EXAMINATION, 2018

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 **7**) : [7×2=14]

(*a*) Define Interface management.

(*b*) What is meant by Referent Power ?

(*c*) List advantages of functional organizational structure.

(*d*) Define Resource Leveling.

(*e*) State qualities of project manager.

(*f*) What are tripple constraint on project ?

(*g*) Define project and its attribute.

(*h*) What is risk identification ?

(*i*) State processes of project communication management.

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

(*a*) What is team development ? Explain it.

(*b*) Explain performance reporting.

(*c*) Discuss on project management.

(*d*) Explain risk response control.

P.T.O.

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

    (*a*)   What are the different role performed by user in project management ?

    (*b*)   What is quality planning ? Explain it.

    (*c*)   Explain COCOMO model.

    (*d*)   What is Risk ? Explain categories of risk.

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

    (*a*)   Explain project execution tools and techniques.

    (*b*)   Discuss briefly system implementation in project management.

    (*c*)   Write a note on staff acquisition.

    (*d*)   Explain types of cost estimates.

[5361]-407

M.C.A. (Commerce) (Fourth Semester) EXAMINATION, 2018
408 : ADVANCED NETWORKING
(2013 PATTERN)

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

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

Q1. Attempt the following　　　　　　　　　　　**[4+4+2=10 Marks]**

　a)　Write a note on routing information protocol (RIP).
　b)　Explain three strategies for transition from IPv4 to IPv6
　c)　If a logical address is 32 bits, what is the minimum header size at network layer of the TCP/IP protocol suite?

Q2. Attempt the following　　　　　　　　　　　**[4+4+2=10 Marks]**

　a)　Explain Cipher Feedback (CFB) mode.
　b)　Alice meets Bob & says L NQRZ BRX. If she is using caesar cipher, what does she want to convey?
　c)　Can we say UDP plus RTP is the same as TCP? Why or why not?

Q3. Attempt the following　　　　　　　　　　　**[4+4+2=10 Marks]**

　a)　Explain open shortest path first (OSPF) protocol.
　b)　Discuss double DES? What is the idea behind meet in the middle attack?
　c)　Explain the need of security.

Q4. Attempt the following　　　　　　　　　　　**[4+4+2=10 Marks]**

　a)　Write a note on streaming stored audio/video.
　b)　Calculate the HLEN value if the total length is 1200 bytes, 1176 of which is data from upper layer.
　c)　List any two substitution techniques.

Q5. Attempt the following　　　　　　　　　　　**[4+4+2=10 Marks]**

　a)　How SHTTP is different from SSL?
　b)　Write a note on VPN.
　c)　Define and explain certification authority (CA)

Q6. Attempt the following   **[4+4+2=10 Marks]**

    a) Explain how certification-based authentication works.
    b) Outline the broad-level steps in SET.
    c) What are the limitations of firewall?

Q7. Attempt the following   **[5+5=10 Marks]**

    a) Write a note on CSMA/CD
    b) Explain the structure of a router

Q8. Attempt the following   **[5+5=10 Marks]**

    a) Given two prime numbers P=19 & Q=7. Find out N, E & D in an RSA encryption process.
    b) Write a note on electronic money.

Seat No.	

[5361]-501

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2018

501 : ADVANCED WEB PROGRAMMING

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :— (*i*)   Attempt any *five* of the following.

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

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

Q.1) Attempt the following

　　a) Explain advantages of ASP.Net [4]

　　b) Explain Interfaces in C# with example. [4]

　　c) What is Data Validation ? [2]

Q.2) Attempt the following

　　a) What are cookies? Explain the Cookie class in ASP.Net. [4]

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

　　c) Note on Event Handling ? [2]

Q.3) Attempt the following

　　a) Explain Any two Ajax controls ? [4]

　　b) What is the difference between DataReader & DataSet. [4]

　　c) What is Query Strings ? [2]

Q.4) Attempt The Following

　　a) Write a C# program to accept the details of [4]
　　Student(sid, sname, per) from user and store those details into Student table which is created in MS-ACCESS.

　　b) Write a C# program to calculate the sum of given numbers ? [4]

　　c) What is SOAP? [2]

Q.5) Attempt The Following

a) How to make a method of a web service class accessible through the Internet? [4]

b) Write a short note on WSDL document. [4]

c) what is Garbage collection? [2]

Q.6) Attempt The Following

a) Comment on JSON v/s XML [4]

b)Explain Generic Collection –Array list with Example. [4]

c)What is Access Modifier ? [2]

Q.7) Attempt The Following

a)Explain Indexer with Example. [5]

b) Write steps to access database in ADO.net using SqlDataReader object.

[5]

Q.8) Attempt The Following

a)Write a C# program to accept the details of [5] Emp(ENo,Name,Sal) And store those Details into emp table And Display All Details into DataGridView control.

b) What are basic methods & Properties of DataAdapter object. [5]

Seat No.	

[5361]-502

M.C.A. (Commerce) (Fifth Semester) EXAMINATION, 2018
502 : DATA CENTER TECHNOLOGIES
(2013 PATTERN)

Time : Three Hours　　　　　　　　　　Maximum Marks : 50

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

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

Q 1) Attempt all

　　a) What do you mean by data center? How is the cost of downtime calculated? [4]

　　b) Explain how power requirement for data centre is estimated? [4]

　　c) What is Plenum? [2]

Q 2) Attempt all

　　a) What are characteristics of an outstanding design? [4]

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

　　c) Explain the following terms: [2]
　　　(*i*) Mean Time Between Failures (MTBF)
　　　(*ii*) Mean Time to Repair (MTTR)

Q 3) Attempt all

　　a) Explain briefly physical and logical security of data centre? [4]

　　b) Explain different guidelines for automation. [4]

　　c) What factors need to be considered for selecting location of data centre ? [2]

Q 4) Attempt all

　　a) Explain various components provided by ISP within data center. [4]

　　b) What are the Sources of Information on Security. [4]

　　c) What do you understand by in-band monitoring? [2]

Q 5) Attempt all

a)What care should be taken, while designing data centre, for power failure? [4]

b)What do you mean by automation? Explain different types of automation. [4]

c)How to estimate need for energy efficient HVAC system? [2]

Q 6) Attempt all

a)Write a short note on Generators. [4]

b)Explain the terms:
  i. Network address translation (NAT) [4]
  ii. Stickiness

c)Explain the One-to-Many Failover Model. [2]

Q 7) Attempt all

a)Explain Celebrity Travels case study and give the Data Center Design for it. [5]

b)Explain in brief Symmetric two node Clusters. [5]

Q 8) Attempt all

a)What are the types of load-balancing? Explain any one in detail. [5]

b) What is System administration? Explain various duties of system administrator. [5]

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

Seat
No.   **[5361]-503**

M.C.A. (Commerce) (Sem. V) EXAMINATION, 2018
503 : INFORMATION SYSTEM AUDIT
(2013 PATTERN)

Time : Three 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]

(*i*)   What is mobile computing ?

(*ii*)   Explain different types of plans.

(*iii*)   What is Corporate Governance ?

(*iv*)   What are the components of Information System ?

(*v*)   Explain types of system.

(*vi*)   What is BCM policy ?

(*vii*)   Explain cyber frauds.

(*viii*)   What is BYOD ?

(*ix*)   Explain various types of business applications.

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

(*i*)   Explain different IS controls based on nature of controls.

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

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

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

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

(*i*) What activities are parts of System Development Life Cycle (SDLC) ? Explain briefly.

(*ii*) Why is information security important ? Discuss in detail.

(*iii*) What is business continuity planning and disaster recovery planning ?

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

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

(*i*) Differentiate between open and closed system.

(*ii*) Why is a business continuity plan important for an organisation ?

(*iii*) Explain Auditor's role in SDLC.

(*iv*) Explain Green IT.

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

Seat
No.

M.C.A. (Commerce) (V-Semester) EXAMINATION, 2018

504 : CONTENT MANAGEMENT SYSTEM

(2013 PATTERN)

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

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

　　　　　(*ii*)　Draw the diagrams wherever necessary.

1. Answer the following (ALL) :　　　　　　　　　　7×2=14

　　(1)　What is structure ?

　　(2)　What is content ?

　　(3)　What is Acquiring ?

　　(4)　What is Enterprise CMS ?

　　(5)　What is static website ?

　　(6)　List the other publications of publishing system.

　　(7)　When do you need a CMS ?

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

　　(1)　List the types of formatting ? Explain formatting by method.

　　(2)　Explain dynamic website with diagram.

　　(3)　Explain-content is named information.

　　(4)　What is 'Aggregating' from collection system ?

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

    (1) How to gauge complexity by amount of content ?

    (2) What is content Administration by Joomla ?

    (3) Explain content is information plus data.

    (4) Write the steps to create a website for ready-mode cloths and insert images.

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

    (1) Explain features of Joomla.

    (2) Explain-CM is collection, management and publishing.

    (3) What is connection in management system ? Explain.

    (4) Write the steps for books of all subjects such that navigation to computer books.

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

Seat
No.

[5361]-505

M.C.A. (Commerce) (V-Semester) EXAMINATION, 2018

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 indicate full marks.

1.   Attempt any *seven* :   [7×2=14]

(1)   Define device portability.

(2)   What is Multiplexing ?

(3)   Give any *two* differences between TDMA and FDMA.

(4)   What is Handover ?

(5)   List different tele services.

(6)   What is reverse Tunneling ?

(7)   Define Home Agent.

(8)   What is Activity ?

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

(1)   Explain GSM Architecture.

(2)   What is spread spectrum ? Give advantages and disadvantages of it.

(3)   Write a short note on MTC (Mobile Terminating Call).

(4)   Explain mobile IP packet delivery.

3. Attempt any *three* : [3×4=12]

    (1)   What are the different mobile services ? Explain them.

    (2)   What is difference between shooping TCP and Mobile TCP ?

    (3)   Explain Android Life-Cycle.

    (4)   Write a short note on localization at GSM.

4. Attempt any *three* : [3×4=12]

    (1)   What is cellular system ? Give advantages of cellular system.

    (2)   Write a short note on optimization in Mobile IP.

    (3)   What is difference between IPV4 and IPV6.

    (4)   Explain Android Architecture.

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

Seat
No.

[5361]-506

M.C.A. (Commerce) (V Semester) EXAMINATION, 2018

507 : SYSTEM SIMULATION AND MODELING

(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.

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

(*a*)   Define simulation. Explain application areas of simulation.

(*b*)   Explain different general purpose simulation packages.

(*c*)   Define output analysis. State its purpose. Explain point estimation
        and interval estimation.

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

(*a*)   Explain trends in simulation software.

(*b*)   Explain Empirical distribution with example.

(*c*)   Briefly discuss the commonly used methods in the validation
        process.

(*d*)   Explain the properties of random numbers and its consequences.

P.T.O.

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

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

    (*b*)   Explain Poisson process in detail.

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

    (*d*)   Define the term system, entity, attribute and activity. Give examples of above terms taking college admission system.

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

    (*a*)   What is verification of simulation model ? Explain suggestions for verification of models.

    (*b*)   Explain simulation of Healthcare system.

    (*c*)   Explain simulation of telephone system.

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

Seat
No.

[5361]-507

M.C.A. (Commerce) (V-Semester) EXAMINATION, 2018

BUSINESS AND PROFESSIONAL SKILLS

(2013 PATTERN)

Time : Three Hours   Maximum Marks : 50

N.B. :—   *All* questions are compulsory.

1.   What is meant by Occasional speech ? Describe different types of special occasion speeches.   [10]

Or

What do you mean by cross-culture communication ? Explain the need of cross culture communication studies.   [10]

2.   What do you mean by 'dress code' ? Explain the guidelines for professional business attire.   [10]

Or

Explain the process of communication in detail.   [10]

3.   What is self assessment in Job application process ? Explain in detail.   [10]

Or

Describe 'Resume'. Explain various sections of resume.   [10]

P.T.O.

4. What do you mean by manners ? Explain role of good manners in business. [10]

Or

What is handshake ? Describe the protocols of shaking hands professionally. [10]

5. What is a 'Memo' ? Describe the importance of memo in organization. [10]

Or

What do you mean by motivational communication ? Explain in brief the importance of motivational speech. [10]