Total No. of Questions : 6] **SEAT No. :**

P2756 **[Total No. of Pages : 3**

[5370]-1
M.C.A. (Management Faculty)
MT-21 : 205 - Probability & Combinatorics
(2008 Pattern) (Semester - II)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:-

1) ***Question No. 1 and Question No. 4 are compulsory.***
2) ***Solve any one from Question Nos. 2 and 3. And solve any one from Question Nos. 5 and 6.***
3) ***Use of statistical table and calculator is allowed.***
4) ***Figures to the right indicate full marks.***

Q1) a) State and prove formula Derangement. **[5]**

b) If there are 5 gentlemen and 4 ladies to stand in circle. If no two ladies can stand next to each other, in how many ways can they stand? **[5]**

c) A survey of 500 television viewers produces the following information: 285 watch cricket; 195 watch hockey; 115 watch tennis; 45 watch cricket and tennis; 70 watch cricket and hockey, 50 watch hockey and tennis; 50 do not watch any of the three games. **[5]**

i) How many people in the survey watch all the 3 games?

ii) How many people watch only hockey?

d) Find the coefficient of $x^4y^9z^4$ in the expansion of $\left(2x^2+3y^3-z\right)^9$ **[5]**

Q2) a) Using combinatorial argument prove the following binomial identities. **[8]**

i) $\binom{n}{r}+\binom{n}{r-1}=\binom{n+1}{r}$

ii) $\binom{n}{r}=\binom{n}{n-r}$

b) Find the number of integer valued solutions of the following equation. **[7]**

$x_1+x_2+x_3=41 \qquad x_1\geq 4, x_2>3, x_3>0$

P.T.O.

Q3) a) Determine the Discrete Numeric Function corresponding to generating function. $\frac{z}{(1-2z)(1+z)}$ **[8]**

b) Solve the following Recurrence relation **[7]**

$a_n - 7a_{n-1} + 10a_{n-2} = 3^n$, given that $a_0 = 0,\ a_1 = 1$

Q4) a) Define the following terms. **[5]**

i) Probability (classical definition).

ii) Independent events.

iii) Moment Generating function.

iv) Probability mass function.

v) Conditional Probability.

b) The following is the probability distribution of a discrete random variable X. **[5]**

x_i	–2	–1	0	1	2	3
$P(x_i)$	0.1	0.30	0.70	0.85	0.95	1.0

i) Find probability distribution

ii) Find P(x<0)

iii) Find P(x=3 | x>–1)

c) Following table represent joint probability distribution function of(X.Y). **[5]**

Y / X	1	2	3	4
1	4/36	3/36	2/36	1/36
2	1/36	3/36	3/36	2/36
3	5/36	1/36	1/36	1/36
4	1/36	2/36	1/36	5/36

Find

i) Marginal Distribution of X and Y,

ii) Conditional distribution of X given Y = 3

d) State and prove Memoryless property for exponential distribution. **[5]**

Q5) a) Find MGF and CGF of Gamma distribution and hence find its expectation and variance. **[8]**

b) Following is a p.d.f of a continuous random variable X: **[7]**

$$f(x) = \begin{cases} k(3+2x), \; for 2 \le x \le 4 \\ 0, \qquad otherwise \end{cases}$$

Find

i) k

ii) Var X

Q6) a) Suppose two dimensional continuous r.v(X,Y) has a joint P.D.F **[8]**

$$f(x,y) = \begin{cases} \frac{1}{8}(6-x-y), \; for 0 \le x < 2, 2 \le y \le 4 \\ 0, \qquad otherwise \end{cases}$$

Find

i) $P(x < 1, y < 3)$

ii) $P(x + y < 3)$

iii) $P(x < 1 \mid y < 3)$

b) Of a large group of men. 10% are under 60 inches in height and 45% are between 60 and 65 inches. Assuming a normal distribution find mean height and standard deviation. **[7]**

Total No. of Questions : 7]

SEAT No. :

P1491

[Total No. of Pages : 2

[5370]-101
M.C.A. (MGT Faculty)
IT 11 : COMPUTER ORGANIZATION
(Semester - I) (2012 Pattern) (New)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and Q.7 are compulsory.***
2) ***Solve any four questions from the remaining.***
3) ***Draw neat diagrams wherever necessary.***

Q1) a) Draw and explain 32-bit (80486) architecture in detail. **[10]**

b) Explain types of software. **[5]**

Q2) Convert the following: **[5 × 2 = 10]**

a) $(31.125)_{10} = (?)_{2}$

b) $(5471)_{8} = (?)_{16}$

c) $(4BD)_{16} = (?)_{10}$

d) $(1101.11)_{2} = (?)_{10}$

e) $(207.5)_{10} = (?)_{16}$

Q3) Explain Instruction and Execution cycle in detail. **[10]**

Q4) Differentiate in between RISC and CISC. **[10]**

Q5) What is multiplexer? Draw and explain 4:1 multiplexer in detail. **[10]**

Q6) What is cache memory? Explain any one cache mapping technique in detail. **[10]**

P.T.O.

Q7) Write short note on the following (any three): **[3 × 5 = 15]**

a) Performance of processors.

b) Logic gates.

c) Encoder.

d) Features of 64-bit architecture.

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Total No. of Questions : 9]

SEAT No. :

P1492

[Total No. of Pages : 3

[5370]-102
M.C.A. - I (Mgmt.)
IT - 12 : C - PROGRAMMING
(Semester - I) (2012 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Solve any six questions from Q. No. 2 to Q. No. 9.***
3) ***Assume suitable data whenever necessary.***
4) ***Figures to the right indicates full marks.***

Q1) Find and explain the outputs of the following. (any four): **[10]**

a)
```
void main ()
{  char *s [ ] = {"PUNE", "MUMBAI", "DELHI", "CHENNAI"};
   char **p;
   p = s;
   printf ("%s", *p);
   printf ("%s", *p++);
   printf ("%s", ++ *p);
   printf ("%s", *(s + 3));
}
```

b)
```
# define me (x) (x * x)
# define you (x) (me (x)* x)
void main ()
{ int a = – 2; int b;
   b = me (a) * a;
   printf ("%d", b);
   b = you (a) * me (a)/a;
   printf ("%d" b);
}
```

P.T.O.

c)
```
void main ()
{  int num, i;
   num = 5;
   for (i = 0; i < 10; i ++)
   {  add ( & num);
      printf ("value of num is % d", num);
   }
}
void add (int * pvar)
{ (*pvar) ++; }
```

d)
```
void main ()
{ enum col (Red, green = 5, white, blue, pink, yellow = 10);
  printf ("%d %d %d %d %d %d", Red, green white, blue, pink, yellow);
}
```

e)
```
void main ()
{ int x = y = 3, z = 50;
  x = y << 2;
  y = z >> 3;
  printf ("x = %d \n y = %d\n z = %d", x, y, z);
}
```

Q2) a) Write a program to print the following pattern. **[5]**

```
1
A
2  3
B  C
4  5  6
D  E  F
7  8  9  10
G  H  I  J
```

b) Write a function to accept any decimal no. and display it's equivalent octal number. **[5]**

Q3) Write a program to accept multiword string and a character. Find and display the last occurance, first occurance, and number of occurances of character. **[10]**

Q4) struct employee **[10]**

```
{  int emp_id;
   char emp_name [20];
   char dt_join [8];   /* DDMM YYYY */
   float sal;
};
```

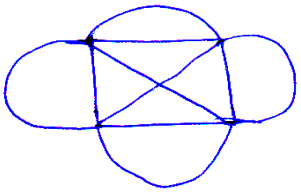
Using above structure write a program to accept records of 50 employees. Find and display the list of employees working more than ten years. Also display all employees joined in the year 2012.

Q5) a) Write a recursive function to generate and display fibonacci series. **[5]**

b) Write a program to reverse the contents of an array containing 10 integers. **[5]**

Q6) Write a program to find a word in file and Replace all occurances of Find_word with Replace_word. Accept Find_word and Replace_word from keyboard. **[10]**

Q7) a) Write a program to display the following. **[5]**



b) Write program to transpose 5 × 5 matrix and display matrix. **[5]**

Q8) Write a program to read the integer numbers stored in FILE1. **[10]**
Write + ve no.s into FILE2 and – ve no.s into FILE3

Q9) Write a note on: **[10]**

a) Difference between Union & structure.

b) Preprocessor Directive.

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Total No. of Questions : 7]

SEAT No. :

P1493

[Total No. of Pages : 2

[5370]-103
M.C.A. - I (Management)
IT - 13 : SOFTWARE ENGINEERING
(Semester - I) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and Q.7 are compulsory.***
2) ***Attempt any 4 out of remaining.***
3) ***Figures to the right indicate full marks.***
4) ***Write assumptions whenever necessary.***

Q1) A RTO has laid down following procedure for obtaining Permanent Driving License for various non-commercial vehicles. A candidate for valid Learning License can submit his form and License test fees through Motor Driving School. The data on form is entered and exact date and time of driving test will be allocated to the candidate. On the days of test candidate can bring his own vehicle or can use vehicle of Motor Driving School. The available Inspector will conduct Test and ask question related to traffic signs to the candidate. On the basis of test and answer, the concerned Inspector puts his remarks on the form and makes signature along with his name and designation. If the remark is PASS, the candidate has to pay License Fees at a cash counter and a cash receipt will be given to candidate. Candidate can collect License after 3 days. The clerk at cash counter adds the test data, Fees data to the form record. The form test data then is compiled by EDP officer and generates license for the day and hands it over to counter clerk. A License will be given to candidate after the cash receipt. **[20]**

a) Draw First Level DFD.

b) Prepare software requirement specification in detail.

Q2) All the states in country have arranged to implement value added tax (VAT) on the various commodities sold in their respective states. The VAT rules are as follows. If the commodity is product within the state 4% VAT is applicable if commodity falls in Specified List. **[10]**

- Non-listed Commodities will be charged 8% VAT.
- If the commodity is from outside state, 8% VAT is applicable for all.
- If the commodity is imported, then 12% VAT is applicable for all.
- If it is second sale, the 4% VAT is applicable for all Commodities.

Draw Decision Table and Decision Table and write Structured English to compute VAT.

P.T.O.

Q3) Case tools assists various phases of software development-justify. **[10]**

Q4) What is Documentation? Explain various types of documentation in detail. **[10]**

Q5) Explain method of estimating software maintenanc cost. Give various components of legacy system. **[10]**

Q6) Explain SDLC with its Limitations. **[10]**

Q7) Write short notes on (any 4) **[10]**

a) Reverse Engineering
b) Object Oriented Methodology
c) Agile process
d) Spiral Model
e) Web engineering

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Total No. of Questions : 6]

SEAT No. :

P1494

[Total No. of Pages : 1

[5370]-104

M.C.A. (Management Faculty)

BM - 11 : PRINCIPLES AND PRACTICES OF MANAGEMENT AND ORGANIZATIONAL BEHAVIOR

(2012 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question no. 1 is compulsory.***
2) ***Attempt any 3 from the remaining.***
3) ***Figures to the right indicate full marks.***

Q1) a) Explain the term organisational behaviour along with its significance in IT Industries. **[15]**

b) Explain Scientific Management theory in detail. **[10]**

Q2) "Decision making is an essential function of management" comment. Discuss the steps of decision making process. **[15]**

Q3) Explain how the concept of Johari Window can be applied to resolve intrapersonal and interpersonal conflicts. **[15]**

Q4) Define Group Dynamics. Explain how group play an important role in the development of an individual. **[15]**

Q5) Explain how a good header can contribute in the growth of an organisation with respect to the path-goal theory of leadership. **[15]**

Q6) Write short notes (any three). **[15]**

a) Levels of Management.

b) Maslow's Need Hierarchy Theory.

c) Team Building.

d) OB-Need and Importance.

e) Transactional Analysis.

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Total No. of Questions : 4]

SEAT No. :

P1495

[Total No. of Pages : 3

[5370]-105

M.C.A. (Management Faculty)

MT - 11 : DISCRETE MATHEMATICS

(2012 and 2013 Pattern) (Semester - I) (Theory)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Solve any two from question numbers 2, 3 & 4.***
3) ***Use of statistical table and non programmable calculator is allowed.***
4) ***Figures to the right indicate full marks.***

Q1) Attempt the following:

a) Test whether '$\neg A$' follows logically from the following set of premises:

$P_1 : \neg A \vee B,\ P_2 : \neg(B \wedge C),\ P_3 : \neg C \rightarrow D,\ P_4\ \neg D$ **[5]**

b) Let A = {1, 2, 3, 4} and R = {(1, 1), (2, 1), (2, 3), (4, 2), (2, 2)}. Find R + (Transitive closure) by using Warshall's algorithm. **[5]**

c) How many different flags can be designed consisting of 6 strips using four colours red, green, blue and yellow such that no two adjacent strips have same colour? **[5]**

d) Find the number of integer valued solutions of the following equation. **[5]**

$x_1 + x_2 + x_3 = 17 \qquad x_1 > 1, x_2 \geq 2, x_3 > 3$

e) Ten persons attended a party, where before joining the party they deposited their hats to the gatekeeper. The hats are returned randomly by the gatekeeper. How many ways hats can be distributed such that exactly 4 of them get back their correct hats? **[5]**

f) Show that $(Z^*_{12}, \times_{12})$ is an abelian group. Where Z^*_{12} is a set of all prime residue classes modulo 12. **[5]**

P.T.O.

Q2) Solve the following:

a) Obtain PCNF for the following. **[5]**

$P \wedge (P \rightarrow Q)$

b) Let f and g be two real valued functions defined as: **[7]**

$f(x) = \frac{2x^2 + 3}{5}; g(x) = 3x - 4$ find:

i) $f \circ f$

ii) $g \circ f$

iii) $f \circ g$

c) i) Use multinomial theorem to find the coefficient of $x^6\ y^4\ z^2$ in the expansion of $(x^3 + 4y^2 - 3z)^6$. Also find number of terms in the expansion.

ii) In how many ways 4 Indians, 3 Frenchman, 2 Italian and 1 German can be seated around a circular table such that people with same nationality sit together?

[8]

Q3) Solve the following:

a) Using predicates and quantifiers symbolize following statements: **[5]**

i) All cats are animals.

ii) Some students are clever.

b) Write code words generated by H where: **[7]**

$$H = \begin{pmatrix} 1 & 1 & 1 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 & 0 & 1 \end{pmatrix}$$

What is the minimum weight of the non-zero code word in the above code words? How many errors can the code generated by H detect?

c) i) Using combinatorial argument prove the following binomial identity. $\binom{2n}{2} = 2\binom{n}{2} + n^2$. **[4]**

ii) Among 600 families, 100 families have no children, 200 have only boys, 200 have only girls. How many families have both boy(s) and girl(s)? **[4]**

Q4) Solve the following:

a) Let X = (a, b, c, d, e} and R : X $\rightarrow$ X be defined as: **[5]**

R = {(a, a), (a, c), (b, a), (b, d), (c, e), (d, e), (d, a), (e, b), (e, d)} find:

i) Converse of relation R.

ii) Relation matrix.

iii) Graph of relation.

b) Use appropriate statement variables to write the following argument in symbolic from. Also test its validity. If you like mathematics, then you will like logic. You do not like logic. Therefore you do not like mathematics. **[7]**

c) i) Find all distinct left cosets of (4Z, +) in (Z, +), where 4Z is set of all multiples of 4.

ii) Determine whether (G. x) forms an abelian group, where G = {1, –1, i, –i}.

[8]

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Total No. of Questions : 7] **SEAT No. :**

P2757 **[Total No. of Pages : 1**

[5370]-2
M.C.A. (Management Faculty)
BM - E1 : MIS FRAMEWORK AND IMPLEMENTATION
(2008 Pattern) (Semester - IV) (Elective)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:-

1) ***Q.No. 1 and 7 are compulsory.***
2) ***Solve any four questions from remaining.***
3) ***Figures to the right indicate full marks.***

Q1) Explain the informational needs of the managers working at different levels of managerial hierarchy. **[10]**

Q2) Explain the impact of IT infrastructure on the socio-economic environment of the organization. **[10]**

Q3) What is Expert System? Explain the components of Expert System. **[10]**

Q4) Elaborate different benefits of IT applications can provide through office automation. **[10]**

Q5) Define MIS. Explain its features and limitations. **[10]**

Q6) How information technology changing the way when marketing function is performed? Explain. **[10]**

Q7) Write short notes on (any four): **[4 × 5 = 20]**

a) Difference in MIS and EIS
b) MIS as an instrument for organization change
c) Group Decision Support System
d) Critical success factor in implementing IT applications
e) Decision Support System

Total No. of Questions : 8]

SEAT No. :

P1496

[Total No. of Pages : 4

[5370]-201

M.C.A. (Management Faculty)

IT - 21 : OBJECT ORIENTED PROGRAMMING USING C++

(2012 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Solve any six from question No. 2 to 8.***
3) ***Figures to the right indicate full marks.***

Q1) Explain the output of following program. **[10]**

a)

```
Main ()
{
   Cout << setw (10);
   Cout << setfill ('#');
   Cout sety (ios : : internal, ios : : adjust field);
   Cout << set ios flags (ios : : showpoint);
   Cout << Set precision (5);
   Cout << 11.456;
   Cout << Endl;
   Cout << setw (10);
   Cout << set ios flags (ios : : show pos);
   Cout << 10.5;
   getch ();
}
```

b)

```
namespace xyz
{
   int x = 10;
}
void main ()
```

P.T.O.

```
{
    int y = 200;
    int x = 100;
  Cout << Endl << "x =" << x;
  Using namespace xyz;
  Cout << Endl <<"x =" << x;
  Cout << Endl <<"y =" <<y;
}
```

c)
```
# include <iostream.h>
Class MCA
{
  Public : int a;
  Private : int b;
  Protected : int c;
};
void main ()
{
  MCA obj 1;
  Cout << obj 1. a <<obj 1. b << obj 1. c;
}
```

d)
```
Class Test
{ Public :
  int operator = = (Test)
{ if (* this = = t)
{ Cout <<"Both are Same";
  return 1;
}
Else
{
  Cout <<"Both are different";
  return 0;
```

```
}
}
};
Void Main ()
{
   test +1, +2;
   +1 = +2
}
```

Q2) a) Explain friend function with example. **[5]**

b) Explain local class with example. **[5]**

Q3) a) Write a program to overload '<' operator to compare to strings. **[5]**

b) Explain with example to convert basic type to class type. **[5]**

Q4) a) Explain following manipulators. **[5]**

i) Set w ii) Setfill

iii) setprecision iv) Hex

v) Reset ios flag

b) Explain pure virtual function with example. **[5]**

Q5) A class contain following information as PRN, student-Name, PER-marks. **[10]**

Write a program to perform following operation in file.

a) Add Record

b) Display all Records

c) Modify Record

Q6) What is virtual base class. Explain with suitable example. **[10]**

Q7) a) Write a function template largest () to find out largest of three elements. **[5]**

b) Explain the following: **[5]**

i) Rethrow an exception

ii) Catching all exception

Q8) Write short note on (any two): **[10]**

a) Run time type information (RTTI).

b) Containers in STL.

c) Namespace.

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Total No. of Questions : 7]

SEAT No. :

P1497

[Total No. of Pages : 2

[5370]-202

M.C.A. (Management Faculty)

IT - 22 : DATABASE MANAGEMENT SYSTEM

(2012 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. No. 1 is compulsory.***
2) ***Solve any five questions from remaining.***
3) ***State assumptions wherever necessary.***

Q1) A tours and travels system is to be computerized which has following details. **[20]**

a) Customer books seat in a tour.

b) If booking by customer is in bulk then he can avail discount.

c) A tour has many stations.

d) A tour rate is calculated as per distance to be travelled (kms).

e) A tour has tour manager, Bus and a driver.

f) Assume that driver drives the assigned bus for the above case draw an ER diagram and normalize (3 NF) file layout.

Q2) Explain any five notations used in relational algebra with example. **[10]**

Q3) Explain the concept of serializability and its types. **[10]**

Q4) Explain various recovery techniques. **[10]**

Q5) Explain 2-tier and 3-tier database architecture with its applications. **[10]**

P.T.O.

Q6) Explain mandatory and discretionary access control methods. **[10]**

Q7) Write short notes on (any two): **[10]**

a) Data Independence

b) Tertiary storage

c) ACID properties

d) Non-SQL Database

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Total No. of Questions : 7]

SEAT No. :

P1498

[Total No. of Pages : 1

[5370]-203

M.C.A. (Management Faculty)

IT - 23 : OPERATING SYSTEM CONCEPTS

(Semester - II) (2012 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 7 is compulsory.***
2) ***Solve any five from question 1 to question 6.***

Q1) How NFS differs from NTFS? Explain in brief about directory structure. **[10]**

Q2) Explain various disk scheduling algorithms with example. **[10]**

Q3) Explain TLB in details. **[10]**

Q4) Explain process synchronization concept with the help of semaphore. **[10]**

Q5) Different memory partitions of 100k, 500k, 200k, 300k and 600k (in order) are given. How would each of the first fit, worst fit and best fit algorithm places process of 212k. **[10]**

Q6) Explain features of NOS and compare it with GOS. **[10]**

Q7) Write short notes (any four): **[20]**

a) RMI
b) Context switching
c) Simulation
d) Android
e) FCB

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Total No. of Questions : 7]

SEAT No. :

P1499

[Total No. of Pages : 1

[5370]-204

M.C.A. (Management Faculty)

BM - 21 : MANAGEMENT INFORMATION SYSTEM AND BUSINESS INTELLIGENCE

(2012 & 2013 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 7 is compulsory.***
2) ***Attempt any five equestions from Q.1 to Q.6.***

Q1) Define Information and data. Explain the factors in deciding quality of information and data. **[10]**

Q2) Explain role of M.I.S. in today's Business world. Write the MIS structure based on organizational functions? **[10]**

Q3) Define Decision Making Process. Explain static and Dynamic models. **[10]**

Q4) Define DSS. Explain characteristics & capabilities of DSS. **[10]**

Q5) What is ESS? Explain characteristics and Benifits of EIS? **[10]**

Q6) What is Business Intelligence? Explain BI Applications in various Domains. **[10]**

Q7) Write short notes (any four): **[4 × 5 = 20]**

a) Data mining
b) OLAP
c) Expert system
d) Simulation
e) Law of requisite variety
f) XLM iner

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Total No. of Questions : 8]

SEAT No. :

P1500

[Total No. of Pages : 2

[5370]-205

M.C.A. (Management Faculty)

IT - 24 : ENTERPRISE RESOURCE PLANNING

(2012 & 2013 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 is compulsory.***
2) ***Solve any five from Q.2 to Q.8.***
3) ***Figure to right indicate full marks.***

Q1) Banglore City Pride is a multiplex theatre. It is having three branches in Banglore. Presently, they are using traditional systems for their all types of communications. To increase the business the management has decided to implement ERP. Prepare detailed ERP implementation report of successful ERP system for Banglore City Pride. **[20]**

Q2) What is ERP? Explain the need of ERP w.r.t. todays business scenario. **[10]**

Q3) Explain ERP implementation life cycle in detail. **[10]**

Q4) Define information systems and explain ESS in detail. **[10]**

Q5) Describe modules and sub-modules in Human-resource management system. **[10]**

Q6) Explain the importance of post-implementation review and maintenance of ERP with the help of e-commerce system. **[10]**

P.T.O.

Q7) Define Data Warehousing and explain its architecture in detail. **[10]**

Q8) Write short notes (any two): **[10]**

a) OLAP

b) ERP vendor

c) ERP market

d) Gap analysis

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Total No. of Questions : 9] SEAT No. :

P2758 [Total No. of Pages : 3

[5370]-3
M.C.A. (Faculty of Management) (Theory)
FOUNDATION OF DECISION PROCESS
(2008 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:-

1) ***Attempt any Seven from the following***
2) ***Use of non-programmable calculators is allowed.***
3) ***Figures to the right indicate full marks.***

Q1) Explain the dominance rules in Game with proper example. **[10]**

Q2) Solve the game for the given pay-off matrix: **[10]**

–5	3	1	20
5	5	4	6
–4	–2	0	–5

Q3) A management is faced with a problem of choosing one of three products for manufacturing. The potential demand for each product may turn out to be good, moderate or poor. The probabilities for each of the states of nature were estimated as follows: **[10]**

Product	Nature of Demand		
	Good	Moderate	Poor
X	0.70	0.20	0.10
Y	0.50	0.30	0.20
Z	0.40	0.50	0.10

The estimated profit or loss in Rs. Under the three states may be taken as:

Product	Good	Moderate	Poor
X	30000	20000	10000
Y	60000	30000	20000
Z	40000	10000	–15000

Prepare the expected value table and advise the management about the choice of the product.

P.T.O.

Q4) A bakery keeps stock of a popular brand of cakes. Previous experience shows the daily demand pattern for the cakes with associated probabilities as given below: **[10]**

Daily Demand (Units)	0	10	20	30	40	50
Probability	0.01	0.20	0.15	0.50	0.12	0.02

Use the following sequence of random numbers to estimate demand for next 10 days. Also find average demand per day.

25 39 65 76 12 5 73 89 19 49

Q5) Explain the steady state Markov process with example. **[10]**

Q6) A television repairman finds that the time spent on his jobs has an exponential distribution with a mean of 30 minutes. If he repairs the sets in the order in which they came in, and if the arrival of sets follows a Poisson distribution with an approximate average rate of 10 per 8 hour day, what is the repairman's expected idle time each day? How many jobs are ahead of the average set just brought in? **[10]**

Q7) An executive has to take a decision from four alternatives $\Delta_1, \Delta_2, \Delta_3$ and Δ_4. Events may lead such that any of the four results may occur R_1, R_2, R_3 and R_4. The probability of occurances of these results are as follows: **[10]**

$P(R_1) = 0.50$; $P(R_2) = 0.20$; $P(R_3) = 0.20$; $P(R_4) = 0.10$

	R_1	R_2	R_3	R_4
Δ_1	14	9	10	5
Δ_2	11	10	8	7
Δ_3	9	10	10	11
Δ_4	8	10	11	13

Show this decision situation in the form of decision tree and indicate most preferred decision and calculate corresponding expected values.

Q8) A manufacturer of bicycle has estimated the following distributing of demand for a particular type of bicycle. **[10]**

Demand	0	1	2	3	4	5	6
Probability	0.14	0.27	0.27	0.18	0.09	0.04	0.01

Each cycle costs him Rs.7000 and he sells them for Rs.10000 each. Any cycles that are left unsold at the end of the season must be disposed off for Rs.6000 each. How many cycles should be in the stock so as to maximize his expected profit?

Q9) Explain the following terms with illustration: **[10]**

a) Pay-off

b) Saddle point

c) Optimum Strategy

d) Mixed Strategy

Total No. of Questions : 8]

SEAT No. :

P1501

[Total No. of Pages : 2

[5370]-301
M.C.A. - II (Management Faculty)
IT - 31 : WEB TECHNOLOGIES
(Semester - III) (2012 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and Q.8 are compulsory.***
2) ***Solve any five from remaining.***
3) ***Draw neat and labeled diagram.***
4) ***Figures to the right indicate full marks.***

Q1) Explain XML DTD with example. **[10]**

Q2) What is External CSS? Explain with examples. **[10]**

Q3) Explain ,htaccess and. htpasswd file and how can they be configured to implement authentication? **[10]**

Q4) Explain SOAP with example. **[10]**

Q5) Explain following tags with example. **[10]**

a) <UL>

b) <SPAN>

c) <DIV>

d) <Table>

Q6) Explain jQuery's AJAX related methods with example. **[10]**

Q7) Explain event handling in JavaScript. **[10]**

P.T.O.

Q8) Show notes (any two): **[10]**

a) Math and String Objects in JavaScript

b) Getter setter and Chaining in JQuery

c) Web publishing

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Total No. of Questions : 7]

SEAT No. :

P1502

[Total No. of Pages : 2

[5370]-302

M.C.A. (Management Faculty)

IT - 32 : DATA COMMUNICATION AND COMPUTER NETWORKS

(2012 & 2013 Pattern) (Semester - III)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and Q.7 are compulsory.***
2) ***Solve any four from remaining.***
3) ***Figure at right indicate full marks.***

Q1) a) A network contains three segments as follows: **[8]**

i) Firs segment has 5 departments each having 200 computers.

ii) Second segment has 150 computers.

iii) Third segment has 64 computers.

Suggest suitable IP Addressing Scheme for each segment. All the segments should be able to communicate amongst each other in Local Area Network.

b) Explain error status codes in HTTP. **[7]**

Q2) Explain Circuit Switching, Message Switching and packet Switching with suitable diagrams. **[10]**

Q3) Explain Domain Names and SOA records associated with it. **[10]**

Q4) Explain IPV6 packet format and addressing scheme. **[10]**

Q5) Explain e-mail protocols POP and IMAP. **[10]**

Q6) Explain Symmetric and Asymmetric key Cryptogrophy. **[10]**

P.T.O.

Q7) Write short notes (any three) : **[3 × 5 = 15]**

a) Error Detection and Correction techniques.

b) Routing.

c) MIME.

d) Wi-Fi Standard 802.11x.

e) Proxy Server.

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Total No. of Questions : 7]

SEAT No. :

P1503

[Total No. of Pages : 2

[5370]-303

M.C.A. (Management Faculty)

IT - 33 : DATA STRUCTURE USING C++

(2012 Pattern) (Semester - III)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question 1 is compulsory.***
2) ***Solve any four questions from Q. 2 to Q. 7.***

Q1) Write short note on any two: **[10]**

a) Generalized Linked List

b) B^+ Tree

c) Queue empty and full condition of a circular queue.

Q2) a) A graph is implemented by adjacency matrix. Write a non-recursive algorithm for depth first search. **[7]**

b) Write a C++ code for circular queue with insert, delete & display function. **[8]**

Q3) a) Write a C++ code for addition of two polynomials. **[7]**

b) Convert prefix to postfix form and show contents of stack at each step.

*+a-bc/-de+-fgh **[8]**

Q4) a) Write a program to evaluate postfix expression. **[7]**

b) Write C++ code for insertion & deletion of elements in a queue. **[8]**

Q5) a) Write a function for Right-Left rotation. **[7]**

b) Draw AVL tree for following: **[8]**

40, 20, 10, 50, 90, 30, 60, 70, 95

P.T.O.

Q6) a) Write a function to insert node in threaded binary tree. **[7]**

b) Draw a binary search tree for following. Also write preorder traversal for this. **[8]**

23, 89, 34, 67, 99, 2, 55, 45, 78, 12, 56

Q7) a) Write a program to implement priority queue using Link list. **[7]**

b) Write a function to insert an element in B tree. **[8]**

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Total No. of Questions : 7]

SEAT No. :

P1504

[Total No. of Pages : 1

[5370]-304

M.C.A. (Management Faculty)

IT - 34 : ADVANCED DATABASE MANAGEMENT SYSTEM

(Semester - III) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 & Q. 7 are compulsory.***
2) ***Attempt any 4 questions from remaining.***
3) ***Draw figure wherever it is required.***

Q1) a) What is I/O parallelism? Explain various operations performed in interoperation parallelism. **[10]**

b) Explain the database design of ORDBMS. Compare RDBMS & ORDBMS. **[10]**

Q2) What are Association Rules? Explain Frequent-pattern Tree algorithm and partition Algorithm. **[10]**

Q3) Explain Data warehousing architecture & Schemas in detail. **[10]**

Q4) What is Concurrency Control? Explain all protocols in Concurrency Control. **[10]**

Q5) What is OLAP? Explain the operations on data cubes. **[10]**

Q6) Explain any two Classification algorithms in detail. **[10]**

Q7) Write short notes (any 2): **[10]**

a) N-tier Architecture.
b) Requirement of Mobile databases.
c) Vertical Fragmentation.
d) Directory System.
e) XML query.

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Total No. of Questions : 7]

SEAT No. :

P1505

[Total No. of Pages : 2

[5370]-305

M.C.A. (Management Faculty)

IT - 35 : OBJECT ORIENTED ANALYSIS AND DESIGN

(2012 Pattern) (Semester - III)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 is compulsory.***
2) ***Solve any five from the remaining.***
3) ***Mention assumptions made for solving the case studies.***

Q1) A website for restaurant has option for ordering food online. User can go through the menu and select items. Seasonal items are available for particular season other items can be ordered at any time. System gives an acknowledgement for the order. Every order is followed by payment module that accepts card details. If user expects home delivery then additional charges will be automatically added to the amount for calculation of bill. **[20]**

Draw usecase diagram and class diagram for the above case.

Q2) Explain Object Oriented Design (OOD) methodology in detail. **[10]**

Q3) a) Draw a sequence diagram for registering a billing complaint of your mobile phone. **[5]**

b) Draw an activity diagram for sending E-mail to your friend. **[5]**

Q4) Discuss the structure of Class Responsibility Collaborator approach with an example. **[10]**

Q5) Consider an automatic water level control system, which is used for controlling the water flow. Identify different states and draw a state transition diagram. **[10]**

P.T.O.

Q6) a) Explain Aggregation and Composition with examples. **[5]**

b) Explain the four phases of Rational Unified Process. **[5]**

Q7) Write short notes on (any 2): **[10]**

a) Mapping Object to Relational Data Structure.

b) Guidelines for preparing test plan.

c) Categories of pattern.

d) Design Refinement.

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Total No. of Questions : 7] **SEAT No. :**

P1732 **[Total No. of Pages : 2**

[5370]-4

M.C.A. (Management Faculty) (Semester - IV)

COLLABORATIVE MANAGEMENT

(2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:-

1) ***Answer any FIVE questions.***
2) ***Support your answer with relevant examples.***
3) ***Figures to the right indicate full marks.***

Q1) a) Define strategy and strategic management. **[14]**

b) Explain the following terms: Vision, Mission, Objectives, Purpose and Goals.

Q2) a) Explain SWOT Analysis in detail. **[14]**

b) Explain GAP Analysis in detail.

Q3) Explain Mc Kinsey's 7s framework with the help of suitable examples. **[14]**

Q4) Leadership style, corporate culture, values and ethics play a crucial role in effective implementation strategy. Comment. **[14]**

Q5) Discuss the assessment of profiles of products/businesses and development cycles of products through BCG matrix. **[14]**

P.T.O.

Q6) Explain the following terms : Strategic Alliances, Lease Financing, Venture Capital and Outsourcing. **[14]**

Q7) Write short notes on (any two): **[14]**

a) GE 9 Cell Model

b) Corporate Planning

c) Social Responsibility

Total No. of Questions : 8]

SEAT No. :

P1506

[Total No. of Pages : 2

[5370]-401

M.C.A. (Management Faculty)

IT - 41 : JAVA PROGRAMMING

(2012 & 2013 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 and 8 are compulsory.***
2) ***Answer any five from Q. No. 2 to 7.***
3) ***Figures ot the right side indicate full marks.***
4) ***Draw neat diagram wherever necessary.***

Q1) Answer following: **[10]**

a) Describe Event delegation model.

b) List out any four methods of Hash Map Class.

c) Which methods are used for inter-thread communication.

d) What is Port?

e) Explain Object Serialization?

Q2) Write JDBC application which will accept age from command line. If given age is less than '18' years then throw "NOTEligible for Voting" user defined exception? **[10]**

Q3) Write Java application to demonstrate add, replace, delete and copy node in Hashset. **[10]**

Q4) Write a client-server Socket program to accept a string from client. The server will check whether the string is a palindrome or not and send response. **[10]**

Q5) Write an awt application which will have a list, a text field & a button with caption 'Add' when 'Add' button is clicked contents of text field should be added to list. **[10]**

P.T.O.

Q6) What is exception? Explain types of exception with example? **[10]**

Q7) Explain Architecture of RMI? Write RMI application to calculate simple interest. Accept amount, rate and period from user. **[10]**

Q8) Short notes (any two): **[10]**

a) Lay out managers.

b) Runnable Interface.

c) Garbage Collection.

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Total No. of Questions : 8]

SEAT No. :

P1507

[Total No. of Pages : 2

[5370]-402
M.C.A. (Management Faculty)
IT - 42 : MOBILE COMPUTING
(2012 & 2013 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question 1 & 8 are compulsory.***
2) ***Answer any three from the remaining.***
3) ***Neat diagrams must be drawn where necessary.***
4) ***Figures to the right side indicate full marks.***

Q1) a) What is Handsoff its types & Why is it required? **[10]**

b) What is Edit Text? How to create it? Explain with the example how to constraint the user input with Edit Text. **[10]**

Q2) a) What is WLAN? What are its advantages and Disadvantages. **[5]**

b) What is Bluetooth? Explain the architecture of the Bluetooth. **[5]**

Q3) a) What is Palm OS? Explain the architecture of Palm OS. **[5]**

b) What is SDK? Explain the various libraries in SDK. **[5]**

Q4) What is hoarding? Explain the various techniques used in hoarding with suitable example. **[10]**

Q5) What is G-Talk? Explain the process for managing the chat sessions with a suitable example. **[10]**

Q6) What are Menus? Write an android application which will contain three menu Items and perform event handling on clicking the menu items. **[10]**

P.T.O.

Q7) What are File Systems in android? Explain the difference between Internal Storage and External Storage. **[10]**

Q8) a) Write an Android application which will convert temperature into Celsius and Fahrenheit. **[10]**

b) Write an Android application which will open in another activity using Explicit Intent. **[10]**

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Total No. of Questions : 7]

SEAT No. :

P1508

[Total No. of Pages : 1

[5370]-403

M.C.A. - II (Management Faculty)

IT - 43 : INFORMATION SECURITY AND AUDIT

(Semester - IV) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. No. 1 & 7 are compulsory.***
2) ***Solve any four from remaining.***

Q1) Solve the following case study with your own assumptions. **[10]**

Software company aveged the complaint that some of the former employees had accessed & tampered the vital data of company. As on IT head suggest steps to investigate it. Also suggest controls to avoid the same in the feature.

Q2) What are the major threats to Information security. **[10]**

Q3) Explain COBIT in detail with suitable diagram. **[10]**

Q4) Explain ISMS with its conceptual framework. **[10]**

Q5) What are the physical & logical access controls describe it. **[10]**

Q6) Explain PDCA model with diagram. **[10]**

Q7) Write short notes (any four): **[4 × 5 = 20]**

a) CIA.

b) Cyber crime.

c) Auditing standards.

d) BCP & DRP.

e) Copyright Act.

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Total No. of Questions : 8]

SEAT No. :

P1509

[Total No. of Pages : 2

[5370]-404

M.C.A. (Management Faculty)

IT - 44 : DESIGN & ANALYSIS OF ALGORITHMS

(Semester - IV) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

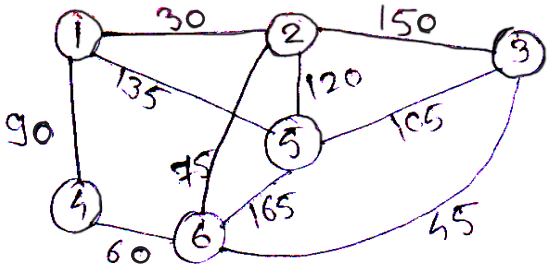
Instructions to the candidates:

1) *Q. 1 and Q. 8 compulsory.*
2) *Solve any five questions from Q.2 to Q.7.*
3) *Figures to the right indicate full marks.*
4) *Make suitable assumptions if necessary.*

Q1) a) Explain Hamiltonian cycle with suitable example. **[5]**

b) Write note on O-notation, Omega notation & Theta notation. **[5]**

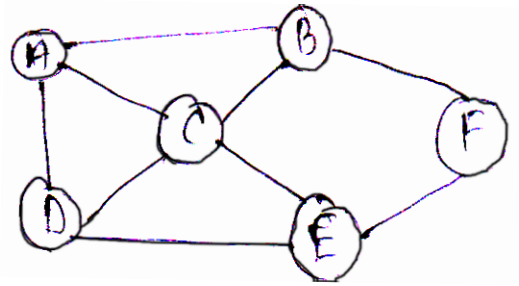
Q2) Define minimum spaning tree, write kruskal's algorithm for finding MST for following graph. **[10]**



Q3) Write & explain optimal merge pattern algorithm? Find merge pattern for given files.

Given list {8} = {44, 28, 35, 10, 12, 18, 56, 9} = n = 8 **[10]**

Q4) a) Apply backtracking method for Graph Coloring. **[5]**



b) Trace the Binary search algorithm for given elements. **[5]**

–15, –6, 0, 7, 9, 23, 54, 82, 101

P.T.O.

Q5) Solve the TSP using Dynamic programming method for directed graph. The edge length matrix is given below: **[10]**

0	10	15	20
5	0	9	10
6	13	0	12
8	8	9	0

Q6) Explain counting sort algorithm for following data. Also state it's time complexity. {5, 2, 4, 5, 4}. **[10]**

Q7) Find the optimal solution for the following knapsack problem **[10]**

N = 3, m = 80, $(P_1, P_2, P_3) = (100, 96, 60)$ & $(\omega_1, \omega_2, \omega_3) = (72, 60, 40)$

Q8) Write short note (any two): **[10]**

a) Explain divide and conquer strategy.

b) Space and time complexity.

c) NP-HARD and NP-complete.

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Total No. of Questions : 5]

SEAT No. :

P1510

[Total No. of Pages : 4

[5370]-405

M.C.A. (Management)

MT - 41 : Optimization Techniques

(2012 & 2013 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Attempt any three from the remaining.***
3) ***Use of non programmable calculators is allowed.***
4) ***Figures to the right indicate full marks.***

Q1) a) Solve the Transportation Problem A company has factories F1, F2, and F3 which supply ware houses at W1, W2 and W3. Weekly factory capacities are 200, 160 and 90 units and ware houses requirement are 180, 120 and 150 units respectively: **[7]**

Origins	W_1	W_2	W_3
F_1	16	20	12
F_2	14	8	18
F_3	26	24	16

b) A small project consists of 10 activities, the details of which are given below: **[7]**

Activity	Time Estimate (Weeks)			Preceding Activity
	Optimistic	Most Likely	Pessimistic	
A	6	8	10	-
B	2	2	2	-
C	1	2	3	A,B
D	6	6	12	A
E	3	4	5	C,D
F	3	3	3	E
G	3	4	5	E
H	4	5	6	C,D
I	6	8	16	F,G
J	1	1	1	I,H

i) Draw the Project Network.

ii) Find the critical path and the expected project completion time.

iii) What is the probability that the project duration does not exceed 32 weeks?

P.T.O.

c) A bank plans to open a single teller facility at a particular centre. It is estimated that 20 customers arrive each hour on an average. On an average 2 minutes are required for processing customer's transaction. Find: **[7]**

i) the proportion of time the teller is idle.

ii) How long the customer has to wait in the bank.

iii) The number of customers waiting for service of teller.

d) In a machine shop, 8 different jobs are being manufactured. The processing times in minutes on two machines A and B are given below: **[7]**

Jobs	1	2	3	4	5	6	7	8
Machine A:	30	45	15	20	80	20	65	10
Machine B:	20	30	50	35	36	40	50	20

Find the sequence of jobs that minimizes the total elapsed time. Also calculate the minimum processing time.

Q2) a) Solve the following LPP: **[7]**

Max : $Z = 12x_1 + 15x_2 + 9x_3$

Subject to: $8x_1 + 16x_2 + 12x_3 \leq 250$

$4x_1 + 8x_2 + 10x_3 \geq 80$

$7x_1 + 9x_2 + 8x_3 = 105$

$x_1, x_2, x_3 \geq 0$

b) The following Failure rates has been observed for a certain type of light bulbs. **[7]**

Week	1	2	3	4	5
% failing at the end of the week	10	25	50	80	100

There are 1000 bulbs in use and it costs Rs. 40 to replace individual bulbs which are burnt out. If all bulbs are replaced simultaneously it would cost Rs. 25 per bulb at fixed intervals. What policy should be adopted and why?

Q3) a) A company plans to consume 9000 pieces of a particular component. Past records indicate that purchasing department had used Rs. 12,000 for placing 500 orders. If the price of component is Rs. 12 and inventory carrying cost is 10% of cost Find: **[7]**

i) The economic order quantity.

ii) Total cost of inventory.

iii) The number of orders per year.

b) A marketing manager has 5 salesmen and 5 sales district. Considering the capabilities of the salesman and the nature of districts. The marketing manager estimates that sales per month for each salesman is given below. Find the optimal assignment of salesman to districts. **[7]**

		District				
Salesman		D_1	D_2	D_3	D_4	D_5
	S_1	32	28	40	28	40
	S_2	40	24	28	21	36
	S_3	41	27	33	30	37
	S_4	22	38	41	36	36
	S_5	29	33	40	35	39

Q4) a) Define: **[7]**

i) Critical Activity
ii) Economic order Quantity
iii) Slack variable
iv) Ordering cost
v) Free float
vi) Unbalanced transportation problem
vii) Unbounded solution

b) Solve the following LPP by using Dual Simplex method: **[7]**

Min: $Z = 5x_1 - 6x_2 - 7x_3$

Subject to: $x_1 + 5x_2 - 3x_3 \geq 15$

$5x_1 - 10x_2 + 10x_3 \geq 0$

$x_1, x_2, x_3 \geq 0$

Q5) a) The time (weeks) and costs of a certain project is given in the following table: **[7]**

Activity	Immediate Predecessor	Normal		Crash	
		Time (Weeks)	Cost	Time (Weeks)	Cost
A	--	12	5000	10	7400
B	A	9	4300	8	5900
C	A	6	3700	4	4900
D	C	3	2500	3	2500
E	B	7	3900	6	4800
F	D	8	4600	5	6100
G	D,F	4	2800	4	2800
H	F	6	4100	3	6200
I	G	7	4800	5	7800

The indirect cost of the project is Rs. 1200 per week. Draw the project network and find the normal duration and cost. If the activities are systematically crashed, then what would be the optimum duration and cost of the project.

b) Customers arrive at a sales counter manned by a single person according to a Poisson process with a mean rate of 18 per hour. The time required to serve a customer has an exponential distribution with a mean of 150 seconds. Find the average waiting time of a customer. **[7]**

Find:

i) The probability that there will be no customers in the system.

ii) The average number of customers in the queue, waiting for the salesman.

iii) The probability that there will be 4 customers in the system.

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Total No. of Questions : 7] **SEAT No. :**

P2759 **[Total No. of Pages : 1**

[5370]-5
M.C.A.(Management Faculty)
BME-5 : Elective-415 : Decision Support System
(Semester - IV) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:-

1) ***Question 1 and 7 are compulsory***
2) ***Answer any four questions from remaining questions.***

Q1) Explain importance of Artificial Intelligence and expert system in DSS. **[10]**

Q2) Discuss the models of ES and DSS integration. **[10]**

Q3) Explain the database organization and structures used in DSS. **[10]**

Q4) Explain characteristics and capabilities of ESS. **[10]**

Q5) What is Data Mining? Explain the classification of data mining tools and techniques. **[10]**

Q6) Define MIS and explain the role of DSS. **[10]**

Q7) Write short notes on (any four): **[20]**

a) SCM
b) OLAP
c) ODSS
d) DSS Implementation
e) GIS

Total No. of Questions : 7]

SEAT No. :

P1511

[Total No. of Pages : 2

[5370]-501

M.C.A. (Management Faculty)

IT - 51 : SOFTWARE TESTING & QUALITY ASSURANCE

(2012 Pattern) (Semester - V)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and 7 are compulsory.***
2) ***Attempt any 4 from the remaining.***
3) ***Figures to right indicate marks.***
4) ***Draw neat labelled diagrams wherever necessary.***

Q1) Write a detailed test plan for an application under consideration which has following features **[15]**

a) Application has web as well as mobile interface.

b) Accepts documents in pdf format.

c) Allows sharing of such digital documents to other authorities and Government organizations.

d) Biometric, password and OTP based security.

e) User validation through PAN/Adhaar/Ration Card/Passport.

f) One time registration and regular login facility. Design appropriate test cases for the above features.

Q2) Explain with suitable examples different techniques for dynamic and static testing. **[10]**

Q3) What is STLC. Elaborate on different stages in STLC. **[10]**

Q4) What is PDCA cycle? Explain its importance for process improvement. What is relevance of Cmm/ISO for process improvement? **[10]**

Q5) a) Calculate cyclomatic complexity for a program that accepts 2 positive integers and displays the division of two. **[5]**

b) Explain the significance of clean room software development in software quality assurance. **[5]**

P.T.O.

Q6) a) With a suitable diagram explain different phases in bug life cycle. **[5]**

b) Performance testing. Elaborate the concept. **[5]**

Q7) Write short notes on (any 3): **[15]**

a) Quality factors

b) Automated testing

c) V and V techniques

d) B V A and Equivalence partitioning

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Total No. of Questions : 8]

SEAT No. :

P1512

[Total No. of Pages : 2

[5370]-502

M.C.A. (Management Faculty)

IT - 52 : SOFTWARE PROJECT MANAGEMENT

(Semester - V) (2012 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 and Q. 8 are compulsory.***
2) ***Calculators are allowed (Non-programmable)***
3) ***State assumptions whenever necessary.***
4) ***Solve any 5 questions from remaining.***

Q1) A recently established software Industry has computerized its Human Resource Management system by using various software applications for Selection, Training, performance Evaluation and Retention of their Employees. You as software Expert need to find out Risk involved in Implementation and Administration of the project. **[10]**

Q2) Explain COCOMO Technique in detail. **[10]**

Q3) What is software Configuration Management? Explain SCM process in detail. **[10]**

Q4) What do you mean by project? Explain project management process in detail. **[10]**

Q5) Describe role of user in various stages of software development. **[10]**

Q6) What is Project Estimation? Explain Function Point Analysis in detail. **[10]**

P.T.O.

Q7) What is software Team Management? Differentiate Directive and Collaborative Management Style. **[10]**

Q8) Short note (any 2): **[2 × 5 = 10]**

a) Gantt chart

b) PMLC

c) Performance management

d) PERT and CPM

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Total No. of Questions : 7]

SEAT No. :

P1513

[Total No. of Pages : 1

[5370]-503

M.C.A. (Management Faculty)

IT - 53 : EMERGING TRENDS IN INFORMATION TECHNOLOGY

(Semester - V) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question no. 1 and question no. 7 are compulsory.***
2) ***Solve any four questions from the remaining.***
3) ***Figures to the right indicate full marks.***

Q1) NIC IT company want to use cloud computing service. You as a cloud service provider suggest a suitable cloud computing model and components required by the user. **[15]**

Q2) Explain different types and security issues with social networking sites. **[10]**

Q3) What is ECM? Explain types of content with suitable example. **[10]**

Q4) What factors and skills contribute to being a successful learner in an e-learning class? **[10]**

Q5) What is E-commerce? Explain B2B E-commerce with suitable diagram. **[10]**

Q6) Explain various electronic payment method. How transactions are performed in E-banking. **[10]**

Q7) Write a short notes on (any 3): **[15]**

a) IMS Vs. ICMS.
b) Drawbacks of Social Networking Sites.
c) Cloud Cabe Model.
d) CMS.
e) POS.

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Total No. of Questions : 7]

SEAT No. :

P1514

[Total No. of Pages : 2

[5370]-504

M.C.A. (Management Faculty)

IT - 54 : ADVANCED DEVELOPMENT TECHNOLOGY

(Semester - V) (2012 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question no. 1 is compulsory.***
2) ***Solve any four from remaining.***
3) ***Figures to the right indicates full marks.***

Q1) Explain data adapter, dataset, data reader, command object, connection object in detail. **[10]**

Q2) Explain server side Management Techniques with example. **[15]**

Q3) Explain any two Navigation controls in detail with the help of web site map file. **[15]**

Q4) Design a form and write code to: **[15]**

a) Populate and display events name in drop downlist.

b) Select a event from DDL and display it's details in underlying textboxes.

c) Add a record.

d) Delete selected record.

e) Edit selected record.

Name of table : Event Master (Event-id, event name, start-date,-end-date, venue)

Name of server : MYASPDB (SQL server)

Q5) a) Explain ASP.NET Architecture in detail. **[10]**

b) Write a program to implement Hit counter using global asa*x* file. **[5]**

P.T.O.

Q6) Explain following controls (any three): **[15]**

a) Image Hap control.

b) Fileup load control.

c) Checkbox control.

d) Treeview control.

Q7) Write short notes on following (any three): **[15]**

a) Validating control (any two).

b) Any two Client Side State Management Technique.

c) Name spaces.

d) Exception Handling.

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Total No. of Questions : 7]

SEAT No. :

P1515

[Total No. of Pages : 1

[5370]-505

M.C.A. (Management Faculty)

IT - 55 : ADVANCED INTERNET TECHNOLOGY

(Semester - V) (2012 & 2013 Pattern)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question 1 & 7 are compulsory.***
2) ***Answer any four question from remaining (Q2-Q6).***
3) ***neat diagrams must be drawn wherever necessary.***
4) ***Figures ot the right side indicate full marks.***

Q1) a) What is JSP? Explain JSP elements with example. **[10]**

b) Explain Spring MVC Architecture. **[5]**

Q2) Write PHP code to accept CET exam registration information from the students, store it into the database. **[10]**

Q3) Explain how we can manage SESSION with suitable examples in JSP. **[10]**

Q4) What is dependency injection? Explain different types of Ioc. **[10]**

Q5) Design html page to display the available CDs with check box. Allow user to select multiple check box & submit form. Write Servlet code to display details about CDs those are checked. **[10]**

Q6) Explain CGI architecture and file handling in Perl with suitable example.**[10]**

Q7) Write short notes (any 3): **[15]**

a) Benefits of spring framework.
b) Aspect oriented programming (AOP) in spring.
c) JSP directives.
d) Perl array functions.
e) PHP mail function.

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Total No. of Questions : 7] **SEAT No. :**

P2760 **[Total No. of Pages : 1**

[5370]-6
M.C.A. (Management Faculty)
IT-51 : Human Computer Interface
(Semester - V) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Q.1 is compulsory.***
2) ***Answer any five from the remaining(Q2-Q7).***

Q1) Answer any four: **[4 × 5 = 20]**

a) What are the guidelines for data entry?
b) What are the goals of system engineering?
c) Explain individual window design.
d) Write icon-specific guidelines.
e) Explain presentation styles for error messages.

Q2) Explain OAI Model for Web site Design. **[10]**

Q3) Explain four phase framework for textual search. **[10]**

Q4) Explain eight golden rules of Interface design. **[10]**

Q5) Explain three pillars of design. **[10]**

Q6) Explain Goals of co-operations. **[10]**

Q7) Write short note on (Any two): **[10]**

a) Response time and display rate
b) Speech recognition
c) Surveys.

Total No. of Questions : 7] **SEAT No. :**

P2761 **[Total No. of Pages : 1**

[5370]-7
M.C.A. (Management Faculty)
ITE1 : PROGRAMMING LANGUAGE PARADIGM
(2008 Pattern) (Elective)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to candidates:-

1) ***Question No.1 is compulsory.***
2) ***Attempt any five questions from the remaining.***
3) ***Figures to the right side indicates full marks.***

Q1) What is firmware computer? Explain the layers of virtual computer for any web applicaiton. **[20]**

Q2) Explain compiler, Interpreter & Assembler with examples. **[10]**

Q3) What is binding time? Explain the classes of binding times. **[10]**

Q4) Explain general syntactic criteria of programming language. **[10]**

Q5) What are the attributes of good programming language. **[10]**

Q6) Explain actual and formal parameters passing mechanism with suitable examples. **[10]**

Q7) Write short notes (any two): **[2 × 5 = 10]**

a) Linking and loading

b) Features of java language

c) Static storage management.