[5470] - 21

M.C.A. (Management Faculty) (Semester - II)
PROBABILITY & COMBINATORICS
(2008 Pattern) (Theory)

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 generalized Inclusion and Exclusion and derive formula derangement.   **[5]**

    b)   Rearranging all the letters of the word 'MATHEMATICS', how many strings can be formed? How many if two 'A's are together?   **[5]**

    c)   How many integers between 1 to 1000 (both exclusive) are divisible by either 2 or 3 or 5?   **[5]**

    d)   Solve the following recurrence relation.   **[5]**

$$a_n - 9a_{n-1} + 18a_{n-2} = 0 \quad \text{where } a_0 = 1 \text{ and } a_1 = 4.$$

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

    i) $\dbinom{n}{r} = \dbinom{n}{n-r}.$

    ii) $\dbinom{2n}{2} = 2\dbinom{n}{2} + n^2.$

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

$$x_1 + x_2 + x_3 = 41 \qquad x_1, x_2, x_3 \le 23$$

P.T.O.

Q3) a) Determine the Discrete Numeric Function corresponding to generating function. **[8]**

$$\frac{2+3z}{1-3z}$$

b) State multinomial theorem and hence find the coefficient of $x^6\, y^2\, z^4$ in the expansion of $\left(x^2 - 3y + 4z^2\right)^7$. **[7]**

Q4) a) Define the following terms : **[5]**
   i) Probability density function.
   ii) Marginal distribution.
   iii) Cumulant Generating function.
   iv) Conditional Probability.
   v) Independent event.

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

X	−3	−1	0	1	2	3	5	8
F(x)	0.1	0.3	0.45	0.5	0.75	0.9	0.95	1.0

   i) Find probability distribution of X.

   ii) Find P(x is even).

   iii) P(x = −3 | x < 0).

c) For the joint probability distribution of two random variables X & Y given below **[5]**

Y\X	1	2	3	4
0	0	0	1/32	2/32
1	1/16	1/16	1/8	5/32
2	1/32	1/32	1/64	1/64
3	2/32	1/8	3/32	1/8

Find :
   i) Marginal distributions of X and Y,
   ii) P (X ≤ 1).
   iii) P (Y ≤ 3).

d) State and prove that Poisson distribution is a limiting case of Binomial distribution. **[5]**

Q5) a) Find MGF of Normal distribution and hence deduce its Expectation and Variance. **[8]**

b) Suppose that the life in hrs of a certain part of Television is a continuous random variable with p.d.f. given by **[7]**

$$f(x) = \begin{cases} \dfrac{k}{x^2}, & \text{for } x \geq 1000 \\ 0, & \text{otherwise} \end{cases}$$

Find :

i) k.

ii) Probability that it will function for at least 1500 hrs.

iii) Probability that it will fail before 2000 hrs. given that it works for at least 1500 hrs.

Q6) a) If X and Y are two random variables having joint density function. **[8]**

$$f(x,y) = \begin{cases} Cxy^2 & , 0 < x < 2, 1 < y < 3 \\ 0 & , \text{elsewhere} \end{cases}$$

Find :

i) C.

ii) P(x > y).

iii) P(x<1 |y<2).

b) Wages of workers in a factory are normally distributed with average wage Rs. 4000/- and standard deviation 400. Find the range of wages within which middle 40% workers lay. **[7]**

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[5470] - 41

M.C.A. (Management Faculty) (Semester - IV)
BME-1 : MIS FRAMEWORK AND IMPLEMENTATION
(Elective) (2008 Pattern)

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

Instructions to the candidates:

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

Q1) Explain the role played by IT infrastructure in Operational Control and Decision Support System in an organization. **[10]**

Q2) Differentiate between DSS and EIS with example. **[10]**

Q3) Explain the critical success factors for Accounting Information System. **[10]**

Q4) Design and discuss a MIS Framework for e-learning applications. **[10]**

Q5) How to maintain customer relationship using information technology? Explain it with appropriate example. **[10]**

Q6) Explain various socio-economic issues associated with implementation of on line banking. **[10]**

Q7) Write short notes on **(Any Four)** :   **[20]**

     a)   Competitive Advantage.

     b)   GDSS.

     c)   IT policy.

     d)   Components of DSS.

     e)   Cost benefit analysis of information systems.

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[5470] - 42

M.C.A. (Management Faculty) (Semester - IV)
FOUNDATION OF DECISION PROCESSES
(2008 Pattern) (Theory)

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

Instructions to the candidates:

1) *Question No. 1 is compulsory.*
2) *Solve any two questions from remaining.*
3) *Figures to the right indicate full marks.*
4) *Use of electronic calculator is allowed.*

Q1) a) At a bus terminal every bus should leave with driver. At the terminus they keep 2 drivers as reserved if anyone on scheduled duty is sick and could not come. Following is the probability distribution that driver become sick. **[10]**

No. of Sick Drivers :	0	1	2	3	4	5
Probability :	0.30	0.20	0.15	0.10	0.13	0.12

Simulate for 10 days and find utilization of reserved drivers. Also find how many days and how many buses cannot run because of non-availability of drivers.

Use the following random numbers : 30, 54, 34, 72, 20, 02, 76, 74, 48, 22

b) Explain the elementary queuing system in detail. **[10]**

c) Solve the following game. **[10]**

		Player Y		
		Y$_1$	Y$_2$	Y$_3$
Player X	X$_1$	1	2	7
	X$_2$	6	7	2
	X$_3$	6	6	1

Q2) a) A student tries to be punctual for the classes. If he is late on a day he is 80% sure to be on time the next day. If he is on time then there is 20% chance that he will be late on the next day. How often in the long run is he expected to be late for the class? **[10]**

b) Customers arrive at a one window ticket counter according to a Poisson distribution with a mean of 10 minute and service time per customer is exponential with a mean of 6 minutes. The space in front of ticket counter can accommodate only three customers including the serviced one. Other customers have to wait outside this space. Calculate : **[10]**

   i) Probability that customer can come directly to the space in front of the ticket window.

   ii) Probability that an arriving customer will have to wait outside the directed space.

   iii) How long an arriving customer is expected to wait before getting the service?

   iv) Utilization parameter of the entire system.

   v) Probability that a customer has to wait for more than 10 minutes in the system.

Q3) a) Book-store sales a particular book of a **Tax Laws** for Rs. 250. It purchases the book for Rs. 200 per copy. Since some of the tax laws changes every year become outdated and the book can be disposed at Rs. 130 each. According to past experience the annual demand for this book is between 18 to 23 copies. Assuming that the order for this book can be placed only once during a year. The problem before the stock manager is to decide how many copies of the book should be purchased for the next year. **[10]**

From the past data, the probability distribution of number of copies sold is as follows :

No. of copies Sold	18	19	20	21	22	23
Probability	0.05	0.10	0.30	0.40	0.10	0.05

Calculate the VPI and find optimal strategy.

b) Define Markov Chain. Explain the concept of Markov Chain with suitable example. **[10]**

Q4) a) You are given the following estimates concerning a Research and Development programme : **[10]**

Decision D_i	Prob. Of Decision D_i Given Research $P(D_i/R)$	Outcome Number	Prob. Of Outcome X_i Given D_i $P(X_i / D_i)$	Payoff Value of Outcome X_i (Rs'000)
Develop	0.5	1	0.6	600
		2	0.3	-100
		3	0.1	0
Donot Develop	0.5	1	0.0	600
		2	0.0	-100
		3	1.0	0

Construct and evaluate the decision tree diagram for the above data and identify the most optimal decision. Show your calculations for evaluation.

b) State the axioms of utility. Explain the use of utility theory in Decision Making with suitable example. **[10]**

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[5470] - 43
M.C.A. (Management Faculty)
ITE - 1 : PROGRAMMING LANGUAGE PARADIGMS
(Elective) (2008 Pattern)

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

Instructions to the candidates:

   1)   *Question 1 and 7 are compulsory.*
   2)   *Attempt any Four questions from the remaining.*

Q1) Explain the layers of virtual computer with suitable example.   **[15]**

Q2) Explain attributes of good programming language.   **[10]**

Q3) Explain with suitable construct the subprogram call and return structure. **[10]**

Q4) Explain typical structure of compiler with block diagram.   **[10]**

Q5) Explain variations in subprogram control.   **[10]**

Q6) What is memory management? Explain it with reference to object oriented programming language.   **[10]**

Q7) Write note on (any three) :   **[15]**

   a)   Embedded System.

   b)   Arithmetic and non arithmetic expression.

   c)   Binding Classes.

   d)   Firmware Computer.

   e)   Implicit and Explicit sequence control.

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[5470] - 44

M.C.A. (Management Faculty) (Semester - IV)
BME-5 : DECISION SUPPORT SYSTEM
(2008 Pattern) (Elective - 415)

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 knowledge based expert system with knowledge representation methods. **[10]**

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

Q3) Explain importance of database management system for DSS and its structure in detail. **[10]**

Q4) Explain ESS with an example and enumerate ESS characteristics and capabilities. **[10]**

Q5) Explain traditional SDLC and state alternative development methodologies. **[10]**

Q6) Discuss the classification of DSS development tools. Elaborate DSS development platforms. **[10]**

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

     a)   DSS Implementation.

     b)   AI.

     c)   SCM.

     d)   OLAP.

     e)   ODSS.

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[5470] - 45

M.C.A. (Management Faculty) (Semester - IV)
BME-4 : COLLABORATIVE MANAGEMENT
(Elective - 414) (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) State and explain the Structural, Functional and Behavioral issues involved in strategy implementation. **[14]**

Q2) What is Environmental Threat and Opportunity Profile (ETOP)? What is its role in strategic analysis? Explain with relevant examples. **[14]**

Q3) Leadership style, corporate culture, values and ethics play a crucial role in effective implementation strategy. Comment. **[14]**

Q4) A value chain is a chain of activities for a firm operating in a specific industry. Explain the concept and discuss its competitive advantages. **[14]**

Q5) Elaborate Porter's 5 forces model of competition framework with the help of suitable examples. **[14]**

Q6) "One plus one makes three : this question is the special alchemy of a merger or an acquisition". State the features of merger and acquisition.   **[14]**

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

   a)   Vision and Mission.

   b)   SWOT Analysis.

   c)   GE 9 Cell Model.

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[5470]-51

M.C.A. (Semester - V) (Management Faculty)
HUMAN COMPUTER INTERFACE
(2008 Pattern)

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

Instructions to the candidates:

1) *Question No. 1 is compulsory.*
2) *Answer any five from remaining.*
3) *Figure at right hand indicates full marks.*

Q1) What is the significance of usability in user interface design? Describe various principles of support usability. **[20]**

Q2) Explain design principles of form fill-in dialog boxes of various types. How layout, environment and direct manipulation programming affects the design of dialog boxes? **[10]**

Q3) a) State and explain three pillars of interface design process. **[5]**

     b) Comments on arguments usually given for and against participatory design. **[5]**

Q4) a) Discuss important design issues involved in designing a web page. **[5]**

     b) Compare online help and documentation Vs Printed documentation. **[5]**

Q5) Discuss about the benefits and problems of using video in experimentation? **[10]**

Q6) Describe the following specification methods

     a) Transition diagrams **[5]**

     b) State charts **[5]**

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

     a) Acceptance Testing

     b) Error Message Guidelines

     c) Expert reviews

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[5470] - 101

M.C.A. (Management) (Semester - I)
IT-11 : COMPUTER ORGANIZATION
(2012 and 2013 Pattern)

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 diagram whenever necessary.*

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

b)   What is Cache? Explain its use.   **[5]**

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

a) $(41.5)_{10} = (?)_2$.

b) $(4465)_8 = (?)_{16}$.

c) $(CA2)_{16} = (?)_{10}$.

d) $(1001.01)_2 = (?)_{10}$.

e) $(310.127)_{10} = (?)_{16}$

Q3) What are CPU building blocks? Explain it with proper diagram.   **[10]**

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

Q5) What is Flip Flop? Draw and explain in detail. **[10]**

Q6) What is a Register? Explain its types in detail. **[10]**

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

    a) Performance of processors.

    b) Instruction and execution cycle.

    c) Decoder-Encoder.

    d) k-maps.

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[5470] - 102

M.C.A. (Management)

IT - 12 - 'C' PROGRAMMING

(2012 & 2013 Pattern)

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

Instructions to the candidates:

1)   Question No. 1 is compulsory.
2)   Solve any five questions from Question Number 2 to 7.
3)   Assume suitable data wherever necessary.
4)   Figure at right hand indicates full marks.

Q1) Answer the following questions (any four).   **[4 x 5 = 20]**

  a)   Explain use of pointers in call by reference parameter passing for function.

  b)   What is indirection operator? Give an example.

  c)   Differentiate Storage classes in C in tabular form.

  d)   Explain the use of break and continue statement in loops with example.

  e)   Explain the concept of pointers arithmetic operations.

Q2) a)   Write a C program to calculate sum of all digits using recursion.   **[5]**

  b)   Write a C program to print Print Pascal's triangle.   **[5]**

```
            1
          1   1
        1   2   1
      1   3   3   1
    1   4   6   4   1
  1   5   10    10  5   1
```

Q3) a) Write a C program to find sum of elements above and below main diagonal of Matrix. **[5]**

b) Write a C Program to print all VOWEL and CONSONANT characters separately from String. **[5]**

Q4) a) Write a C program to check given number is even or odd using bitwise operator. **[5]**

b) Explain any five conversion specifies in C. **[5]**

Q5) Write C graphics programs that draw the following smiley face. **[10]**
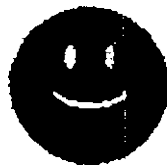
Q6) Write a menu driven C program to perform addition, subtraction, multiplication and division of two complex numbers. (Use structure variable to store complex numbers real and imaginary part.) **[10]**

Addition : $(a + bi) + (c + di) = (a + c) + (b + d)i$

Subtraction : $(a + bi) - (c + di) = (a - c) + (b - d)i$

Multiplication : $(a + bi)(c + di) = (ac - bd) + (bc + ad)i$

Division :

$(a + bi)/(c + di) = ((ac + bd) / (c^2 + d^2)) + ((bc - ad)/(c^2 + d^2))i$

Q7) Write a program in C to replace a specific line with another text in a file. **[10]**

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[5470] - 103
M.C.A. (Management) (Semester - I)
IT-13 : SOFTWARE ENGINEERING
(2012 & 2013 Pattern)

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

Instructions to the candidates:

    1)   *Question No. 1 and Question No. 7 are compulsory.*
    2)   *Attempt any 4 out of remaining.*
    3)   *Figures to right indicate marks.*
    4)   *Write assumptions whenever necessary.*

Q1) Rohanlal & Sons is an engineering firm, have 7 departments. Each department have sub-department. Each Sub-Dept have an in charge and have job responsibility. Each job has 6-7 skill workers. They have to finish their job as per job schedule. Weekly all sub-department heads have to submit their department report to their head of department and all head of department submit their report to chairman/manager of the company. **[20]**

    a)   Draw context level and first level DFD.

    b)   Prepare software requirement specification.

Q2) Describe phases of SDLC in detail. **[10]**

Q3) What is documentation? Explain the importance of documentation in system design. **[10]**

Q4) Explain CASE Tools with its components. **[10]**

Q5) Explain reverse engineering and it's important. **[10]**

P.T.O.

Q6) Explain importance of good GUI design. **[10]**

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

    a)   Functional Decomposition Diagram.

    b)   Agile process.

    c)   Spiral Model.

    d)   Decision Tree and Decision Table.

    e)   Web engineering.

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[5470] - 104

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

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

(2012 Pattern)

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

Instructions to the candidates:

    1)   *Question No. 1 is compulsory.*

    2)   *Attempt any 3 questions from the remaining.*

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

Q1) a)   Explain concept, nature and process of management with special reference to the IT industry.   **[15]**

     b)   "People influence organizations and organizations influence people" Explain this statement.   **[10]**

Q2) Explain concept, tools and principles of scientific management.   **[15]**

Q3) Define organization and discuss in detail different organizational structures.   **[15]**

Q4) Explain how motivation helps to achieve success in an organization with the help of Maslow's need hierarchy theory.   **[15]**

Q5) Define group dynamics. How do teams play a vital role in organizational effectiveness?   **[15]**

Q6) Write short notes on (Any Three): [15]

  a) Territorial organization.

  b) Decision making under risk.

  c) Pyramid level of management.

  d) Conflict management.

  e) Leadership qualities.

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[5470] - 105

M.C.A. (Management Faculty) (Semester - I)
MT-11 : 116 : DISCRETE MATHEMATICS
(2012 & 2013 Pattern) (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) $P \rightarrow \neg Q, Q \vee R, \neg S \rightarrow P, \neg R \Rightarrow S$. Show that S is a valid statement. **[5]**

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

    c)   i)   Find the number of permutations that can be formed from all the letters of the word BASEBALL.

          ii)   Find, if the two B's are to be next to each other.

                                                                        [5]

    d)   Find the number of integer valued solutions of the following equation.

                                                                                    [5]

          $x_1 + x_2 + x_3 = 18$ $x_1 > 1, x_2 > 2, x_3 > 3$

    e)   Six persons are assigned 6 seats in a row. In how many different ways can they occupy their seats if **[5]**

          i)   Two persons do not occupy their seats.

          ii)   Atleast two of them do not occupy their seats.

    f)   Show that the roots of unity say {1, w, w²} form an abelian group under multiplication, w being the imaginary cube root of unity. **[5]**

Q2) Solve the following:

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

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

b) R is the set of real numbers, given that $f(x)=x+2$, $g(x)=x-2$, and $h(x)=3x \forall x \in R$. **[7]**

Find

i) gof,

ii) fog,

iii) hog

iv) fogoh

c) i) Use multinomial theorem to find the coefficient of $x^2 y^4 z^3$ in the expansion of $(x-2y+3z)^9$.

ii) In how many ways can 4 couples sit on a round table? In how many ways can they be seated so that all couples sit together?

[8]

Q3) Solve the following:

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

i) Every comedian is funny.

ii) Some comedians are funny.

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

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

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) Prove the following :   [4]

$$\left(\dfrac{m+n}{2}\right) - \left(\dfrac{m}{2}\right) - \left(\dfrac{n}{2}\right) = mn$$

ii) Among 100 students 32 are studying mathematics, 20 are studying physics, 45 are studying biology and 10 are studying physics and biology. There are 30 students who do not study any subject. Find the number of students studying all the 3 subjects.   [4]

Q4) Solve the following:

a) Let R = {(1, 2), (3, 4), (2, 2)} and S = {(4, 2), (2, 5), (3, 1), (1, 3)} [5]
Find

  i) RoS

  ii) SoR,

  iii) (SoR),

  iv) (RoS)oR

b) Use appropriate statement variables to write the following argument in symbolic form.   [7]

  i) If you have flu, then you will miss the final exam.

  ii) If you don't miss the final exam, you will pass the course.

  iii) If you neither have flu nor miss the final exam, then you will pass the course.

c) i) Find all the distinct left cosets of {[0],[3]} in the addition modulo group (Z6, + 6).

  ii) Determine whether group (G, X$_7$) is cyclic where

  G = {1, 2, 3, 4, 5, 6}. Find all the generators of G.

                                                                          [8]

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[5470] - 201

M.C.A. (Management Faculty) (Semester - II)
IT - 21 : OBJECT ORIENTED PROGRAMMING USING C++
(2012 Pattern)

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

Instructions to the candidates:

   1)   *Q.1 is compulsory.*

   2)   *Solve any six from Q.2 to Q.8.*

   3)   *Figures to write indicate full marks.*

Q1) Write outputs with explanation   **[10]**

   a)   Class Check

```
{       static int num;

        public  :

                static void dispNum (void)

                { cout << " Number is : " << – num;

                }

};

int Check : : num;

void main ( )

        {       Check C1, C2, C3;

        C1. dispNum ( );

        C2. dispNum ( );

        C3. dispNum ( );

        }
```

b) void main ( )
```
    {    int  a  = 10;
         int * p = & a;
         int  & q = a;
         cout << endl << "a =" <<a;
         cout << endl << "*p =" << * p;
         cout << endl << "&q =" << q;
         getch ( );
      }
```

c) Class Test
```
    {    public :
                Test ( );
    };
    Test :  : Test ( )
    {     cout << "Constructor Called \n";
    }
    int   main  ( )
    {    cout <<"Start\n";
         Test t1 ( );
         cout  << "End\n";
         return     0;
    }
```

d) Class Base
```
    {    int x ;      };
    class derive : public base
    {    int y = 10;
         void display ( )
         {    cout  << x  << "\t"<<y;     }
    };
    void main ( )
    {    derive  d;
         d. display ( );    }
```

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

b) Explain new and delete operators. **[5]**

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

b) Explain with example to convert one class type to another class type.

[5]

Q4) a) Explain following functions with example, **[5]**

    i) getline ( )

    ii) write ( )

b) Explain 'this' pointer with example. **[5]**

Q5) A student .dat file contains following information as, **[10]**

a) stud - id

b) name

c) dt - birth

d) course

Write a program to read this file and create coursewise new files such as MCA .dat, MBA .dat and MCM .dat and write records in respective files.

Q6) a) What is containership. Explain with example. **[5]**

b) What is abstract class? Explain with example. **[5]**

Q7) a) Write a function template using Standard Parameters. **[5]**

b) Write a program to accept string and findout length of it. Raise an exception if length is less than three. **[5]**

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

a) New style cast.

b) Iterators in STL.

c) Namespace.

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[5470] - 202

M.C.A. (Management Faculty) (Semester - II)
IT - 22 : DATABASE MANAGEMENT SYSTEM
(2012 & 2013 Pattern)

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

Instructions to the candidates:

1) *Question No. 1 & Question No. 6 are compulsory.*
2) *Solve any three questions from the remaining.*
3) *Mention assumptions made for solving the case study.*
4) *Figures to the right indicate full marks.*

Q1) Normalize the following data of employee department Project allocation system up to 3NF and draw E.R Diagram. **[20]**

Empid, Emp_name, Emp_dob, Manager, Deptno, Dname,

Dlocation, Projectid, Project_name, Proj_start_date,

weeks_working_on_Proj.

Q2) Explain characteristics of Database Management System. **[10]**

Q3) Define Transaction and Explain ACID properties of Transaction. **[10]**

Q4) Explain two phase locking protocol for concurrency control. **[10]**

Q5) Explain Relational Algebraic notations in details. **[10]**

Q6) Write a short note on following (Any 4) :   [20]

    a)   Data Independence.

    b)   Sequence.

    c)   Database users.

    d)   Remote Backup system.

    e)   Deadlock.

SEAT No. :

[5470] - 203

M.C.A. (Management Faculty)
IT - 23 : OPERATING SYSTEMS CONCEPT
(2012 Pattern)

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

Instructions to the candidates:

    1)   *Question 1 is compulsory.*
    2)   *Solve any 5 from remaining.*
    3)   *Figures to the right indicate full marks.*
    4)   *Draw neat diagrams wherever necessary.*

Q1) a)   Explain various memory mapping techniques. Explain segmentation in detail.   **[8]**

    b)   Assume 5 jobs in ready queue in order 1, 1, 2, 3, 4 time unit with following burst time and priority given below

Jobs	Burst Time	Priority
A	10	3
B	5	1
C	2	3
D	11	4
E	2	2

    •   Higher number indicates higher priority.

       Using Gantt chart calculate turn around time and waiting time using round robin and priority algorithm. Consider Time Quantum = 2 Time Unit.   **[12]**

Q2) Explain Deadlock detection algorithm for

    a)   Single instance resource. **[4]**

    b)   Multiple instances of resources. **[6]**

Q3) Explain IPC mechanisms in client server in detail. **[10]**

Q4) a)   Describe disk performance issues. **[5]**

    b)   Explain dining philosopher problem using semaphore. **[5]**

Q5) a)   Differentiate between logical & physical address. **[2]**

    b)   Given memory partition's of 100k, 500k, 200k, 300k and 600k in order. How would each of the First Fit, Worst Fit & Best fit algorithm places processes of 212 K, 417 K, 112 K and 426 K in order specify which algorithm makes the most efficient use of memory. **[8]**

Q6) a)   Explain abstract view of OS. **[2]**

    b)   Differentiate Distributed and Centralized OS. **[8]**

Q7) Write short notes (Any Two) : **[10]**

    a)   Directory structure.

    b)   Demand paging.

    c)   Queuing diagram.

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[5470] - 204

M.C.A. (Management Faculty) (Semester - II)
BM 21 : 204 - MANAGEMENT INFORMATION SYSTEM AND BUSINESS INTELLIGENCE
(2012 & 2013 Pattern)

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

Instructions to the candidates:

    1)   *Question No. 7 is compulsory.*

    2)   *Attempt any 5 questions from Q.No. 1 to Q.No.6.*

Q1) What is System? Explain types of system in detail. **[10]**

Q2) Define M.I.S. Explain the MIS structure based on organizational activities. **[10]**

Q3) Explain Herbert-Simon model of decision making in detail. What are its limitations? **[10]**

Q4) Define D.S.S. Explain various components of DSS in detail. **[10]**

Q5) What is Expert System? Differentiate Conventional VS. Expert system. **[10]**

Q6) Explain the concept of Data Warehousing. Discuss the needs of data mining in modern business. **[10]**

Q7) Write short notes (Any 4) :   [4 x 5 = 20]

     a)   B1 Tools.

     b)   OLTP VS. OLAP.

     c)   Characteristics of EIS.

     d)   Sensitivity Analysis.

     e)   Feedback Control.

     f)   Data Mart.

[5470] - 205
M.C.A. (Management Faculty)
IT - 24 : ENTERPRISE RESOURCE PLANNING
(2012 Pattern)

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) *Figures to right indicate full marks.*

Q1) 'Time' is a multinational company which produces watches of different variety. Currently, time is having an inter-departmental ERP. Time has hired you as an ERP consultant for their integrated ERP implementation. Prepare a brief report about vendors, their modules and use of automation of Business transaction. Also, prepare blue print of ERP implementation for 'Time'. **[20]**

Q2) Define ERP. Explain various advantages of ERP. **[10]**

Q3) Explain success and failure factors of an ERP. **[10]**

Q4) Define BPR and explain BPR life cycle in detail. **[10]**

Q5) Explain modules and sub-modules in inventory control management systems. **[10]**

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

Q7) "For the successful ERP implementation team building, training and project management is extremely important". Comment. **[10]**

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

a)   CRM.

b)   ERP packages.

c)   Data Mining.

d)   End user training.

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[5470] - 301

M.C.A. (Management)
IT 31 : WEB TECHNOLOGIES
(2012-13 Pattern)

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

Instructions to the candidates:

1) *Q.1 and Q.7 are compulsory.*
2) *Solve any 4 from remaining questions.*
3) *Draw neat diagram.*

Q1) a) Explain DOM and SAX parser with examples.   **[10]**

   b) Define CSS and explain its types with examples.   **[10]**

Q2) Write XML and DTD file for accepting feedback form from castors after purchasing product.   **[10]**

Q3) Write Javascript validation program for accepting registration for workshop organized by your Institute.   **[10]**

Q4) a) What different effects are possible by jQuery?   **[5]**

   b) Explain the various methods of jQuery Ajax.   **[5]**

Q5) Explain .htaccess and .htpasswd file and how can they be configured to implement authentication.   **[10]**

Q6) Explain following tags.   [10]

    a)   <Anchor>.

    b)   iframe.

    c)   Span.

    d)   Table.

Q7) Write short notes (Any 2) :   [10]

    a)   String and Array Object in Javascript.

    b)   SOAP.

    c)   N-tier architecture.

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[5470] - 302

M.C.A. (Management Faculty) (Semester - III)
IT-32 : Data Communication and Computer Networks
(2012 & 2013 Pattern)

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)   Explain IPv4 address classes and IPv6 addressing. How they can exists same Time?   **[8]**

   b)   Explain TCP/IP Model.   **[7]**

Q2) Explain IP routing concept. Explain mechanism of Open Shortest Path First routing protocol.   **[10]**

Q3) Explain DHCP working mechanism and scope resolution.   **[10]**

Q4) Explain HTTP communication with example.   **[10]**

Q5) Explain various threats in Network Security.   **[10]**

Q6) Explain various topologies used in networking.   **[10]**

Q7) Write Short Notes (Any Three) :   **[3 x 5 = 15]**

    a)   HDLC.

    b)   TCP-a reliable pipe.

    c)   Telnet.

    d)   WiMax.

    e)   Firewall.

[5470] - 303

M.C.A. (Faculty of Management) (Semester - III)
IT-33 : Data Structure Using C++
(2012/2013 Pattern)

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

Instructions to the candidates:

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

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

    a)   Abstract Data type.

    b)   Dequeue.

    c)   Sparse Matrix.

    d)   Pre order Traversal.

Q2) Show the stack contents for each step during conversion of given

    a)   Posfix expression into infix :   **[10]**

         $ABCD \wedge - * EF \wedge GH/*+$

    b)   Write a function in C++ for deleting a node from MAX heap.   **[10]**

Q3) a)   Draw AVL Tree for following: **[10]**

         40, 20, 10, 50, 90, 30, 60, 70, 95, 55, 25, 80, 45.

    b)   Write a C++ code for circular queue with insert, delete & display function.
                                                          [10]

Q4) a) Write a program to implement priority queue using link list. **[10]**

b) Write a C++ code for addition of two polynomials. **[10]**

Q5) Draw a binary search tree for following. Also write preorder

a) Traversal for this : **[10]**

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

b) Generate DFS, BFS starting from node E, adjacency matrix, adjacency list for following graph. Also write algorithm for DFS & BFS. **[10]**

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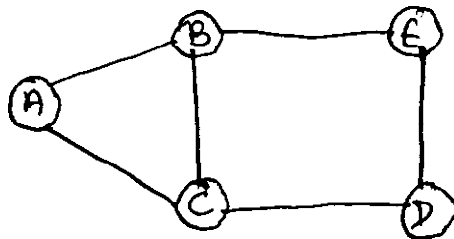
[5470] - 304

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

IT-34 : 304 : ADVANCED DATABASE MANAGEMENT SYSTEM
(2012 & 2013 Pattern)

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

Instructions to the candidates:

   1) Question No. 1 & Question No. 7 are compulsory.
   2) Attempt any 4 questions from remaining.
   3) Draw Figure wherever it is required.

Q1) a)   What is OODBMS? Explain Features of OODBMS. Compare ORDBMS, OODBMS. **[10]**

      b)   Explain Spatial & Geographic databases, Multimedia Databases and Requirement of Mobile Databases. **[10]**

Q2) What are Association Rules? Explain Market - Basket Model and Apriori Algorithm. **[10]**

Q3) Explain Inter-operational and Intra-operational Parallelism in detail. **[10]**

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

Q5) What is OLAP? Explain Dimensional Data Modeling Schemas. **[10]**

Q6) Explain 2 classification algorithms in detail. **[10]**

Q7) Write Short Notes (Any 2) :   [10]

   a)   SOAP.

   b)   Text Mining.

   c)   Vertical Fragmentation.

   d)   Directory System.

   e)   XML Application.

[5470]-305

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

IT35 - Object Oriented Analysis and Design

(2012 Pattern)

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) IBM, TGMC has arranged a project competition for which students of ME, MCA, MCM, MCS College students can register online in a group. The panel of judges is invited from colleges of other Universities. One college can send any number of groups. One group can have minimum 2 and maximum 4 members. One group cannot develop more than one project. One student can participate in only one project group. One panel of judges consists of minimum 2 and maximum 4 judges. One panel of judges can judge many project. IBM declares result based on points given by the panel of Judges.   **[20]**

Draw usecase diagram and class diagram for the above case.

Q2) Compare Grady Booch methodology with James Rumbaugh methodology.**[10]**

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

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

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

P.T.O.

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]**

Q6) a) Compare OOAD with SSAD. **[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) Component and Deployment Diagram.

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[5470]-401

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

IT - 41 : JAVA PROGRAMMING

(2012 Pattern)

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

Instructions to the candidates:

1)   *Q. 1 is compulsory.*

2)   *Solve any six from remaining.*

Q1) Solve the following :   **[10]**

a)   How garbage collection utility is invoked

b)   Listout four Methods of vector class

c)   Explain use of 'Super' and this keywords

d)   What is thread synchronization

e)   What is socket?

Q2) Write GUI based JDBC application to register students for convocation in MCA (Use Prepared Statement assume suitable table structure).   **[10]**

Q3) Write Java application to demonstrated add, replace delete, copy node in Treeset.   **[10]**

Q4) Write a Java Server Program which allows clients to specify file name at client side and server accepts file name and sends contents to client or indicate that the file dosen't exist.   **[10]**

Q5) Write an applet to display scrolling image in an applet window. **[10]**

Q6) Explain RMI architecture and write RMI application to count number of vowels from given string. **[10]**

Q7) What is error? Explain user defined exception with example. **[10]**

Q8) Write note. (any two) **[10]**

    a)   Java Beans

    b)   MVC architecture

    c)   applet life cycle

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[5470]-402

M.C.A. - II (Management) (Semester - IV)
IT42 - MOBILE COMPUTING
(2012-13 Pattern)

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

Instructions to the candidates:
   1)   Question 1 and 8 are compulsory.
   2)   Solve any 3 from remaining.

Q1) a)   Describe Cellular Network and concept.   **[10]**

  b)   Describe the layout & explain its types.   **[10]**

Q2) Discuss the component of WAP architecture.   **[10]**

Q3) What do you mean by Hoarding ? Explain Hoarding techniques used in Mobile
      Computing.   **[10]**

Q4) Describe Android SDK in detail.   **[10]**

Q5) Discuss Views and view Groups in Android.   **[10]**

Q6) Explain Applications & features of Android.   **[10]**

Q7) Write an Android application for Menus.   **[10]**

Q8) Write short notes. (any four)   **[20]**
   a)   GPRS
   b)   Handover
   c)   Palm OS
   d)   3G Technology
   e)   SQLite
   f)   Mobile IP

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P2398

[5470]-403

M.C.A. (Management Faculty) (Semester - IV)
IT43 - INFORMATION SECURITY AND AUDIT
(2012 & 2013 Pattern)

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

Instructions to the candidates:

1)   *Q. No. 1 and Q. No. 7 are compulsory.*
2)   *Solve any 4 Questions from Q. No. 2 to Q. No. 6.*
3)   *Figures to the right side indicate full marks.*

Q1) A leading Telecom and Networking company - BSNL, called you to perform IS audit of their firm. In this regard, you have to explain various:

   a)   Physical access security issues and guidelines

   b)   Network access security issues and guidelines   **[10]**

Q2) Define the term Risk. Explain various types of risks to information systems.**[10]**

Q3) Explain ISO/IEC 17799 security policy standard.   **[10]**

Q4) Explain BCP and DRP process in detail.   **[10]**

Q5) What is IT Governance? Explain COBIT model of IT Governance in detail.**[10]**

Q6) Explain various evidence collection techniques in detail.   **[10]**

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

   a)   Ethical hacking
   b)   Need of IS Audit
   c)   PDCA model
   d)   CIA triangle
   e)   Digital signature

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[5470]-404

M.C.A. (Management Faculty) (Semester - IV)
IT - 44 : Design and Analysis of Algorithm
(2012 Pattern)

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

Instructions to the candidates:
   1)   *Q. No. 1 and Q. No. 7 are compulsory.*
   2)   *Solve any four from Q.No. 2 to Q. No. 6.*
   3)   *Make necessary assumptions.*
   4)   *Use of non-programmable calculator is allowed.*
   5)   *Figures to right indicate full marks.*

Q1) a)   What is an algorithm ? State the characteristics of good algorithm with example.   **[10]**

     b)   Discuss quick sort algorithm with example.   **[10]**

Q2) Write an algorithm for Merge sort and sort the following elements using merge sort

400, 380, 275, 750, 455, 523, 863, 355, 550, 615   **[10]**

Q3) Explain Travelling sales-man problem algorithm with suitable example. use Dynamic programming approach.   **[10]**

Q4) Define Minimum spanning tree. Write Prim's algorithm for finding MST for following graph.   **[10]**
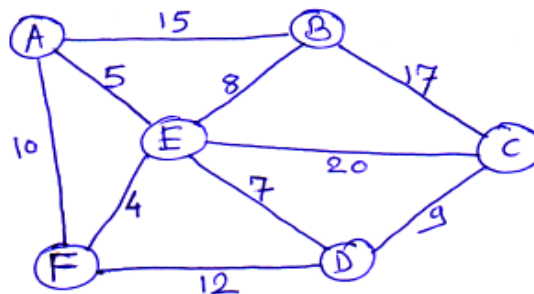
Q5) Discuss 0/1 knapsack problem using branch and bound technique and write algorithm for the same. **[10]**

Q6) Design an algorithm for job sequencing with deadlines problem using greedy method. Obtain the optimal job sequence for following data of jobs.

N = 3, (P_1, P_2, P_3) = (25, 15, 5) and (D_1, D_2, D_3) = (1, 3, 3) **[10]**

Q7) Write a short Note on any two of the following. **[10]**

a) NP. Complete and NP-Hard Problems

b) Graph Coloring

c) Hamiltonian Cycle

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[5470]-405

M.C.A. (Faculty of Management)
MT-41 : OPTIMIZATION TECHNIQUES
(2012 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) Find Initial Basic Feasible solution of the following TP by MM method and by VAM : **[7]**

	W_1	W_2	W_3	Capacity
F_1	16	20	12	80
F_2	14	8	18	110
F_3	26	24	16	60
Demand	70	90	90	

(Origins)

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

Activity	Time Estimate (Weeks)		
	Optimistic	Most Likely	Pessimistic
1-2	6	8	10
1-3	2	2	2
2-4	1	2	3
3-4	6	6	12
3-5	3	4	5
4-5	3	3	3
4-6	3	4	5
5-6	4	5	6
5-7	6	8	16
6-7	1	1	1

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 24 weeks?

P.T.O.

c) A bank plans to open a single teller facility at a particular center. It is estimated that 10 customers arrive each hour on an average. On an average 4 minutes are required for processing customer's transaction. Find: **[7]**

   i)   The Probability that 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, 7 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
MachineA :	30	45	15	20	80	25	10
Machine B :	20	30	50	35	36	40	15

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 :

$$8x_1 + 16x_2 + 12x_3 \leq 250$$
$$4x_1 + 8x_2 + 10x_3 \leq 80$$
$$7x_1 + 9x_2 + 8x_3 \leq 105$$
$$x_1, x_2, x_3 \geq 0$$

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

Week	1	2	3	4	5
Probability of failing during the week	0.1	0.15	0.25	0.3	0.2

There are 1000 bulbs in use and it costs Rs,50 to replace individual bulbs which are burnt out. If all bulbs are replaced simultaneously it would cost Rs.30 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. From Past records it was found that the average cost of placing one order is Rs. 24. 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) Solve following assignment problem that minimizes the total assignment cost. **[7]**

		Worker				
		W_1	W_2	W_3	W_4	W_5
Jobs	J_1	29	33	40	35	39
	J_2	22	38	41	36	36
	J_3	41	27	33	30	37
	J_4	40	24	28	21	36
	J_5	32	28	40	28	40

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

    i) Dummy Activity

    ii) Lead time

    iii) Surplus variable

    iv) Ordering cost

    v) Float

    vi) Unbalanced assignment 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 :

$$x_1 + 5x_2 - 3x_3 \geq 15$$
$$5x_1 - 10x_2 + 10x_3 \geq 10$$
$$x_1, x_2, x_3 \geq 0$$

Q5) a) The following table gives activities of a project with their Normal & crash duration in weeks & normal crash cost in Rs. The indirect cost per week is Rs, 1000 Find optimal duration with minimum cost for completion of all the activities: **[7]**

Activity	Normal		Crash	
	Time	Direct cost	Time	Direct cost
1-2	8	7000	3	10000
1-3	4	6000	2	8000
2-3	0	0	0	0
2-5	6	9000	1	11500
3-4	7	2500	5	4000
4-6	12	10000	8	16000
5-6	15	12000	10	16000
5-7	7	12000	6	14000
6-8	5	10000	5	10000
7-8	14	6000	7	10200
7-9	8	6000	5	12000
8-9	6	6000	4	7800

b) Customers arrive at a sales counter manned by a single person according to a Poisson process with a mean rate of 12 per hour. The departure pattern has an exponential distribution with a mean of 16 per hour. Find: **[7]**

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

ii) The average number of customers in the queue.

iii) The average waiting time in the system.

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[5470]-501

M.C.A. (Management) (Semester - V)
IT51 - SOFTWARE TESTING & QUALITY ASSURANCE
(2012 Pattern)

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

Instructions to the candidates:

1) *Q. No. 1 and Q. No. 7 are compulsory.*
2) *Attempt any 4 from remaining.*
3) *Figures to right indicate marks.*
4) *Draw neat diagrams wherever necessary.*

Q1) Write a detailed test plan for a mobile application which will allow a user to transfer money from his/her account to other registered account. Assume necessary details for this mobile payment app. Your test plan should include scope, schedule, test strategies, test documents and test deliverables. Also Write test cases for the same app. **[15]**

Q2) Explain V &V model in detail? **[10]**

Q3) Explain software reliability & various Models of reliability? **[10]**

Q4) a) Calculate cyclomatic complexity for finding even or odd number? **[5]**

      b) Explain Tester's workbench? **[5]**

Q5) Explain different types of Functional testing. **[10]**

Q6) Explain Testing Life Cycle in detail? **[10]**

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

      a) CMM

      b) Alpha Vs Beta Testing

      c) Clean Room Software Development

      d) CAST

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[5470]-502

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

IT 52 : SOFTWARE PROJECT MANAGEMENT

(2012 & 2013 Pattern)

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

Instructions to the candidates:

　　1)　　*Solve any seven questions from Q.1 to Q.8.*

　　2)　　*Use of non-programmable calculator is allowed.*

Q1) What do you mean by project? Explain the characteristics of software project.
[10]

Q2) Can we estimate the cost of project without COCOMO? Justify.　　**[10]**

Q3) Describe role of user in various stages of software development?　　**[10]**

Q4) What are the characteristics of performance management. Explain Directive and Collaborative styles in detail.　　**[10]**

Q5) What is software configuration management? Explain change control process in detail.　　**[10]**

Q6) Explain types of risks in detail. Describe importance of risk management.
[10]

Q7) Explain Function Point Analysis in detail.　　**[10]**

P.T.O.

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

    a)   PERT & CPM

    b)   Gantt Chart

    c)   MS Project

    d)   Team Structure

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P2402

[5470]-503

M.C.A. (Management Faculty) (Semester - V)
IT-53 : Emerging Trends in Information Technology
(2012 - 13 Pattern)

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

Instructions to the candidates:

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

Q1) Big Bazzar want to start the E-commerce site like Amazon. You, as a consultant suggest different E-commerce Models and Electronic Payment options to the Big Bazzar. **[15]**

Q2) What is ECM? Explain types of content with suitable example. **[10]**

Q3) Explain features and need of Social Networking. **[10]**

Q4) State and explain enterprise content management process in brief. **[10]**

Q5) Define cloud Computing? Explain cloud computing models. **[10]**

Q6) What is E-Learning? Explain E-Learning Models with suitable example. **[10]**

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

     a)   LMS Vs LCMS

     b)   Benefits of Cloud Computing

     c)   EDM

     d)   JOS

     e)   WBT Vs. CBT

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P2403

[5470]-504
M.C.A. (Management Faculty) (Semester - V)
IT-54 : ADVANCE DEVELOPMENT TECHNOLOGY
(2012 & 2013 Pattern)

Time : 3 Hours]   *[Max. Marks : 70*
Instructions to the candidates:
  1)   Question No. 1 is compulsory.
  2)   Solve any four questions from remaining.
  3)   Figures to the right indicate full marks.

Q1) Draw & explain ASP.NET architecture in detail.   **[10]**

Q2) Design form & write code to :   **[15]**

  a)   Populate & display company name in a drop down list.

  b)   Select company name & display its details.

  c)   Add a record.

  d)   Delete selected record

  e)   Edit selected record

  Name of table :- Company (cid, cname, cadd, curl, cphone)

  Name of server :- MYASPDB (SQC Server)

Q3) Explain any five validation controls in detail.   **[15]**

Q4) Explain client-side state management techniques in detail.   **[15]**

Q5) a)   Write a program to implement hit counter using global a.sax file.   **[7]**

  b)   Write code & steps to create & consume web service.   **[8]**

P.T.O.

Q6) Explain following controls : (Any Three)   **[15]**

    a)   Button control

    b)   Site map control

    c)   Bulleted list control

    d)   Image control

Q7) Write short note on following : (Any Three)   **[15]**

    a)   AJAX Control

    b)   Name Spaces

    c)   ADO.NET

    d)   Login Control

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[5470]-505

M.C.A. (Management Faculty) (Semester - V)
IT55 - ADVANCED INTERNET TECHNOLOGY
(2012-13 Pattern)

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

Instructions to the candidates:
 1) *Question No. 1 and 7 are compulsory.*
 2) *Attempt any four from remaining.*
 3) *Figures to the right, indicate full marks.*

Q1) a) Write the difference between Bean Factory & Application Context? **[10]**

   b) Explain SESSION and COOKIE in PHP.   **[5]**

Q2) Write a JAVA program to accept mobile handset details through html page and servlet will insert the details in handset table (Assume handset table is already present)   **[10]**

Q3) Explain pattern matching in PERL with example.   **[10]**

Q4) What is PHP? Explain file structure in PHP with example (file open, read, write).   **[10]**

Q5) Write a perl program that accepts input as multiple words on different lines and combines those words into a single string.   **[10]**

Q6) Write PHP code to accept Aadhar card registration information from the customer, store it into the database and display the customer information.**[10]**

Q7) Write short notes on (Any Three) :- [15]

    a) Servlet life cycle

    b) Exception handling in PHP

    c) JSP directives

    d) Explode() and implode() function in PHP

    e) Perl CGI architecture

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