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

P1823 [Total No. of Pages : 2

[4775] - 11
M.C.A. (Management Faculty) (Semester - I)
IT - 11 : COMPUTER ORGANIZATION
(2008 Pattern)

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

Instructions to the candidates:

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

Q1) a) Compare pentium processor with 80486 processor architecture with neat diagram. **[10]**

b) Explain any one synchronous counter in detail. **[5]**

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

a) $(101110)_2 = (?)_8$

b) $(952)_{10} = (?)_8$

c) $(11010011)_2 = (?)_{16}$

d) $(ABC)_{16} = (?)_2$

e) $(127.54)_8 = (?)_{10}$

Q3) What is duality theorem? Explain master slave flipflop working in detail. **[10]**

Q4) Explain memory Hierarchy with neat diagram in detail. **[10]**

Q5) Write a brief note on programming language paradigm. **[10]**

Q6) Explain instruction-Execution-Interrupt cycle in detail with neat diagram. **[10]**

P.T.O.

Q7) Write Short notes (Any three): **[3 × 5 = 15]**

a) Interrupts

b) Performance of processor.

c) Multiplexer

d) Addressing modes.

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

P1824 **[Total No. of Pages : 3**

[4775] - 12
M.C.A. (Management Faculty) (Semester - I)
102 : C - PROGRAMMING
(2008 Pattern)

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

Instructions to the candidates:

1) ***Question one is compulsory.***
2) ***Solve any five questions from 2 to 7.***
3) ***Assume suitable data whenever necessary.***
4) ***Figure write hand indicates full marks.***
5) ***Answer all parts of a question at one place.***
6) ***Answer each part concisely.***

Q1) Explain and find output of the following programs. **[20]**

a)
```
#include<stdio.h>
int main (){
   int x,num=4;
   x=call(num);
   printf("%d",x);
   return 0;
}
int call(int num){
   static int x=1,y;
   if(num>0){
      x=x*num;
      y=call(num-1)+call(num-2);
    }
   return x;
}
```

b)
```
#include "stdio.h"
int main(){
   char arr[100];
    printf("%d",scanf("%s",arr));
   /* Suppose that input value given
      for above scanf is "GeeksQuiz"*/
   return 1;
}
```

P.T.O.

c)
```
#include <stdio.h>
// Assume base address of "GeeksQuiz" to be 1000
int main(){
   printf(5 + "GeeksQuiz");
   return 0;
}
```

d)
```
#include<stdio.h>
#define TOTAL_ELEMENTS (sizeof(array) / sizeof(array[0]))
int array[] = {23,34,12,17,204,99,16};
int main(){
   int d;
    for(d=-1;d<=(TOTAL_ELEMENTS-2);d++)
      printf("%d/n",array[d+1]);
   return 0;
}
```

e)
```
# define prod(a,b)=a*b
main(){
          int x=2;
          int y=3;
          printf("%d",prod(x+2,y-10));
}
```

Q2) a) Write a recursive function to find the sum of digits of a number. **[5]**

b) Write a C program to find out the sum of series 1/1! + 2/2! + ... + n/n!. **[5]**

Q3) a) Write a C program to accept a matrix of order N × N and display its major and miner diagonal elements. **[5]**

b) Write a C program to print Pascal triangle: **[5]**

```
                A
            A   B   A
        A   B   C   B   A
    A   B   C   D   C   B   A
A   B   C   D   E   D   C   B   A
```

Q4) Write a C program to create a file called emp.txt and store information about n persons, in terms of their name, age and salary. Read the file and display the persons whose salary is more than average salary of all persons. **[10]**

Q5) Write a C program to create Item structure having field Item_code, Item_name, Price and Quantity. Store n items information in Item structure and calculate the total price of each item and total price of all items. (total price of item = item price × quantity) **[10]**

Q6) a) Write a graphics program to display concentric ellipse. **[5]**

b) Write a C program to find the position of a sub-string in another string. **[5]**

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

a) Command-line arguments in the C language.

b) Conditional inclusion

c) Union in C.

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

P1825 [Total No. of Pages : 1

[4775] - 13

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

BM.11 - 103 : PRINCIPLES AND PRACTICES OF MANAGEMENT AND ORGANIZATIONAL BEHAVIOUR

(2008 Pattern)

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

Instructions to the candidates:

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

Q1) a) Explain the need and scope of management in every type of organization. **[15]**

b) Explain with examples the management skill is essential for efficient and effective management. **[10]**

Q2) What is organisational structure? Discuss the principles of organisational structure. **[15]**

Q3) What are the different 'Leadership styles'? What types of leadership style is effective in informal organisation. **[15]**

Q4) What are the causes of organisational conflicts? Explain with help of Johari window. **[15]**

Q5) What do you understand by "Managerial Decision making"? Describe the various decision making environments with examples. **[15]**

Q6) Write Short Notes (any three) : **[15]**

a) Line Vs Staff

b) OB models

c) Group Dynamics

d) Team Building

e) Planning Function

P.T.O.

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

P1826 [Total No. of Pages : 2

[4775] - 14
M.C.A.
MANAGEMENT FACULTY
IT - 13 : Operating System Concepts
(2008 Pattern)

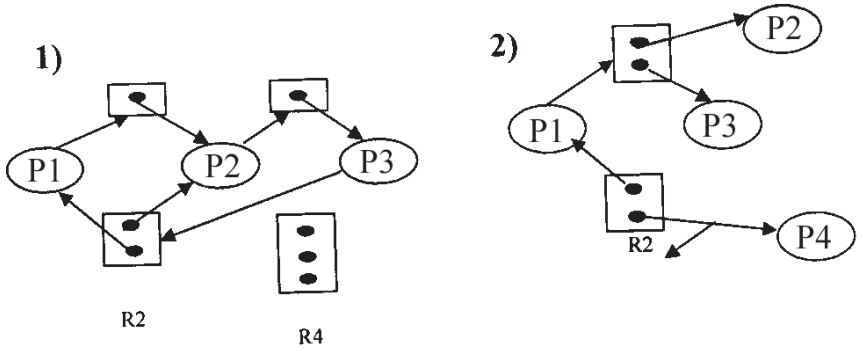
Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Questions 1 & 7 are compulsory.***
2) ***Answer any Four questions from remaining (Q2-Q6).***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***

Q1) a) What is resource allocation graph. **[2]**

b) Observe the following Resource allocation graphs tell whether there is a deadlock situation or not. Give the explanation for the same. **[8]**



Q2) Consider the following set of jobs with their arrival times, execution time (in minutes). **[10]**

Job Ids	Arrival Time	Execution Time
P1	0	5
P2	1	15
P3	3	12
P4	7	25
P5	10	5

Calculate the mean turnaround time and the average waiting time for FCFS and SJF Scheduling algorithms.

P.T.O.

Q3) a) What is Inter process Communication? **[2]**

b) Explain Shared Memory and Message passing models for IPC. **[8]**

Q4) How many page faults occur for FIFO, LRU and optimal page replacement algorithms for the. Following reference string with 3 page frames? State which algorithm gives you the minimum no of page faults. **[10]**

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

Q5) Explain the concept of segmentation with the help of example. **[10]**

Q6) Explain the different levels of RAID. **[10]**

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

a) Layered structure for operating system.

b) Memory Fragmentation

c) C-SCAN Scheduling

d) Global Operating system

e) Network File system (NFS)

Total No. of Questions : 4] **SEAT No. :**

P1827 **[Total No. of Pages : 2**

[4775] - 15

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

MT - 11 : DISCRETE MATHEMATICS

(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Attempt any two questions from Q. No. 2,3 and 4.***
3) ***Figures to the right side indicate full marks.***
4) ***Use of scientific Calculator is allowed.***

Q1) a) Show that $(P \to Q) \to Q \Rightarrow P \vee Q$. **[5]**

b) Prove that $\left((\exists x)(P(x) \wedge Q(x)) \to (\exists x)P(x) \wedge (\exists x)Q(x)\right.$. **[5]**

c) Let $A = \{1,2,3\}$ and f, g and h be functions from A to A such that $f = \{(1,2),(2,3),(3,1)\}, g = \{(1,2),(2,1),(3,3)\}$ and $h = \{(1,1),(2,2),(3,1)\}$. Then find **[5]**

i) fog ii) fogoh

iii) fohog

d) Given $A = \{1,2,3,4\}$ and relation R: A $\to$ A is $R = \{(1,2),(2,1),(2,3),(3,4),(4,1)$. Find the transitive closure of R. **[5]**

e) Show that sum of degrees of all the vertices in a graph is twice of the number of edges. **[5]**

f) Define Complete graph, Regular graph with suitable examples. **[5]**

Q2) a) A relation

$R = \{<1,1>,<1,2>,<1,4>,<2,1>,<2,2>,<3,2>,<3,3>,<4,4>\}$

defined over the set $A = \{1,2,3,4\}$. Is R an equivalence relation? **[5]**

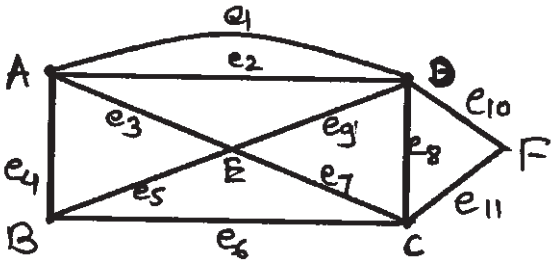
b) Let $A = \{1,2,4,6,8\}$ and for a,b $\in$ A, define a $\leq$ b if and only if b/a is an integer. Show that $\leq$ defines a partial order on A. Also draw the Hasse diagram. **[7]**

P.T.O.

c) i) Obtain the PDNF of $(\neg P \vee \neg Q) \rightarrow (P \leftrightarrow \neg Q)$ **[4]**

ii) Prove that a binary tree T with n vertices has (n+1)/2 pendant vertices. **[4]**

Q3) a) Obtain the incidence and adjancency Matrix for the following Graph. **[5]**



b) Define : Eulerian Circuit & Hamiltonian Circuit With Examples? **[7]**

c) i) Show that $(x)(y)(P(x,y) \rightarrow W(x,y)), \neg W(a,b) \Rightarrow \neg P(a,b)$ **[4]**

ii) Show that the following set of premises is inconsistent.

$A \rightarrow (B \rightarrow C); D \rightarrow (B \wedge \neg C)$ *and* $A \wedge D$ **[4]**

Q4) a) Let $G = \{1,2,3,4,5,6\}$. Find whether (G, X_7) is a cyclic group. If yes how many generators are there? **[5]**

b) Define Hamming distance between two words X and Y. State the properties of Hamming Distance. Define the minimum distance of a code. Give examples. **[7]**

c) Write the code words generated by H, where **[8]**

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

Total No. of Questions : 8] **SEAT No. :**

P1828 **[Total No. of Pages : 2**

[4775] - 21
M. C. A. (Management) (Semester - II)
IT - 21 : DATA STRUCTURES USING C
(2008 Pattern)

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

Instructions to the candidates:

1) ***Question 1 and 8 are compulsory.***
2) ***Solve any four from Q2 to Q7.***
3) ***Figures to right indicate full marks.***
4) ***Assume suitable data wherever necessary.***
5) ***Draw suitable diagram wherever necessary.***

Q1) a) Write a program to evaluate postfix expression. **[10]**

b) Write a program for INSERT and DELETE operations in circular queue. **[10]**

Q2) Write a program for addition of sparse matrices. **[10]**

Q3) Draw AVL tree for the following : **[10]**

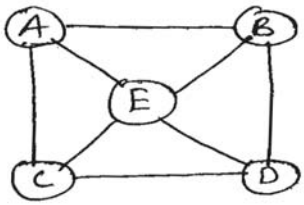
Nita, Pratik, Priti, Ravan, Somu, Joggy, Amar, Parmeet, Naresh, Varun.

Q4) Write a program for traversal, insertion and deletion in linear single linked list. **[10]**

Q5) Write a function for insertion of a node in a threaded binary tree. **[10]**

Q6) Write an algorithm and program to insert and delete an element from a queue. **[10]**

Q7) Generate BFS, DFS for node A adjacency matrix, adjacency list for following graph. **[10]**



P.T.O.

Q8) Write short note on (Any two) : **[2 × 5 =10]**

a) Abstract Data type.

b) Applications of Graph.

c) DEQUEUE.

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

P1829 **[Total No. of Pages : 2**

[4775] - 22
M C A (Management Faculty) (Semester - II)
I T - 22 : DATABASE MANAGEMENT SYSTEM
(2008 Pattern)

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

Instructions to the candidates:

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

Q1) A telecom company has launched its mobile services in Pune the following procedure is proposed by the authorities : **[20]**

a) At present there are 3 schemes for subscription.

b) Pune region is divided into different sales offices.

c) Customer can collect subscription forms from any sales office.

d) As per subscription type, payment by Do/cheque can be submitted.

e) Forms are verified, subject to realization of payment, customers is informed about mobile number later by a letter.

f) Customers picks up equipment from sales office normalize the case up to 3 NF and draw an E-R diagram for the same.

Q2) Differentiate between 2 tier and 3 tier architecture. **[10]**

Q3) What do you understand by recovery? Explain different recovery techniques. **[10]**

Q4) Explain relational algebra. Describe about any 5 symbols in detail. **[10]**

Q5) What is data warehousing? Explain it with proper diagram. **[10]**

Q6) a) Explain object oriented data base management system. **[5]**

b) What is the purpose of Indexes? Explain with example. **[5]**

P.T.O.

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

a) ACID properties.

b) Entities and attributes.

c) Relational model.

d) Database users.

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

P1830 [Total No. of Pages : 2

[4775] - 23

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

I T - 23 : SOFTWARE ENGINEERING

(2008 Pattern)

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

Instructions to the candidates:

1) ***Q. 1 and Q. 6 are compulsory.***
2) ***Attempt any three from the remaining.***

Q1) Nanded District Co-operative Society is interested in computerizing some of the activities. The Society has a branch at every taluka and Gram Panchayat. The activities are namely :

a) Maintain register of members.

b) Minutes of meetings.

c) Generate notices to the members and defaulters.

d) Annual subscription, membership dues etc.

i) Draw context level and first level DFD. **[10]**

ii) Prepare the SRS for the same **[10]**

Q2) Design a GUI form for Railway reservation system. **[10]**

Q3) Describe the phases of SDLC in detail. **[10]**

Q4) Explain the role of documentation in maintenance and types of documentation. **[10]**

Q5) Explain decision tree, decision table with proper examples. **[10]**

P.T.O.

Q6) Write Short Note : (any four) **[4 × 5 = 20]**

a) Reverse engineering.

b) Code Design.

c) Structured English.

d) Data Dictionary.

e) Structured charts.

Total No. of Questions : 5] **SEAT No. :**

P1831 **[Total No. of Pages : 1**

[4775] - 24

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

BM - 21 : 204 : SOFT SKILLS

(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Attempt any three questions from remaining questions.***

Q1) a) Discuss formal and informal communication. **[10]**

b) What is communication? Explain the process of communication. **[15]**

Q2) Highlight the importance of listening and the barriers of listening. **[15]**

Q3) Discuss in brief self-esteem. Explain low and high self-esteem. **[15]**

Q4) Prepare a circular to inform Donars and Volunteers to offer gifts to orphan. **[15]**

Q5) Write any three short notes : **[15]**

a) Work culture a need of Business.

b) Email etiquette.

c) Telephone etiquette.

d) Importance of Time Management.

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

P1832 [Total No. of Pages : 3

[4775] - 25

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

MT - 21 : 205 : PROBABILITY & COMBINATORICS

(2008 Pattern)

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 non programmable 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.

$x_1+x_2+x_3=41 \quad x_1\geq 4, x_2>3, x_3>0$ **[7]**

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]**

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

Find : i) k

ii) Var X

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

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

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

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

iii) $P(x < 1 | y < 3)$

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. :

P1833 [Total No. of Pages : 2

[4775] - 31
M.C.A. (Management Faculty) (Semester - III)
IT - 31: Web Support Technologies
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.No. 1 is compulsory.***
2) ***Attempt any five from remaining.***
3) ***Figures to the right indicate full marks.***

Q1) a) Explain error Handling in VBScript with examples. **[10]**

b) Explain event handling in JavaScript with examples. **[10]**

Q2) Design a form to accept international conference registration details and validate any five fields with different formats using JavaScript. **[10]**

Q3) Write XML to maintain 'International Journal' details like volume, issue, ISSN, Title, publisher, subscription-rate, etc and convert XML into HTML format with header and footer. **[10]**

Q4) What is CSS? Explain different types of CSS properties with examples. **[10]**

Q5) a) Explain DOM parser with examples. **[5]**

b) Explain string and date object in java script. **[5]**

Q6) a) Explain Global.asa with examples. **[5]**

b) Explain request and response object with examples. **[5]**

P.T.O.

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

a) N-tier Architecture.

b) History and location object in DOM.

c) SOAP.

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

P1834 **[Total No. of Pages : 2**

[4775] - 32

M.C.A. (Management Faculty) (Semester - III)
IT - 32: Data Communication and Computer Networks
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.1 and Q.7 are compulsory.***
2) ***Attempt any three from remaining.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***

Q1) a) Justify with **True** or **Flase** (not more than **60** words). **[10]**

i) The data rate of the ISDN basic access D-channel is 192 Kbps.

ii) HTTP is a request and response protocol.

iii) A 1-persistant strategy requires a station to transmit immediately after sending on idle medium.

iv) The more host addresses allocated for, the fewer network address available.

v) Only the dynamic address allocation scheme is used in DHCP.

b) What is HTTP? What are the different types of HTTP request? Explain any five of them. **[10]**

Q2) What is the limitation of network and host addressing scheme of Class - A, Class-B and Class-C. What is the default mask for the following IP host addresses 172. 14.6.8 and 205.35.66.12.

(Solve with proper procedure). **[10]**

Q3) Define and explain transport layer services. What are the advantages of UDP over TCP? **[10]**

P.T.O.

Q4) What is firewall? Explain policies and rules of firewall. **[10]**

Q5) Explain DHCP scope resolution with examples. **[10]**

Q6) What are the advantages of using virtual path in ATM? Explain traffic management in ATM. **[10]**

Q7) Write short notes (any 4). **[20]**

a) Packet switching.

b) TCP/IP model.

c) Resource record.

d) FTP.

e) SNMP organization.

f) Secure socket layer.

Total No. of Questions : 8] SEAT No. :

P1835 [Total No. of Pages : 3

[4775] - 33

M.C.A. (Management Faculty) (Semester - III)
IT - 33 – 303 : Object Oriented Programming Using C++
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.No. 1 is compulsory.***
2) ***Solve any six from Q. 2 to Q. 8.***

Q1) Write output with Explanation : **[5 × 2 = 10]**

a)
```
#include <iostream.h>
#define SQUARE(x) x*x
inline float square (float y)
{
    return y * y;
}
int main()
{
    float a=0.5, b=0.5, c, d;
    c=SQUARE(++a);
    d=square(++b);
    cout<<''c=>''<<c<<''\td=>''<<d;
    return 0;
}
```

b)
```
#include<iostream.h>
#include<conio.h>
#include<iomanip.h>
void main( )
{
    int x=100;
    float f=56.75;
    cout<<hex<<x<<dec<<x<<endl;
    cout<<setw(8)<<setfill('#')<<f;
}
```

P.T.O.

c)
```
#include<iostream.h>
void main( )
{
        char s [ ] =" PROGRAM";
        int i ;
        for(i=0;s[i];i++)
                cout<<"\n"<<s[i++]<<*(s+i);
}
```

d)
```
#include<iostream.h>
class MCA
{
 public:
        int a;
 private:
        int b;
  protected:
        int c;
};
void main ( )
{
 MCA M;
   cout<<M.a<<M.b<<M.c;
}
```

e)
```
#include<iostream.h>
void main( )
{
int a=10;
while( 1 )
{
        switch(a)
        {
                        case 10:cout<<a++;
                        case 11:cout<<a--;
                        case 12:cout<<a++;
                }
}
}
```

Q2) a) Write a program for finding largest of three elements using function template. **[5]**

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

Q3) a) What is namespace? Explain how it is used to solve conflict. **[5]**

b) Explain how to create user define manipulators with example. **[5]**

Q4) a) What is constructor? Explain type of constructor. **[5]**

b) What is Exception? Explain how certain exception types are not allowed to be thrown. **[5]**

Q5) Write a program that create file which has information Name, A/c number, balance and perform following operation on it through menu. **[10]**

a) Add record

b) Modify balance of specific a/c no

c) Display content of file

d) Display name of person having balance > 10,000

Q6) a) Write a program to overload (). **[5]**

b) Explain need of virtual base class with example. **[5]**

Q7) Write a program that create two classes Dangle and Rangle. Dangle stores angle in degree and Rangle stores angle in Radian. Write appropriate function so user can be able to write D = R and R = D. Where R is object of Rangle and D is object of Dangle (Angle in Radian = Angle in degree * 3.142 / 180). **[10]**

Q8) Write short note on (any two) **[2 × 5 = 10]**

a) New style cast.

b) Standard template library.

c) Static data member & static member function.

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

P1836 [Total No. of Pages : 1

[4775] - 34

M.C.A. (MANAGEMENT FACULTY) (Semester - III)
IT 34 – 304: Advanced Database Management Systems
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.No. 7 is compulsory.***
2) ***Solve any five questions from 1 to 6.***
3) ***Figures to the right indicate full marks.***

Q1) Explain intra-operational and inter - operational parallelism. **[10]**

Q2) Differentiate between: OODBMS, ORDBMS, RDBMS. **[10]**

Q3) Explain 2PC protocol in distributed DBMS. **[10]**

Q4) What is data mining? Explain any 2 approaches/algorithms used in data mining. **[10]**

Q5) Discuss the ETL process in detail. **[10]**

Q6) What is XML? Explain what is DTD & its importance with example. **[10]**

Q7) Write short note any 4 **[4 × 5 = 20]**

a) Visualization.

b) Multimedia databases.

c) Outlier analysis.

d) Predictive mining.

e) Fact constellation schema.

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

P1837 [Total No. of Pages : 2

[4775] - 35

M.C.A. (Management Faculty) (Semester - III)
BM - 31 : Management Support System and Is Security
(2008 Pattern)

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

Instructions to the candidates:

1) ***Q.No. 1 and 7 are compulsory.***
2) ***Attempt any four from Q. No. 2 to Q. No. 6.***
3) ***Figures to the right indicate full marks.***

Q1) Define exception and explain how to handle exception in management support system. **[10]**

Q2) Explain in detail the structure of MIS based on management activities and functions. **[10]**

Q3) Brief newell - simon model of human information processing system. **[10]**

Q4) Explain the information requirement for functional area with respect to production management. **[10]**

Q5) What is heuristic programming? Explain decision making heuristics in detail. **[10]**

Q6) Define expert system. Differentiate conventional and expert system. **[10]**

P.T.O.

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

a) Simulation technique.

b) Operational research techniques.

c) Subsystem approach.

d) Feedback control.

e) Integrated executive information system.

f) Control audit of information security.

Total No. of Questions : 8] SEAT No. :

P1838 [Total No. of Pages : 2

[4775] -41

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

IT - 41 : JAVA PROGRAMMING

(2008 Pattern)

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

Instructions to the candidates :

1) ***Question 1 compulsory.***
2) ***Solve any six from remaining.***

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

a) What is Adapter class?

b) Explain checked exceptions.

c) What is method overloading?

d) How static keyword is used?

e) Explain Result set Metadata.

Q2) Write JDBC application to register Kabaddi team for Pro-Kabaddi matches. Assume suitable structure. **[10]**

Q3) Write multi threaded server - client chatting application. **[10]**

Q4) Write an applet to display mouse position on status line. **[10]**

P.T.O.

Q5) What is user defined exception? Explain with example. **[10]**

Q6) Write Java application that reads lower case stream from command line and writes it to file strcomp.txt in upper case. **[10]**

Q7) What is RMI architecture? Explain with example. **[10]**

Q8) Write Notes : **(**Any Two**)** **[10]**

a) Types of beans

b) Explain any 5 controls of AWT.

c) Access specifiers.

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

P1839 [Total No. of Pages : 2

[4775] - 42

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

IT - 42 : SOFTWARE TESTING AND QUALITY ASSURANCE

(2008 Pattern)

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

Instructions to the candidates :

1) ***Q. 1 and Q. 6 are compulsory.***
2) ***Attempt any 3 from the remaining.***
3) ***State assumptions if any.***
4) ***Draw neat labeled diagrams where necessary.***
5) ***Figures to right indicate marks.***

Q1) Write a detailed test plan for web based railway reservation system. Your plan should cover scope of testing, risks and contingencies, strategies and schedule. Write test cases for login screen, ticket availability screen, ticket booking and cancellation screen, source and destination fields. **[20]**

Q2) What do you mean by Acceptance testing? Explain functional testing attributes in detail. **[10]**

Q3) Calculate cyclometric complexity & design test cases for printing the area of a rectangle. **[10]**

Q4) Write a brief note on Testing Life cycle. **[10]**

Q5) What is the need of process improvement & how it can be achieved? **[10]**

P.T.O.

Q6) Write short notes on (Any four) **[20]**

a) Reliability Models

b) SQA building blocks

c) CAST

d) Testing levels

e) White Box Testing.

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

P1840 [Total No. of Pages : 2

[4775] - 43

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

IT - 43 - 403 : OBJECT ORIENTED ANALYSIS AND DESIGN

(2008 Pattern)

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

Instructions to the candidates :

1) ***Q.1 is compulsory.***
2) ***Solve any 5 questions from remaining.***
3) ***Mention the assumptions made for solving case study.***

Q1) ICBI Bank is a global commercial bank based in China. It plans to build an online Credit Card Management System in order to handle a large amount of information in an efficient way and provide better service to their customers.Most commercial banks provide the following major online services to facilitate their credit card business. Credit Card application, on-line credit card payment, Special offers to customer, Credit Card transaction checking etc. With the advance of information technology, ICBI is planning to extend the above services through online Credit Card Management System (CCMS).

- Customers may make an application by filling up an online application form through the CCMS.
- The transaction data with respect to customer's payments and purchases taking place randomly are transferred from the Card Brand Corp. to CCMS on a daily basis at each midnight (12:00 p.m.)
- CCMS allows customers to check their Credit Card transactions and monthly statement information online.

a) Draw use Case diagram.

b) Draw class diagram.

[20]

P.T.O.

Q2) Explain Coad - Yourdan methodology for object Oriented Analysis (OOA). **[10]**

Q3) Draw the activity diagram for online Flight Reservation System. Write your own assumptions. **[10]**

Q4) a) Draw a Sequence diagram for the registration at Job Portal for placement. **[5]**

b) Draw a Collaboration diagram for sending an SMS to your friend. **[5]**

Q5) Draw a State - transition diagram for an automatic washing machine. **[10]**

Q6) Explain Unified Approach with all the components. **[10]**

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

a) OODBMS

b) Common Class Pattern approach

c) Categories of Pattern

d) Test Case Guidelines.

Total No. of Questions : 4] SEAT No. :

P1841 [Total No. of Pages : 4

[4775] - 44
M.C.A. (Semester - IV) (Management Faculty)
MT - 41 : OPTIMIZATION TECHNIQUES
(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Solve any TWO questions from question Nos. 2,3, and 4.***
3) ***Use of Scientific Calculator and Statistical Tables are allowed.***
4) ***Figures to the right indicate full marks.***

Q1) a) A project consists of different activities and relevant data as follows: **[9]**

Activity	Immediate predecessor	Duration (weeks)		
		Optimistic	Most Likely	Pessimistic
A	-	2	3	4
B	-	2	2	2
C	A	2	4	6
D	A	5	7	9
E	B	1	2	3
F	C	2	2	2
G	E	2	3	4
H	E	1	4	7
I	D,G	1	3	5
J	F, I	1	5	9

i) Draw PERT Network of the project.

ii) Find the Expected duration of the project and variance.

iii) Fine the probability that the project will completed before 16 weeks.

b) Solve the following Integer Programming Problem: **[9]**

$Max : Z = 2x_1 + 5x_2$

Subject to :

$2x_1 + 5x_2 \leq 10$

$4x_1 + 3x_2 \leq 20$

$x_1, x_2 \geq 0$ and integers

P.T.O.

c) A TV repairman finds that the time spent on his jobs has an exponential distribution with mean 30 minutes. If he repairs sets in the order in which they come in. if the arrival of sets is approximately Poisson with an average rate of 10 per 8-hour day, Find: **[6]**

i) Repairman's expected idle time each day.

ii) Expected number of TV sets in the shop.

d) Following table represents performance of salesman (sales in '000 units) in different districts. Solve the assignment problem to optimize the sales. **[6]**

		District				
		D_1	**D_2**	**D_3**	**D_4**	**D_5**
Salesman	**S_1**	7	8	2	5	2
	S_2	2	8	6	7	6
	S_3	8	4	3	9	6
	S_4	9	8	4	2	5
	S_5	2	8	5	3	6

Q2) a) Find the Optimum Solution for the given Transportation Problem: **[9]**

		Warehouses				Supply
		P	Q	R	S	
Factory Plants	A	10	8	7	12	500
	B	14	12	8	8	600
	C	7	9	14	10	200
	D	8	10	12	14	700
Demand		700	550	450	300	

b) The following are the failure rates of certain types of capacitors. **[6]**

Week:	1	2	3	4	5
percent of failing at end of week:	10	25	55	80	100

There are 1000 such capacitors are present in the machine. The cost of replacing individually a failed capacitor is Rs.3. If all the capacitors are replaced at fixed interval, whether they are working or not working, it would cost Re.1 per capacitor. What policy the maintenance manager should follow between individual replacement policy and group re placement policy, if group policy is adopted, at what interval of time he should replace all capacitors.

c) Draw the network diagram for the following data: **[5]**

Activity	A	B	C	D	E	F	G	H	I	J	K
Predecessor	-	A	A	C,B	D	D	D	G	F,H	I	E,I

Q3) a) Solve the following LPP by Big M method : **[9]**

$Min : Z = 3x_1 + 6x_2$

Subject to :

$7x_1 + 5x_2 \geq 35$

$4x_1 + 10x_2 \geq 80$

$x_1, x_2 \geq 0$

b) An aircraft requires 5000 Kg of rivets per year. The cost of 1 Kg of rivet is Rs. 20 and it costs Rs.200 to place an order and the carrying cost is 10% per unit per year. Find: **[6]**

i) The Optimum Lot Size

ii) The time interval between the orders

iii) Minimum yearly total cost.

c) Explain the terms: **[5]**

i) Optimistic Time

ii) Slack

iii) Unbounded Solution

iv) Unbalanced Transportation Problem

v) Alternate Optimum Solution

Q4) a) The time (days) and costs of a certain project is given in the following table: **[9]**

Activity	Normal		Crash	
	Time	Cost	Time	Cost
1 - 2	7	1600	4	1900
1 - 3	8	2000	5	2900
2 - 3	4	1100	2	1500
2 - 4	3	800	2	1400
3 - 4	0	0	0	0
3 - 5	6	900	3	1500
4 - 6	10	2500	6	3500
5 - 6	3	500	2	800

The indirect cost of the project is Rs. 300 per day. 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) Express the following Assignment Problem as LPP: **[6]**

	A	**B**	**C**	**D**	**E**
I	3	8	5	3	8
II	2	4	4	6	8
III	3	3	5	7	4
IV	5	4	2	2	7
V	8	1	8	5	3

c) Describe the various characteristics of the queuing system. **[5]**

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

P1842 [Total No. of Pages : 2

[4775] - 45

M.C.A. (Management Faculty) (Semester - IV)
MIS FRAMEWORK & IMPLEMENTATION
(2008 Pattern) (Elective)

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

Instructions :

1) *Q.1 and 7 are compulsory.*
2) *Solve any four questions from remaining.*
3) *Figures to the right indicate full marks.*

Q1) Define MIS. Explain need and objectives of MIS in detail. **[10]**

Q2) How Information Technology charging the way Human Resource function is performed. **[10]**

Q3) Explain the different threats to IT Infrastructure. **[10]**

Q4) Explain the informational needs of the manager working at different levels of managerial hierarchy. **[10]**

Q5) Explain the impact of IT Infrastructure on the Socio-economic environment of the organization. **[10]**

P.T.O.

Q6) Explain the role played by IT - Infrastructure in operational control and decision support system in an organization. **[10]**

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

a) Group Decision Support System

b) Competitive Advantage

c) Expert System

d) Critical Success Factor in Implementing IT applications

e) Objectives of good IT Policy.

Total No. of Questions : 9]

SEAT No. :

P1843

[Total No. of Pages : 2

[4775]-46

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

412: FOUNDATION OF DECISION PROCESSES

(2008 Pattern) (Elective)

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 various Models of Queuing system. **[10]**

Q2) A retailer purchases strawberries every morning at Rs.50 a case and sells them for Rs.80 a case. Any case remaining unsold at the end of the day can be disposed off next day at a salvage value of Rs.20 per case (thereafter they have no value). Past sales have ranged from 15 to 18 cases per day. The following is the record of sales for the past 120 days. **[10]**

Cases Sold	15	16	17	18
No. of Days	12	24	48	36

Find how many cases the retailer should purchase per day to maximize his profit.

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

P.T.O.

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.

Q4) Explain the steady state Markov process with example. **[10]**

Q5) In a Bank, handled by one teller, customers arrive at the rate of 15 in an hour. The teller takes 2 minutes to handle a customer. Find: **[10]**

a) The probability that the teller is busy.

b) Expected number of customers waiting in the bank.

c) The average time spent by the customer in the bank waiting for their turn.

Q6) Explain the various decision making criteria with illustrations. **[10]**

Q7) Solve the game for the given pay-off matrix: **[10]**

–5	3	1	20
5	5	4	6
–4	–2	0	–5

Q8) Explain the dominance rules in Game with proper example. **[10]**

Q9) A company manufactures 30 items per day. The sale of these items depends upon demand which has the following distribution: **[10]**

Sales (Units)	27	28	29	30	31	32
Probability	0.10	0.15	0.20	0.35	0.15	0.05

The production cost and sale price of each unit are Rs.40 and Rs.50 respectively. Any unsold product is to be disposed off at a loss of Rs.15/- unit.

Use the following random numbers to estimate total profit/loss for next 10 days.

10 99 65 97 01 79 11 16 20 34

Total No. of Questions : 6]

SEAT No. :

P1844

[Total No. of Pages : 1

[4775]-47

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

INFORMATION SYSTEM AUDIT AND GOVERNANCE

(2008 Pattern) (BME-1) (Elective)

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

Instructions to the candidates:

1) ***Q.1 and Q.6 are compulsory.***
2) ***Solve any 3 from Q.2 to Q.5.***
3) ***Figures to the right side indicate full marks.***

Q1) You are appointed as an external auditor for a networking firm ABC. Explain various physical & logical network controls for handling network issue of the firm. Generate the report of list of evidences. **[20]**

Q2) Explain Audit Standards in detail. **[10]**

Q3) Explain various steps involved in Risk Assessment process. **[10]**

Q4) Discuss in brief different IT crimes along with security and privacy issues. **[10]**

Q5) Explain the framework of e-commerce. **[10]**

Q6) Short notes (any four) : **[4 × 5 = 20]**

a) Digital Signature.
b) Management Control.
c) Segregation of duties.
d) E-governance.
e) Long term and short term plan.

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Total No. of Questions : 7]

SEAT No. :

P1845

[Total No. of Pages : 1

[4775]-48

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

BME-414: COLLABORATIVE MANAGEMENT

(2008 Pattern) (Elective)

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

Instructions to the candidates:

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

Q1) Explain in detail Mckinsey's 7s frame work. **[14]**

Q2) What are the different stakeholders of an organization? What roles do they play in strategic issue identification and resolution? **[14]**

Q3) Explain different types of growth strategies and issues involved in post acquisition scenario with examples. **[14]**

Q4) Explain Porter's Five forces Model in detail. **[14]**

Q5) Explain the importance of Corporate Social Responsibility. **[14]**

Q6) a) Define strategy and strategic management.

b) Define Budgeting. Explain the importance of budgeting in corporate planning.

[14]

Q7) Write short notes (Any Two) : **[14]**

a) Diversification Strategies.

b) Project implementation.

c) Symptoms of malfunctioning of strategy.

d) Competitive Advantage.

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Total No. of Questions : 7]

SEAT No. :

P1846

[Total No. of Pages : 1

[4775]-49

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

BME-5-415: DECISION SUPPORT SYSTEM

(2008 Pattern) (Elective)

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

Q2) Explain importance of Artificial Intelligence and expert system in DSS. **[10]**

Q3) Explain traditional SDLC and state alternative development methodologies. **[10]**

Q4) Explain the database organization and structures used in DSS. **[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 note on (any four) : **[20]**

a) SCM.

b) Risk factors in end user developed DSS.

c) DSS Implementation.

d) OLAP.

e) ODSS.

✷ ✷ ✷

Total No. of Questions : 6]

SEAT No. :

P1847

[Total No. of Pages : 2

[4775]-50

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

ENTERPRISE RESOURCE PLANNING

(2008 Pattern) (BME - I)

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

Instructions to the candidates:

1) ***Question No. 1 & 6 are compulsory.***
2) ***Solve any three from Q.2 to Q.5***
3) ***Figures to the right indicate full marks.***

Q1) 'Ratnadeep Warehouse Pvt. Ltd', is a well reputed business organization engagged in warehousing, supply chain management and transportation activities across Maharashtra. Presently the organization is having manual system for administrative work which is time consuming and incompetent. So the top management has decided to develop the integration of various functionalities for office automation. As an ERP consultant discuss the pre-implementation & post implementation key success factors. Also prepare the detail report about the ERP implementation. **[20]**

Q2) a) Explain the importance of component based ERP system. **[5]**

b) Discuss the Human Resource Management module in purview of ERP implementation. **[5]**

Q3) a) Explain the importance of Data mining tools for ERP system. **[5]**

b) Explain the role of middle management in ERP implementation. **[5]**

Q4) What is BPR? Explain BPR lifecycle in detail with suitable diagram. **[10]**

Q5) Explain 'CRM attained through ERP' with suitable example. **[10]**

P.T.O.

Q6) Write short notes on any four of following : **[20]**

a) GAP Analysis.

b) Data Warehousing.

c) DSS.

d) Applications of OLAP.

e) Fmea & SCM.

Total No. of Questions : 7]

SEAT No. :

P1848

[Total No. of Pages :2

[4775] - 51

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

IT 51: HUMAN COMPUTER INTERFACE

(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]**

P.T.O.

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. :

P1849

[Total No. of Pages :2

[4775] - 52

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

SOFTWARE PROJECT MANAGEMENT

(2008 Pattern)

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

Instructions to the candidates :

1) ***Q. No. 1 is compulsory.***

2) ***Solve any five from remaining.***

Q1) a) Explain COCOMO Model in depth with all its models & examples. **[10]**

b) Explain in detail Software Configuration Management. **[10]**

Q2) Explain Project Development Life Cycle with the help of a Diagram. **[10]**

Q3) Explain different Software Testing Methods. Compare Black Box & white Box testing methods. **[10]**

Q4) What is function point analysis? How is it used to determine cost of project? **[10]**

Q5) State benefits of component based Software development. **[10]**

Q6) Explain CMM in all its phases with example. **[10]**

P.T.O.

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

a) Version Control

b) Software reviews

c) CPM/PERT

d) Practices & controls in HRM.

Total No. of Questions : 7]

SEAT No. :

P1850

[Total No. of Pages :2

[4775] - 53

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

IT - 53: EMERGING TRENDS IN INFORMATION TECHNOLOGY

(2008 Pattern)

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

Instructions to the candidates :

1) *Q. 1 and Q. 7 are compulsory.*
2) *Attempt any four from remaining.*

Q1) Star - auto is a automobile industry specialized in designing and manufacturing hatch back cars - it has corporate office in pune and 5 plants in all over India. Design business Continuity Planning System which would be implemented in corporate office and all the plants of star auto. **[15]**

Q2) Discuss various E-learning models in detail. **[10]**

Q3) What is knowledge managements? Explain architecture and tools of it. **[10]**

Q4) What is GIS? Explain spatial objects and data models. **[10]**

Q5) What is E- agriculture? Explain corp management. **[10]**

Q6) Explain in detail warehousing management and transportation management. **[10]**

P.T.O.

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

a) ERP packages

b) Digital signatures

c) Palm devices

d) RFID

Total No. of Questions : 7]

SEAT No. :

P1851

[Total No. of Pages :2

[4775] - 54

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

IT - 55: ADVANCED INTERNET TECHNOLOGY

(2008 Pattern)

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

Instructions to the candidates :

1) ***Questions NO.1 & Question No. 7 are compulsory.***
2) ***Attempt any four questions from remaining.***
3) ***Right side indicates marks.***

Q1) What is E-commerce? what are the types of E-commerce? Explain benefits of E- commerce. **[15]**

Q2) Write a servlet program to accept online registration details of candidates for appearing campus drive for Infosys.Assume suitable table structure. **[10]**

Q3) Write a PERL program to accept a string , character from user and count the number of times that particular character occurs in a given string also display number of characters, number of words & No. of punctuations (!,?,",etc) present in a string. **[10]**

Q4) Write a PHP code to display company wise student's placement report of MCA-III yr. (Assume suitable table structure). **[10]**

Q5) Explain pattern matching in PERL with example. **[10]**

P.T.O.

Q6) Explain types of arrays, with any five methods in PERL. **[10]**

Q7) Write short note on any three. **[15]**

a) Cookies in servlet

b) ISP standard Actions

c) ISP directives

d) CGI Architecture

e) PHP Error Handling

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

P1853 **[Total No. of Pages :2**

[4775]-56
M.C.A. (Management Faculty) (Semester - V)
PROGRAMMING LANGUAGES PARADIGM
(Elective)
(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. 1 and 7 are compulsory.***
2) ***Attempt any FOUR questions from remaining.***
3) ***Figures to the right side indicate full marks.***

Q1) Explain program interpretation and execution in conventional computer with block diagram. **[15]**

Q2) Explain binding time classes and its importance in programming Language. **[10]**

Q3) Explain implementation of recursive function call. **[10]**

Q4) Explain syntactic elements of a programming Language. **[10]**

Q5) Explain stack and heap storage management. **[10]**

Q6) Explain analysis of source program with block diagram. **[10]**

P.T.O.

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

a) Composite Data Types

b) Firmware Computer

c) Methods of parameter transmission

d) Features of Java Language

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

P1854 **[Total No. of Pages :2**

[4775]-57

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

ITE - 1: ADVANCED UNIX (Elective)

(2008 Pattern)

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

Instructions to the candidates:

1) ***Question No. one and seven are compulsory.***
2) ***Solve any four from remaining.***
3) ***Assume suitable data whenever necessary.***
4) ***Figures to the right side indicate full marks.***

Q1) Explain the following system calls/functions (any five): **[5 × 2 = 10]**

a) open()

b) mount()

c) wait()

d) close()

e) kill()

f) free()

Q2) Describe the use of File and Record locking. And explain how to implement them. **[10]**

Q3) What is Orphan Process? Explain the ways by which it can be avoided. **[10]**

Q4) What are pipes? What happens when a pipe system is called? Explain how they are different from ordinary files. **[2 + 4 + 4]**

P.T.O.

Q5) What are message Queues? Explain the structure of information maintained by Kernel for every message Queue. **[4 + 6]**

Q6) What is shared memory? What is the importance of it? Explain in detail about the process of "Allocating a shared memory segment". **[3 + 2 + 5]**

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

a) inode table

b) Methods of Inter Process Communication

c) Process states

d) Zombie process

e) buffer queue

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

P1855 **[Total No. of Pages :2**

[4775]-58

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

MOBILE COMPUTING

(2008 Pattern)

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

Instructions to the candidates:

1) ***Question 1 and 7 are compulsory.***
2) ***Attempt any three from remaining.***

Q1) a) Define the following Terms. **[10]**

i) TCP issue

ii) CDMA

iii) SIM

iv) Mobile Management

v) UMTS

b) Compare DSSS & OFDM. **[10]**

Q2) Explain the logical channel of GSM network. **[10]**

Q3) How can DHCP used for mobility & How it support to mobile IP. **[10]**

Q4) What is WAP gateway? What are its function. **[10]**

Q5) What is Hidden rode problem and how it is resolved in 802.11. **[10]**

P.T.O.

Q6) What are the Advantage and disadvantage of wireless networking. **[10]**

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

a) Visitor Location Register

b) Frame Error Rate

c) Function of mobile Management

d) SPIN

e) Distributed Computation

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Total No. of Questions : 8] **SEAT No. :**

P1856 **[Total No. of Pages :2**

[4775]-59

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

ITE5: DISTRIBUTED DATABASE MANAGEMENT SYSTEM

(2008 Pattern) (Elective)

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

Instructions to the candidates:

1) ***Question No. 8 is compulsory. Solve any 5 from remaining.***
2) ***Draw suitable diagram where needed.***
3) ***Give suitable examples if required.***
4) ***Whenever necessary state assumptions.***
5) ***Right side indicates marks.***

Q1) Explain the various Distributed design Issues. **[10]**

Q2) What are the different types of fragmentation? Explain with suitable example**. [10]**

Q3) What is query optimization? Explain the various factors governing query optimization. **[10]**

Q4) What is a transaction and explain the various goals of transaction management with respect to distributed databases. **[10]**

Q5) What is Dom? Explain the various reasons why objects are distributed.**[10]**

Q6) What is reliability in DDBMS and explain the various types of failures.**[10]**

Q7) Explain the various concurrency control mechanism for Distributed databases. **[10]**

P.T.O.

Q8) Write short notes (any four): **[20]**

a) Objectives of query Processing

b) Global Directory Issues.

c) Advantages of DDBMS.

d) Fragmentation and its types.

e) States of Transaction.

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