

Total No. of Questions : 7]

[Total No. of Printed Pages : 3

**[3777]-101**

**M. C. M. ( Semester - I ) Examination - 2010**

**‘C’ PROGRAMMING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

(1) Q. No. 1 is compulsory.

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

---

---

**Q.1) (A)** What will be the Output ? Justify your answer. Assume appropriate header files are included.

**[12]**

(a) `main( )`  
    {  
        int z = 0;  
        while(z++<4)  
            printf(“hi”);  
    do {  
        printf(“Bye”);  
    }(while(z++<8);  
    }  
(b) `main( )`  
    {  
        int i, j, x = 0;  
        for(i = 0 ; i < 4 ; i++)  
        {  
            for(j = 0 ; j < i ; ++j)  
            {  
                switch(i + j - 1)  
                {  
                    case-1 :  
                    case 0 : x + = 2; break;

```

        default : x += 4; break;
        case 1 :
        case 2 :
        case 3 : x += 3; break;
    }
    printf("%t", x);
}
}
}
(c) main( )
{
    int i = 8, j = 9;
    int k = i & j;
    printf("%d", k);
    if (i & j)
        printf("hi");
    else
        printf("bye");
}
(d) main( )
{
    char *p = "hello";
    char *q = "bye";
    char *z = strcat (p, q);
    printf("%s", z);
}

```

(B) Explain : [08]

(a) Dynamic Memory Allocation

(b) File Related Functions

**Q.2)** Write a recursive function which accepts a number and returns total no. of digits in that number. (Eg. if no. is 12347, then 5 should be the answer.) [10]

**Q.3)** Write a function which will compare two character arrays and will return 1 if both are same, otherwise return 0; [10]

Prototype of the function is int comparearray (char [ ], char [ ])

**Q.4)** Accept information about cricket players as teamno, playerno, playername, no\_of\_runs, no\_of\_wickets with proper data types for 30 players. Print name of the person with highest no\_of\_runs and name of the person with highest no\_of\_wickets. [10]

**Q.5)** Accept name of the file from command line and print odd positioned lines in the file. [10]

**Q.6)** Accept 12 float values in an array. Sort array in descending order. [10]

**Q.7)** Print following pattern using loops : [10]

?

?#

?#?

?#?#

?#?#?

Total No. of Questions : 8]

[Total No. of Printed Pages : 1

**[3777]-102**

**M. C. M. (Semester - I) Examination - 2010**

**FUNDAMENTALS OF INFORMATION TECHNOLOGY**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question No. 1 is compulsory.
- (2) Attempt **any 5** from the remaining.
- (3) Figures to the right indicate full marks.

- 
- 
- Q.1)** (A) Define Computer. Explain block diagram of Computer with functions of each unit. **[12]**
- (B) Solve : **[08]**
- (a)  $(320)_{10} = (?)_2$
  - (b)  $(11010110)_2 = (?)_{10}$
  - (c)  $(DCB)_{18} = ( )_{10}$
  - (d)  $(128)_{10} = (?)_8$
- Q.2)** Explain any two Input Devices. **[10]**
- Q.3)** Differentiate between Windows Operating System and Open Source Operating System. **[10]**
- Q.4)** Explain different types of Computer Languages with merits and demerits. **[10]**
- Q.5)** Define Network and explain different Networking Components. **[10]**
- Q.6)** Explain Virtual Memory and Cache Memory with diagram. **[10]**
- Q.7)** Explain any five Layers of OSI Model. **[10]**
- Q.8)** Compare between Magnetic Disk and Compact Disk. **[10]**

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-103**

**M. C. M. (Semester - I) Examination - 2010**

**SOFTWARE ENGINEERING AND BUSINESS PROCESS**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 6 are compulsory.
- (2) Solve **any three** from Q. Nos. 2, 3, 4 and 5.

---

**Q.1)** The Management of Ruby Hall Hospital has computerised their operations. There are doctors who are full time, resident and visiting with various specialisations. There are consulting doctors visiting hospital at different hours of the week. Charges for the same can vary from doctor to doctor (depending on their experience). Patients are admitted to the hospital for various reasons like accidental cases, contagious disease, long history cases (diabetes). Patients are admitted according to the category of their disease, the room charges vary according.

- (a) Draw an ERD diagram. **[10]**
- (b) Table Design for the above case **[10]**
- (c) Patient Bill **[05]**

**Q.2)** Explain CASE Tools with its components. **[10]**

**Q.3)** Vidhut Technologies have come up with a site [www.clearing.com](http://www.clearing.com). The users are students who are doing their post graduation courses. Students give their details like name, roll no., course and id, pertaining to which they get their login and password. They are given a set of 10 modules which has to be completed in a tenure of 1 year. Online examination is held every 2 months. After completion of the course, they are offered a certificate and the students' login expires, thereafter the students are not allowed with the same login.

Draw a use case diagram. **[10]**

**Q.4)** Explain Decision Tree with the help of an example. **[10]**

**Q.5)** Draw a DFD for a College Library System where – **[10]**

- Students and Faculties are members.
- Books are issued and returned.
- Fine is charged on late return and loss of books.

**Q.6)** Write short notes : (**Any Three**) **[15]**

- (a) Role of Software Engineer
  - (b) FDD
  - (c) State Transition Diagram
  - (d) Water Fall Model
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-104**

**M. C. M. (Semester - I) Examination - 2010**

**PRINCIPLES AND PRACTICES OF MANAGEMENT**

**AND ORGANISATIONAL BEHAVIOUR**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

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

- Q.1)** (A) Define Organisational Behaviour. Discuss role of OB for Managers. [15]
- (B) Discuss F. W. Taylor's Contribution towards Management Thoughts. [10]
- Q.2)** How will you define Leadership as a Process of Influence ? What are its various features and styles ? [15]
- Q.3)** "The Line Manager's Orientation differs considerably from those of expert advisor." [15]
- Q.4)** What do you mean by team in an Organisation ? How does a team differ from a Group ? [15]
- Q.5)** Define Decision-making. Discuss Decision-making Process and different Techniques. [15]
- Q.6)** Define Management. Explain Managerial Functions and Managerial Skills. [15]

**Q.7) Short notes : (Any Three)**

**[15]**

- (a) TQM
  - (b) Types of Organisation Structures
  - (c) Line and Staff Managers
  - (d) Johari Window
  - (e) Henry Fayol's 14 Principles
-



Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-105**

**M. C. M. (Semester - I) Examination - 2010**

**WEB PROGRAMMING AND E-COMMERCE**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

- (1) Question No. 7 is compulsory.*
  - (2) Attempt **any five** from the remaining.*
  - (3) Figures to the right indicate full marks.*
  - (4) Draw neat diagrams wherever required.*
- 
- 

- Q.1)** What is E-commerce ? Explain its impact on Supply Value Chain. **[10]**
- Q.2)** What is Internet Protocol Suite ? Explain various protocols present in different layers of Internet Protocol Suite. **[10]**
- Q.3)** Explain Software Agents and their characteristics ? Also explain their role in E-commerce. **[10]**
- Q.4)** What is the need of a Website in Today's World for a Business Organisation ? Explain steps required to develop a Website. **[10]**
- Q.5)** Explain various Electronic Payment Methods in detail. **[10]**
- Q.6)** What is EDI ? Explain its advantages and disadvantages in detail. **[10]**

**Q.7) Write short notes : (Any Four)**

**[20]**

- (a) Domain Name Registration
  - (b) E-mail Marketing
  - (c) PCI - DSS
  - (d) Firewalls
  - (e) Mobile Computing
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 3

**[3777]-11**

**M. C. M. (Semester - I) Examination - 2010**

**‘C’ PROGRAMMING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Question No. 1 is compulsory.*
  - (2) *Solve **any five** out of the remaining.*
  - (3) *Figures to the right indicate full marks.*
- 

**Q.1) (A)** Trace output and justify answer. Assume suitable header files are included : **[12]**

- (a) `main( )`
- ```
{
    int a = -10, b = 0;
    printf("%d", a&&b?b -10?100:200:300);
}
```
- (b) `main( )`
- ```
{
    int p = 100, q = 200;
    int *c=&p, *d=&q;
    p++;
    *d = 500;
    printf("%d %d %d %d", p, q, *c, *d);
}
```
- (c) `main( )`
- ```
{
    int r, N[ ] = {1, 9, 2, 8, 3, 7, 4, 6, 5};
    for (r = 7; r>=2; r=2)
        printf("%d", N[r-1]);
}
```

```

(d)  main( )
      {  int x;
          for(x=2; x<=8; x++)
          {
              switch(x)
              {
                  case 2 : printf("A");
                          continue;
                  case 3 : break;
                  case 4 :
                  case 5 : printf("B");
                          break;
                  default : printf("C");
              }
          }
      }

```

(B) Explain the following : [08]

- (a) Loop Control Structures
- (b) Bitwise Operators

**Q.2)** Write 'C' program to accept a string and print alternate characters in the string starting from 3rd position. [10]

**Q.3)** Write a user defined function which will accept a string and a character and will return count of no. of occurrences of that character. [10]

**Q.4)** Write a program to accept  $3 \times 3$  matrix and print transpose of it. [10]

**Q.5)** Accept information of 50 students in an array of structure with fields rollno, name and marks. Print name of the student getting highest marks. [10]

**Q.6)** Write a program to copy contents of “abc.txt” to “xyz.txt”. **[10]**

**Q.7)** Print the following pattern : **[10]**

ABCD

ABC

AB

A

---

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-12**

**M. C. M. (Semester - I) Examination - 2010**

**DATABASE MANAGEMENT SYSTEM**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Question No. 1 is compulsory.*
- (2) *Solve **any five** questions from the remaining.*
- (3) *Figures to the right indicate full marks.*

---

---

**Q.1) (A)** Normalise the following data upto 3NF. **[12]**

book\_id, book\_name, author, purchase\_date, cost, member\_id,  
m\_name, address, phone, issue date, return date.

**(B)** Explain with suitable diagram : **[08]**

- (a) Mapping Cardinality
- (b) HDM

**Q.2)** What are Locks ? How locks are implemented in DBMS. **[10]**

**Q.3)** Explain various Implicit and Explicit Integrity Constraints. **[10]**

**Q.4)** Suggest and justify best recovery mechanism out of the available options. **[10]**

**Q.5)** Explain Codd's 12 Rules. **[10]**

**Q.6)** Discuss 'Software Modules in DBMS'. **[10]**

**Q.7) Write short notes : (Any Two)**

**[10]**

- (a) Data Warehouse
  - (b) Distributed Databases
  - (c) Cartesian Product
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-13**

**M. C. M. (Semester - I) Examination - 2010**

**SOFTWARE ENGINEERING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions***

*(1) Question Nos. 1 and 6 are compulsory.*

*(2) Solve **any three** from Q. Nos. 2, 3, 4 and 5.*

---

**Q.1)** British Library System maintains about 20,000 books of various subjects and authors. It also maintains CD's, periodicals. Members can issue one or two books at a time. Books are purchased from vendors. Fine is collected if book is not returned in a particular period of time :

- (a) Draw ERD for the above case. **[05]**
- (b) Design Tables. **[10]**
- (c) Design Fine Collection Form. **[05]**

**Q.2)** Draw a use case diagram for maintaining FD Account in a Bank. **[10]**

**Q.3)** Design a data entry screen for booking a room in a hotel. Assume suitable fields in the screen. Give validations that are required for booking. **[10]**

**Q.4)** Explain various phases of Software Development Life Cycle (SDLC). **[10]**



**Q.5)** Get Well Hospital wants to computerise its payroll operations for its employees. Attendance of the employee is sent by the time office, earnings and deductions are given by the Accounts Department. Each employee is given a payslip. Income-tax, PPF, Professional Tax details are sent to the Accounts Department.

Design a Payslip for the above case. **[10]**

**Q.6)** Write short notes : (**Any Four**) **[20]**

- (a) Good Coding Techniques
  - (b) Waterfall Model
  - (c) Role of System Analyst
  - (d) FDD
  - (e) Decision Trees
-

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

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

**[3777]-14**

**M. C. M. (Semester - I) Examination - 2010**

**MANAGEMENT INFORMATION SYSTEM (MIS)**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instruction :***

*All questions carry equal marks.*

- 
- 
- Q.1)** Define 'System'. Discuss any three 'System Characteristics' and explain as to why 'Feedback' and 'Control' are considered 'Key System Concepts'.
- Q.2)** Discuss various types of Systems (at least four) with suitable illustrations.
- Q.3)** Describe nature of planning and control necessary at strategic and operational levels of Management. Give examples.
- Q.4)** Define MIS. What sort of information is required at different levels of Management ? Explain with example.
- Q.5)** What is MIS ? Discuss characteristics of Information. Give suitable examples.
- Q.6)** What is Decision Support System ? Explain Process of Management Decision-making.
- Q.7)** Explain role and characteristics of MIS.

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

**[3777]-15**

**M. C. M. (Semester - I) Examination - 2010**

**BUSINESS COMMUNICATION**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 8 are compulsory.*
  - (2) Solve **any four** from the remaining.*
  - (3) Figures to the right indicate full marks.*
- 
- 

- Q.1)** What are the barriers of Business Communication ? How to deal with these barriers ? **[15]**
- Q.2)** Distinguish between Formal and Informal Communication. **[10]**
- Q.3)** Explain Do's and Don'ts of the Process of Interview. **[10]**
- Q.4)** What are the Communication Activities in Educational Institute ? **[10]**
- Q.5)** What is Non-verbal Communication ? Discuss functions of Non-verbal Communication. **[10]**
- Q.6)** Discuss "Listen to what is meant and not what is said". **[10]**
- Q.7)** Do you agree, "Group Discussion is a technique of involving, evolving and revolving" ? **[10]**

**Q.8) Write short notes : (Any Three)**

**[15]**

- (a) Video Conferencing
  - (b) Stress Management
  - (c) Listening Skills
  - (d) Meeting Management
  - (e) Eye Contact
-

Total No. of Questions : 9]

[Total No. of Printed Pages : 3

**[3777]-201**

**M. C. M. (Semester - II) Examination - 2010**

**DATA STRUCTURES AND ALGORITHMS**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 9 are compulsory.
- (2) Answer **any five** questions from the remaining.
- (3) State your assumptions clearly, if any.
- (4) Write appropriate structure definition wherever necessary.
- (5) Figures to the right indicate full marks.

---

---

**Q.1) (A)** Convert the following Infix Expression into Postfix. Show contents of stack at each step in tabular form : **[08]**

$((a + b) / c) * (d + (e - f) / g)$

**(B)** What is Hashing ? Explain any one Hashing Technique. **[04]**

**Q.2) (A)** Consider the following message :

“MANAGEMENT”

(a) Draw Huffman Tree for symbols of this message.

(b) What kind of tree is Huffman Tree ? **[05]**

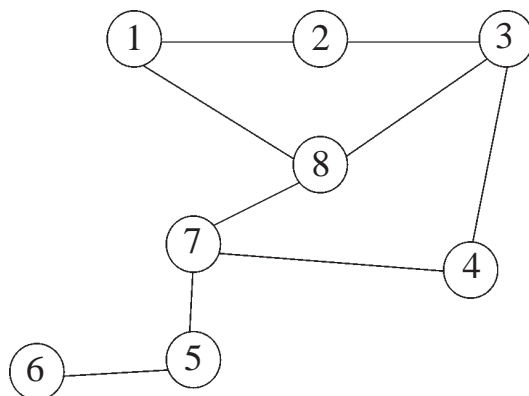
**(B)** Write a function that takes only a pointer to the root of a binary tree T and computes number of leaf nodes in T. **[05]**

**Q.3) (A)** Construct an AVL Tree for the following red, blue, green, orange, pink, black, white. **[05]**

**(B)** Write a function for the right rotation of a Binary Search Tree. **[05]**

- Q.4)** (A) Sort sequence 4, 8, 11, 6, 2, 1, 15, 26, 3 using insertion sort. (Ascending Order) [05]
- (B) For a character array defined as A[20] [20], if A[0] [0] is located at memory address 100, where element A[10] [1] is located in Column Major Representation and in Row Major Representation. [05]
- Q.5)** Write a function to insert a node in a linked list at the following position : [10]
- (a) at the beginning
- (b) at the end
- Q.6)** (A) Write a function for non-recursive in-order traversal of any Binary Search Tree using Stack. [05]
- (B) Write a function that Creates Copy of a Binary Tree. [05]
- Q.7)** (A) Write a function for printing data stored in a Linear Doubly Linked List of integer in the reverse order. [05]
- (B) Write a function for deleting a node from a circular queue of characters when this circular queue is implemented as a linked list. [05]
- Q.8)** (A) Write functions for PUSH and POP Operation on a Stack using Array. [05]
- (B) Write a function to search an element from integer array using Binary Search. [05]

**Q.9)** Answer using the following graph :



- (a) Generate Output of BFS Algorithm. [02]
  - (b) Generate output of DFS Algorithm, consider starting vertex is at 1 for both algorithms. [02]
  - (c) Write Adjacency Matrix. [02]
  - (d) Write Adjacency List. [02]
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-202**

**M. C. M. (Semester - II) Examination - 2010**  
**DATABASE MANAGEMENT SYSTEM (D.B.M.S.)**  
**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

- (1) *Question No. 1 is compulsory.*
- (2) *Solve **any 5** questions from the remaining.*
- (3) *Figures to the right indicate full marks.*

**Q.1) (A)** Normalise the following layout upto 3NF :

**[12]**

| <b><u>Service Call Report</u></b>           |                 |         |                |       |      |
|---------------------------------------------|-----------------|---------|----------------|-------|------|
| Customer Code : _____ Customer Name : _____ |                 |         |                |       |      |
| Customer Address : _____                    |                 |         |                |       |      |
| Date of Call : _____ Time : _____           |                 |         |                |       |      |
| Sr.<br>No.                                  | Machine<br>Name | Problem | Spares<br>Used | Qty.  | Amt. |
|                                             |                 |         |                |       |      |
|                                             |                 |         |                | Total |      |
| Service Charge : _____ Grand Total : _____  |                 |         |                |       |      |
| Customer Remarks : _____ Date : _____       |                 |         |                |       |      |
| Engineer Code and Name : _____              |                 |         |                |       |      |
| Customer Sign.                              |                 |         |                |       |      |



(B) Explain with example : [08]

(a) Properties of Transaction

(b) Union

**Q.2)** Explain Architecture of DBMS. [10]

**Q.3)** Explain Codd's 12 Rules. [10]

**Q.4)** Explain HDM in detail. How M : M relationship is shown in HDM ? [10]

**Q.5)** Discuss any two Concurrency Control Mechanisms. [10]

**Q.6)** Explain Distributed Databases with various Techniques of Data Distribution. [10]

**Q.7)** Write short notes : (Any Two) [10]

(a) Referential Integrity

(b) Data Mining

(c) Aggregation

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**Total No. of Questions : 3]**

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

**[3777]-203**

**M. C. M. (Semester - II) Examination - 2010**

**ORACLE**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instruction :***

*All questions are compulsory.*

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---

**Q.1) Consider the following tables :**

**[20]**

(1) Purchase-Order-Header :

(PoNo, PoDate, SupplierCode, TotalAmount)

(2) Purchase-Order-Detail :

(PoNo, ItemNo, ItemName, Qty, Rate)

Write SQL queries for the following : **(Any Ten)**

- (a) Create Purchase-Order-Detail table with appropriate constraints.
- (b) Add constraint Rate > 0.
- (c) Display Total Cost (Qty \* Rate) for every P.O.
- (d) Display PoDate formatted as Monday, 5th April, 2010.
- (e) Display all suppliers.
- (f) Display all items starting with letter 'P'.
- (g) Display PO's with amount greater than 5,000.
- (h) Display all details of Purchase Orders of last month.
- (i) Display Purchase Order Details in order of item name.
- (j) Display itemname having maximum quantity ordered.
- (k) Display PoNo, itemname, qty. for each P.O.
- (l) Display P.O. details of items with 7 characters in item name.

**Q.2) Write PL-SQL Block for the following : (Any Five) [25]**

- (a) Display top 5 records with highest total amount.
- (b) Accept a PoNo and display PoDate and supplier code.
- (c) Write a procedure to accept a PoNo as parameter from Poheader table. If PoNo is found then set total amt. = 500. Else raise an Exception to display “PoNo not Found”.
- (d) Write a function that accepts PoNo as parameter and returns true if total amount 74,000 otherwise return false.
- (e) While inserting a record in purchase order-detail table if qty is less than or equal to 0, triggers should be fired and message “qty C = 0, not allowed” should be displayed.
- (f) Accept PoNo from user and delete that record from Purchase-Order-Header.

**Q.3) Write short notes : (Any Five) [25]**

- (a) Types of Triggers
  - (b) Joins in SQL
  - (c) Sequence
  - (d) Datatypes in SQL
  - (e) Data Functions
  - (f) Syntax and Example of Create, Alter Command
  - (g) Commit, Rollback and Sevepoint
-

Total No. of Questions : 8]

[Total No. of Printed Pages : 3

**[3777]-204**

**M. C. M. (Semester - II) Examination - 2010**

**BASIC JAVA**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 8 are compulsory.
  - (2) Solve **any five** from the remaining.
- 

**Q.1) Solve the following :**

**[12]**

(a) Trace output :

```
byte x = 64, y;  
y = (byte) (x << z);  
system.out.print/n(y);
```

(b) What does following fragment display ?

```
string s = "six" + 3 + 3;  
system.out.print/n (s);
```

(c) Consider the following code :

```
calss A  
{  
    void method (int x)  
    {  
        system.out.print/n ("x =" + x);  
    }  
}
```

**[3777]-204**

**1**

**P.T.O.**

```

class B extends A
{
    void method (int y)
    {
        system.out.print/n("y =" + y);
    }
    void method (string s)
    {
        system.out.print/n ("s =" + s);
    }
    public static void main (string args [ ])
    {
        A a1 = new A( );
        A a2 = new B( );
        a1. method (10);
        a2. method (20);
    }
}

```

What will be output when executed ?

- (d) What will be output of following code :

class condition

```

{
    public static void main (string args [ ])
    {
        int x = 10;
        int y = 15;
        sytem.out.print/n ((x > y) ? 3.14 : 3);
    }
}

```

- Q.2)** Write a JAVA program to create following threads : **[10]**
- (a) Thread A printing cumulative sum of natural numbers
  - (b) Thread B printing alternative characters a, c, e .....
- Q.3)** Write a JAVA program to accept age of senior citizen from user, if age is < 60 throw “In valid age” excep. **[10]**
- Q.4)** Write a Java program to read contents of file, encrypt contents and display. **[10]**
- Q.5)** Write AWT program to display ball at the center of the window. When user presses arrow keys, ball should move in respective direction (left, right, up and down) **[10]**
- Q.6)** Write a book class with attributes bookno, title, author, book availability status. Write 3 constructors and a method to check availability of given book. **[10]**
- Q.7)** Write applet which will display 3 scrollbars and when scrollbar value is changed, set background colour accordingly. **[10]**
- Q.8)** Write short notes : **(Any Two)** **[08]**
- (a) Deamon Thread
  - (b) Abstract Class and Interfaces
  - (c) Overloading and Overriding
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 3

**[3777]-205**

**M. C. M. (Semester - II) Examination - 2010**

**CORE RUBY**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instruction :***

*Q. Nos. 1 and 7 are compulsory. Solve **any 4** from the rest.*

---

**Q.1) Find output of the following : (Any Five)**

**[15]**

(a) `x = 4 ** 3 ** 2`

`print x`

(b) `a = [7, 6, 5, 4]`

`a[4] = a[3] - 1`

`a.each do |elt|`

`print elt + 1`

`end`

(c) `def cal`

`a = 0`

`“#{a = a + 1}” * 3`

`end`

`puts cal`

- (d) `s = "hello"`  
`x = s[2 .. 3]`  
`y = s[-3 .. -1]`  
`z = s[0 .. 0]`  
`puts x, y, z`
- (e) `a = [1, 1, 2, 2, 3, 3, 4]`  
`b = [5, 5, 4, 4, 3, 3, 2]`  
`puts a | b`  
`puts b | a`  
`puts a & b`  
`puts b & a`
- (f) `r = 'a' .. 'e'`  
`r.step(2) { | x | print "[#{x}]" }`
- (g) `letters = 'aAbBcCdDeE'`  
`puts letters.swapcase`  
`puts letters.capitalize`

**Q.2)** Write a Ruby program to print first N Fibonacci Series. Accept the value of N from user. **[10]**

**Q.3)** Write a Ruby program to print the following pattern : **[10]**

```

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

```

**Q.4)** Write a Ruby program that accepts a string of characters and prints distinct character with number of occurrences. **[10]**



**Q.5)** Write a class Rectangle having two instance variables length and breadth and two methods area and perimeter. It accept values from the user and prints area perimeter of the Rectangle. **[10]**

**Q.6)** Write a program that reads data from one file and write that data in another file in reverse order. **[10]**

**Q.7)** Write short notes : **(Any Three)** **[15]**

- (a) Symbols
  - (b) Exception Handling
  - (c) Unit Testing
  - (d) Hash Class
  - (e) Ranges in Ruby
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-206**

**M. C. M. (Semester - II) Examination - 2010**

**OBJECT ORIENTED DESIGNING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

- (1) *Question No. 1 is compulsory.*
  - (2) *Solve **any five** from remaining questions.*
- 

**Q.1) (A)** University conducts syllabus revision every 3 years for the MCM course. A Core Committee is formed to co-ordinate activities and Online System is designed to track activities. Core Committee decides the Chairman for every subject and intimation is sent to them and to the Director's of their institute by e-mail. Chairman, Core Committee Members and Faculty Members have to register with the Online System. The syllabus consists of various semesters and various subjects are included in every semester.

The Chairman uploads guidelines of his subject and faculty members (approved) login to give their suggestions. The Chairman and 2 other selected Faculty Members then frame syllabus of that subject and upload the same for further suggestions. After 10 days the syllabus is fixed after incorporating valid suggestions. Core Committee approves syllabus and administrator uploads final syllabus, which can be viewed by all.

Draw use case diagram and class diagram for the above syllabus revision tracking system.

**[15]**

**(B)** Explain various Class Relationships.

**[05]**

- Q.2)** Draw activity diagram for a Travel Agency Tour Booking System with the following Key Processes : **[10]**
- (a) Registration of Customers
  - (b) Upload Tour Package Details
  - (c) Customers Login and Search for Tour Details
  - (d) Booking
  - (e) Tour Cancellation
- Q.3)** Draw state transition diagram for Traffic Signal System. **[10]**
- Q.4)** Explain various phases of RUP in detail. **[10]**
- Q.5)** (A) Discuss Booch Method. **[05]**  
(B) Explain CRC Approach. **[05]**
- Q.6)** Draw sequence diagrams for the following scenarios : **[10]**
- (a) Create an E-mail Account
  - (b) Checking E-mail
- Q.7)** Write short notes : **(Any Two)** **[10]**
- (a) Design Pattern
  - (b) Test Plan Guidelines
  - (c) Multilayered Architecture
-

Total No. of Questions : 9]

[Total No. of Printed Pages : 3

**[3777]-21**

**M. C. M. (Semester - II) Examination - 2010**

**DATA STRUCTURES AND ALGORITHMS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 9 are compulsory.
  - (2) Answer **any five** from the remaining.
  - (3) Figures to the right indicate full marks.
  - (4) State your assumptions clearly.
  - (5) Write appropriate structure definitions wherever necessary.
- 

**Q.1) (A)** Evaluate the following prefix form :

$- + AB - * C + DE$

where

$A = 14, B = 3, C = 2, D = 5, E = 6, F = 7$

Show contents of stack at each step in a tabular form. **[08]**

(B) Write a note on Space - Time Complexity. **[04]**

**Q.2) (A)** Consider the following message : **[05]**

“Department”

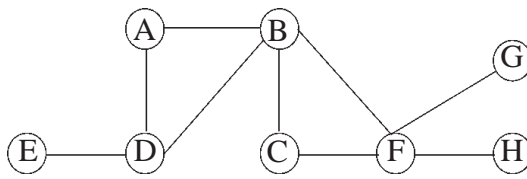
(a) Draw a Huffman Tree for the message.

(b) What kind of tree is Huffman Tree.

(B) Write a function for non-recursive pre-order traversal of any Binary Search Tree using stack. **[05]**

- Q.3)** (A) Construct an AVL Tree for the following data : **[05]**  
 MON, SUN, THU, FRI, SAT, WED, TUE
- (B) Write a function to push and pop elements from stack using array. **[05]**
- Q.4)** (A) Write a function for sorting a 1-D array of integers in ascending order using Bubble Sort. **[05]**
- (B) Consider the following declaration : **[05]**  
 int A[10] [10];  
 Compute row major and column major address of the member A[a] [5], where base address of array is 300.
- Q.5)** (A) Write a function to merge two linked lists. **[05]**
- (B) Write a function to count nodes containing even data values in a linear linked list. **[05]**
- Q.6)** (A) Write a function to list nodes of a Binary Tree in the following way :  
 List root, then nodes at depth 1, followed by nodes at depth 2 and so on. **[05]**
- (B) Write a function for Right Rotation of Binary Search Tree. **[05]**
- Q.7)** (A) Write a function for deleting node in a Single Linear Link List. **[05]**
- (B) Write a function to count number of nodes in a Doubly Linked List. **[05]**
- Q.8)** (A) Write a function to search a given element in an array using Binary Search Method. **[05]**
- (B) Write a function for MIDSQUARING Hashing Function for a Computer System that supports 32 bit key values. **[05]**

**Q.9)** Answer using the following graph :



- (a) Generate output of Breadth First Search (BFS) Algorithm for the above graph when starting vertex is A. **[02]**
  - (b) Generate output of Depth First Search (DFS) Algorithm for the above graph when starting vertex is A. **[02]**
  - (c) Write Adjacency Matrix. **[02]**
  - (d) Write Adjacency List. **[02]**
-

Total No. of Questions : 5]

[Total No. of Printed Pages : 3

**[3777]-22**

**M. C. M. (Semester - II) Examination - 2010**

**VISUAL BASIC**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instruction :***

*All questions are compulsory.*

---

---

**Q.1) Give output along with explanation : (Any Five)**

**[20]**

- (a) Dim d1, d2 as Date  
d1 = Date  
d2 = #08/03/2010#  
print DateDiff("y", d1, d2)  
print DateDiff("m", d1, d2)
- (b) for i = 16 to 10 step -1  
next i  
print i
- (c) dim x as variant  
dim y as double  
print TypeName(x)  
print VarType(y)
- (d) dim S1 as string, S2 as string  
S1 = 'Hello World'  
S2 = left (strreverse (S1), 5)  
print S2

```

(e)  dim i as Integer
      for i = 65 to 80
          If i mod 5 = 0, then
              print ASC(i)
          End If
      Next i

(f)  dim num as integer
      num = 56
      select case num
          case 52, 51, 58 – 60
              print “Hello”
          case 55, 38, 70
              print “MCM”
          case IS > 55
              print “Pune University”
      end select

```

**Q.2)** Write ADO code for the following table Bank\_Account :

**[10]**

| Field Name | Type     |
|------------|----------|
| ACC_id     | Number   |
| ACC_name   | Text     |
| ACC_Type   | Text     |
| Balance    | Currency |

Perform operations Add, Update, Delete

View - First, Next, Last, Previous



**Q.3)** Write a sectional code for the following : **(Any Three)** **[15]**

- (a) Create a menu having options : Circle, Rectangle, Ellipse. Write a code to display respective shapes.
- (b) Write a sectional code to delete selected item from a list box.
- (c) Invoke a colour dialog box and give colour to the text box.
- (d) Write a function to display whether the given number is prime or not.

**Q.4)** Define user defined Data type Book Master having data members Book\_id, Book\_name, Total\_copies, Author\_name. Design an interface and write a code which will accept book information from the user and will store it in text file as a record. Provide facility to see first, last, next and previous record. [Use Random Access File.] **[10]**

**Q.5)** Write short notes : **(Any Three)** **[15]**

- (a) Mathematical Functions with examples
  - (b) Tree View Control
  - (c) Cursor types in ADO
  - (d) Data types in VB
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-23**

**M. C. M. (Semester - II) Examination - 2010**

**ORACLE**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

(1) Question Nos. 1 and 6 are compulsory.

(2) Solve **any 3** from the remaining.

---

---

**Q.1)** Consider the following tables :

(a) Policy-holder (PolicyNo, Polciyholdernm, Policy\_Desc,  
Polcy\_Yrs. No. of Premium, Premium\_type)

Premium-type = 'Y' = Yearly, 'H' = Half Yearly,

'Q' = Quarterly, 'M' = Monthly

(b) Premium (PolicyNo, Premium\_Paid\_Dt, Premium\_Amt,  
Premium\_Paid\_Status)

Status = 'P' = Paid, 'U' = Unpaid

Solve the following : **(Any Ten)**

**[10x2=20]**

- (1) Insert two records in each table.
- (2) Set premium type as 'O' (one time) for all yearly records.
- (3) Give insert and update privileges to the above tables.
- (4) Create new user as 'Insurance'.
- (5) Display all records, whose premium is paid between 02 April, 2010 and 30 April, 2010.
- (6) Remove all records for which premium is paid.

**[3777]-23**

**1**

**P.T.O.**

- (7) Display user id of current user.
- (8) Display all policyholder details with names ending with 'Y'.
- (9) Display all distinct policies from premium table.
- (10) Count premium paid policies.
- (11) Print policyholder details, who pay maximum premium amount and whose premium is 'Quarterly'.

**Q.2)** Explain parametric cursor. Write explicit cursor as an example for any of the above tables. **[10]**

**Q.3)** Write a PL/SQL to display 5 highest paying records. **[10]**

**Q.4)** Write PL/SQL block which will raise suitable exception, if cursor is re-opened. **[10]**

**Q.5)** Write any suitable example for procedure in Oracle. **[10]**

**Q.6)** Short notes : (Any Four) **[4x5=20]**

- (a) Types of Triggers
  - (b) Date Functions
  - (c) CLOB, BLOB, BFILE
  - (d) Equi Join
  - (e) Rownum and user functions
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-24**

**M. C. M. (Semester - II) Examination - 2010**

**SOFTWARE PROJECT MANAGEMENT AND IT MANAGEMENT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Q. No. 1 is compulsory.
  - (2) Attempt **any 5** from the remaining questions.
  - (3) Neat diagrams carry marks.
  - (4) State assumptions made, if any.
  - (5) Q. No. 1 carries **20 marks**. Remaining questions carry **10 marks** each.
- 
- 

**Q.1) (A)** A small project is composed of 7 activities whose time estimates are listed in the table below. Activities are identified by their beginning (i) and ending (j) node numbers.

| Activity<br>(i-j) | Estimated Duration (in weeks) |             |             |
|-------------------|-------------------------------|-------------|-------------|
|                   | Optimistic                    | Most Likely | Pessimistic |
| 1-2               | 1                             | 1           | 7           |
| 1-3               | 1                             | 4           | 7           |
| 1-4               | 2                             | 2           | 8           |
| 2-5               | 1                             | 1           | 1           |
| 3-5               | 2                             | 51          | 14          |
| 4-6               | 2                             | 5           | 8           |
| 5-6               | 3                             | 6           | 15          |

(a) Draw the Project Network.

(b) Find the Critical Path.

**[10]**

(B) Explain the COCOMO Model in detail with example. Give its advantages.

**[10]**

**[3777]-24**

**1**

**P.T.O.**

- Q.2)** (A) Describe Concept of User Accepting Testing. [05]  
(B) Describe Concept of Software Project Management. [05]
- Q.3)** What is Risk Management ? Explain Risk Management in detail. [10]
- Q.4)** Describe various Software Project Time Estimation Tools, with suitable illustration. [10]
- Q.5)** Explain Software Project Management under various umbrella activities of it. [10]
- Q.6)** What do you understand by IT Operation Management ? Explain in details role and responsibility in IT Operation. [10]
- Q.7)** Write short notes : (**Any Two**) [10]
- (a) CMM Model
  - (b) Software Testing
  - (c) Function Point Analysis
  - (d) Software Reviews
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-25**

**M. C. M. (Semester - II) Examination - 2010**

**BUSINESS APPLICATION**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Question No. 1 is compulsory. Attempt **any five** from Q. Nos. 2 to 7.*
  - (2) *State your assumptions clearly.*
  - (3) *Figures to the right indicate full marks.*
- 

**Q.1)** Resilient Solutions Pvt. Ltd. is planning to recruit freshers for the post of Systems Engineer with educational background of MCA/MCM/BE and strong conceptual knowledge of Ruby, ASP.NET and PHP. The recruiter has requested to post in CVS for the off-campus drive. For the on-campus drive, the recruiter schedules visit dates for Written Test, Personal Interview and Group Discussion with the concerned placement co-ordinator of the Institute.

The recruiting organisation has a rigorous process of selection. The selected candidates will then be placed on probation with appropriate offer letters.

You are requested to :

**[20]**

- (a) Elaborate scope of the case by drawing CLD and ERD.
- (b) Identify database requirement by designing suitable files.

**Q.2)** What benefits can small-scale enterprises derive by installing an effective system of Production Planning and Control ? Discuss with elements of PPC in brief.

**[10]**

**[3777]-25**

**1**

**P.T.O.**

- Q.3)** Describe Material Procurement Process in detail with any three important reports. [10]
- Q.4)** Explain various steps in an Employee Appraisal System. [10]
- Q.5)** Describe Process of Invoicing with the help of a proper Invoice Format. [10]
- Q.6)** Why Ratio Analysis plays an important role in Business Strategic Planning ? What are the limitations of Ratio Analysis ? [10]
- Q.7)** Write short notes : **(Any Two)** [10]
- (a) Sales Budgeting
  - (b) MRP
  - (c) Types of Leaves
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-301**

**M. C. M. (Semester - III) Examination - 2010**

**LINUX PROGRAMMING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions.***

*(1) Q. Nos. 1 and 7 are compulsory.*

*(2) Solve **any three** from remaining.*

---

**Q.1) (A)** Write PHP Script which accepts username and password and validate it with user table of PROJECT database. If username and password is OK then display 'OK' message. **[10]**

**(B)** Explain settings in apache configuration file httpd.conf. **[10]**

**Q.2)** Explain Services in Linux. How Services are selected for startup in Linux ? **[10]**

**Q.3)** Write MySQL Commands for : **[10]**

**(a)** Display all tables from Database PROJECT.

**(b)** Create table user with proper fields.

**(c)** Backup entire database PROJECT.

**(d)** Create user MCM and assign rights to access PROJECT database.

**(e)** List all users from user table whose name starts with 'K'.



**Q.4)** Explain following Linux Commands with example : **[2x5=10]**

- (a) init
- (b) mount
- (c) cpio
- (d) renice
- (e) less
- (f) mkfs

**Q.5)** Explain authentication types in Apache. **[10]**

**Q.6)** Explain Object Oriented PHP with example. **[10]**

**Q.7)** Write short notes : **(Any Four)** **[4x5=20]**

- (a) User Space
  - (b) Run Levels in Linux
  - (c) Array Operations in PHP
  - (d) Session Variables in PHP
  - (e) Data Types in MySQL
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-302**

**M. C. M. (Semester - III) Examination - 2010**

**BUSINESS APPLICATION**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

- (1) Question No. 1 is compulsory. Attempt **any five** from Q. Nos. 2 to 7.*
  - (2) State your assumptions clearly.*
  - (3) Figures to the right indicate full marks.*
- 
- 

**Q.1)** Edwell Pvt. Ltd. has a Training Department. The department has a committee to conduct training throughout the organisation, with particular emphasis on providing quality customer service. The committee appoints both external and internal trainers for the training program. The primary criteria used for selection of trainers are strong technical competencies and good presentation skills. The committee prepares a training calendar which has all scheduled dates for a financial year. The trainers are then intimated by mailers. The venue with appropriate lecture halls is then booked according to the calendar. The training program is scheduled as per the calendar and attendance is recorded for both trainer and trainee. At the end of the program test is conducted and results are declared. Feedback from trainers and trainees are recorded.

You are required to :

- (a) Elaborate scope of the Case by drawing CLD and FDD.
- (b) Identify database requirements by designing suitable files. **[20]**

- Q.2)** Explain the below mentioned production planning and control activities with appropriate examples : **[10]**
- (a) Dispatching
  - (b) Loading
  - (c) Routing
  - (d) Scheduling
- Q.3)** What is Ratio Analysis ? Describe how the Financial Ratio Analysis supports Management to make decisions. **[10]**
- Q.4)** What is BOM ? Describe BOM processing with product configuration. **[10]**
- Q.5)** Explain in detail the Stock Accounting and Control Process. **[10]**
- Q.6)** Explain Sales Order Processing System with any three important report layouts. Also, describe advantages of Sales Analysis **[10]**
- Q.7)** Write short notes : **(Any Two)** **[10]**
- (a) Day Books to Record Financial Transactions
  - (b) Leave Accounting
  - (c) Types of Purchases
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-303**

**M. C. M. (Semester - III) Examination - 2010**

**ADVANCED JAVA**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

- (1) *Question No. 1 is compulsory.*
  - (2) *Solve **any four** from the remaining.*
- 

**Q.1)** Answer the following : **[10]**

- (a) What is Request Despatcher ?
- (b) How to instantiate InetAddress Class ?
- (c) What is ResultSetMetadata ? List its any two methods.
- (d) What are page directives in JSP ?
- (e) Why Remote Interface is used in RMI ?

**Q.2)** Create a bean that will calculate Simple Interest. Use bean in JSP program. Accept details of saving like principal amount, rate of interest, period-in years from user and display amount, user will get after the given number of years. **[15]**

**Q.3)** Write Client - Server Networking Program to accept string from user pass to server. Server will send respond whether the sting is palindrome or not. **[15]**

**Q.4)** Write servlet code for accepting two numbers from user display addition and multiplication of the numbers. If error occurs, then call JSP error page to display appropriate error message. **[15]**

**Q.5)** Write a JDBC application to insert, update and delete record from Company Shareholder's Table. Given the structure : **SHAREHOLDER :** hoder\_id, Hname, Address, NoofShares, ShareSrFrom (Share Serial from Number), ShareSrTo (Share Serial upto Number), facevalue, cost. **[15]**

**Q.6)** Write notes : (Any Three) **[15]**

- (a) RMI Architecture
  - (b) JSTL
  - (c) Struts
  - (d) JNDI
-

**Total No. of Questions : 1]**

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

**[3777]-304**

**M. C. M. (Semester - III) Examination - 2010**

**ADVANCED RUBY**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

---

**Q.1) (A) Write short notes : (Any Five)**

**[30]**

- (a) MVC Architecture in Rails
- (b) Sessions and Cookies
- (c) Authentication and Authorisation in Ruby on Rails
- (d) Ruby toolkit with examples of Widgets
- (e) Socket Programming
- (f) Logger Class with all its constants
- (g) Database.yml

**(B) Solve the following : (Any Five)**

**[40]**

- (a) Write migration for creating table 'Student' in database having rollno, name, created\_at, updated\_at columns.
- (b) Write authentication method in student model which will accept roll no. and name as parameters. If student with provided roll no. and name is present in database then return student object and if student is not present then return nil.
- (c) Create a TK window that has 2 radio buttons 'RUBY' and 'JAVA', a label and a button 'Select'. The label should change its caption to 'Selected RUBY' if radio button 'RUBY' is selected and 'Selected JAVA' if radio button 'JAVA' is selected.

- (d) Using Ruby Socket API, write a client that passes a string 'Study' to the server and server responds by appending 'Hard' and sending 'StudyHard' string to the client.
  - (e) Write a SOAP server and SOAP client such that server defines a method that accepts a number as a parameter and returns its square. Client invokes this method and prints square returned by the server.
  - (f) Create a Ruby TK Login window having username, password labels and texts and a login button. If username and password matches then display 'Login Successful' in a label, otherwise display 'Login Insuccesful'.
-

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

**[3777]-305**

**M. C. M. (Semester - III) Examination - 2010**

**VB.NET**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

- (1) *Question No. 1 is compulsory.*
- (2) *Solve **any five** from Q. Nos. 2 to 8.*
- (3) *Make your own assumptions if required.*

---

**Q.1)** Explain .NET Framework. **[10]**

**Q.2)** What is Exception Handling ? Explain with example. **[12]**

**Q.3)** What is user defined event and how it is handled ? **[12]**

**Q.4)** Write function for the following : **[6+6=12]**

- (a) To accept principal amt, rate of interest and year and return interest amount for the quarter.
- (b) To accept an array and a number and return an array of numbers divisible by the given number.

**Q.5)** Design interface and write code for the following : **[6+6=12]**

- (a) Colour Mixer using three scrollbars for red, green and blue colours.
- (b) Take two label boxes. Place the 1st label box near the left edge of the form and the 2nd to the right. Move the label boxes towards the center of the form. They should stop when they touch each other. The caption for the 1st label 'Best of' and 2nd is 'Luck'. (using timer control)

**Q.6)** Write sectional code to add, delete, update records of emp table(empno, name, salary). (Make your assumptions) Use connected architecture. **[12]**



**Q.7)** Explain the following controls :

**[4x3=12]**

- (a) DateTimePicker
- (b) CheckedListBox
- (c) ToolTip
- (d) Linklabel

**Q.8)** Write short notes : (Any Two)

**[6+6=12]**

- (a) Abstract Class
  - (b) Name Spaces
  - (c) Overloading and Overriding
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-306**

**M. C. M. (Semester - III) Examination - 2010**

**SOFTWARE PROJECT MANAGEMENT AND IT MANAGEMENT**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Notes :**

- (1) *Question No. 1 is compulsory.*
- (2) *Attempt **any five** from the remaining.*
- (3) *Neat diagrams carry marks.*
- (4) *State assumptions made, if any.*
- (5) *Question No. 1 carries **20 marks**. Remaining questions carry **10 marks** each.*

---

**Q.1) (A)** Draw a PERT diagram from the given information. Find start time, end time, slack. Give critical path calculation. **[10]**

| Activity | Predecessor | Duration in Weeks |
|----------|-------------|-------------------|
| A        | —           | 5                 |
| B        | —           | 7                 |
| C        | A           | 6                 |
| D        | B           | 5                 |
| E        | B           | 4                 |
| F        | D, E        | 8                 |
| G        | C, F        | 8                 |
| H        | D           | 6                 |
| I        | G, H        | 3                 |

**(B)** Explain tasks of Software Configuration Management. **[10]**

- Q.2)** What is Risk Management ? Explain Risk Management in detail. [10]
- Q.3)** What do you understand by SQA ? Describe major activities necessary for effective SQA. [10]
- Q.4)** Explain COCOMO Model in detail with example. Give its advantages. [10]
- Q.5)** Explain Software Project Management under its various Umbrella Activities. [10]
- Q.6)** What do you understand by IT Operation Management ? Explain in detail role and responsibility in IT Operation. [10]
- Q.7)** Write short notes : (**Any Two**) [10]
- (a) CMM Model
  - (b) Software Testing
  - (c) Software Maintenance
  - (d) Software Reviews
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 3

**[3777]-31**

**M. C. M. (Semester - III) Examination - 2010**

**OBJECT ORIENTED CONCEPTS AND BASIC JAVA**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Question No. 1 is compulsory.*
  - (2) *Solve **any four** from the remaining.*
- 

**Q.1) Justify your answer :**

**[14]**

(a) Select true statements :

- (i) Interface hierarchy can be created.
- (ii) Interface can have instance variables.
- (iii) Interface can have only abstract methods.
- (iv) Interface can extend object class.

(b) Public class ABC {

Public static void main (string args[ ])

{

int i = 15, j = 210;

if ((i = 100) && (i > j))

System.out.print\n("HI");

System.out.print\n("BYE BYE");

}

}

```

(c)  Public class PP {
      Public static void main(string args[ ])
      {   int i = 10; i = 15;
for (int k = 1; k < i + j ; k + = 4)
      {
          switch (k)
          {
case 1 : System.out.print\n("MCM"); break;
default : k + 3;
case 5 :
case 8 :
case 10 : System.out.print\n("is Best"); break;
case 16 : System.out.print\n("OK");
System.out.print\n("k =" + k);
}      // switch
}      // for
}      // main
}      // class

```

(d) Select correct answers :

- (i) Constructors can be private.
- (ii) Constructors can access non-static members.
- (iii) Constructors can return value.
- (iv) All classes must define constructors.
- (v) Constructors must initialize all instance variables of class.

- Q.2)** Write an awt application which will have 3 scrollbars and a text field. Change background colour of the text field when scrollbars are scrolled. [14]
- Q.3)** Write a threaded application which will change caption of the button after every second. Initially caption of the button is “1”. [14]
- Q.4)** Write a application which will accept a number from command line. If the given number is not a prime number, then throw “Not Prime Number” user defined exception. [14]
- Q.5)** Write an application which will accept a file name using command line. Then show no. of lines present in that file. Handle exceptions. [14]
- Q.6)** Write patient class with patient\_no, name, total\_no\_of\_days\_in\_hospital, as instance variable and room\_charges as class variable with 1,000 as value getBill() as abstract method. Create two sub-classes of patient as one cancer patient, second accident case. Cancer patient will have medical charges Rs. 2,000 per day and accident case patient will have Rs. 500 per day charges. Write constructor. Create objects of above two classes and call getBill() method and print bill for each object.
- Q.7)** Write short notes : (Any Two) [14]
- (a) JVM
  - (b) Layout Manager
  - (c) Serialization of Object
-

Total No. of Questions : 10]

[Total No. of Printed Pages : 2

**[3777]-32**

**M. C. M. (Semester - III) Examination - 2010**

**INTERNET TECHNOLOGY**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instruction :**

*Solve **any 7** questions. All questions carry equal marks.*

---

**Q.1)** What is E-commerce ? Explain benefits of E-commerce. How you handle Money on Net ?

**Q.2)** Explain methods, properties of any three built in objects of Java Script.

**Q.3)** What is DHTML ? Write code to change background colour after every 1 minute. Stop it when stop button is clicked.

**Q.4)** Explain various types of Style Sheets.

**Q.5)** What is Cookies Collection ? What are different types of Cookies ? How you can create, read and destroy a Cookie ? Explain with examples.

**Q.6)** Explain various methods, collections and properties of Request and Response Object.

**Q.7)** Explain use and importance of global.asa with example.

**Q.8)** Accept Dept Code from drop downs list :

Display all employees of that department when Display Button is clicked in table format.

Database - Payroll.mdb

Table - emp(empno, name, salary, deptcode)

**Q.9)** Explain any two with examples :

(a) XSLT

(b) CSS

(c) XML Parsers Viz SAX and DOM

**Q.10)** Write XML and internal DTD to save movies information.

Movies - Movie (name, producers, actors, writers, remark)

---



Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-33**

**M. C. M. (Semester - III) Examination - 2010**

**NETWORK TECHNOLOGY**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

- (1) Question Nos. 1 and 7 are compulsory.*
- (2) Solve **any three** from the remaining.*
- (3) Draw neat diagram wherever necessary.*

- 
- 
- Q.1)** (A) Explain steps for installation of Linux in Graphical Mode. [10]  
(B) What is Active Directory in Windows 2003 Server ? How do you implement Active Directory ? [10]
- Q.2)** Explain User Management Commands in Linux. (any five) [10]
- Q.3)** Explain procedure to configure DHCP Server in Windows 2003 Server. [10]
- Q.4)** Explain features of IIS 6.0 and write steps for implementing web server with IIS 6.0 in Windows 2003 Server. [10]
- Q.5)** Explain Network Management Commands in Linux. (any five) [10]
- Q.6)** Explain Software Update Service for Windows 2003 Server. [10]

**Q.7) Write short notes : (Any Four)**

**[4x5=20]**

- (a) Wireless Networks
  - (b) FTP
  - (c) Terminal Service
  - (d) Compare IPv4 Vs IPv6
  - (e) Modems
  - (f) Peer to Peer Networks
-

**Total No. of Questions : 10]**

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

**[3777]-34**

**M. C. M. (Semester - III) Examination - 2010**

**INFORMATION SYSTEM AUDIT**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

*(1) Solve **any seven** questions.*

*(2) All questions carry equal marks.*

---

**Q.1)** Explain need for Control and Audit of Computer System.

**Q.2)** Explain Audit Procedure with its flowchart in Audit.

**Q.3)** Explain ISACA Code of Professional Ethics.

**Q.4)** Explain how functions of Top Management are evaluated.

**Q.5)** Explain how Data Resources Management is audited ?

**Q.6)** What is DRP ? How is it audited ?

**Q.7)** What is Boundary Control ? How is it audited ?

**Q.8)** How Networks are audited ?

**Q.9)** Explain CAAT with its advantages.

**Q.10)** Write short notes : **(Any Two)**

(a) EDI

(b) IT Crimes

(c) Role of DBA

Total No. of Questions : 7]

[Total No. of Printed Pages : 1

**[3777]-35**

**M. C. M. (Semester - III) Examination - 2010**  
**PRINCIPLES AND PRACTICES OF MANAGEMENT**  
**AND ORGANISATIONAL BEHAVIOUR**  
**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

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

- 
- 
- Q.1)** (A) Define Management. Discuss different Levels of Management. [15]  
(B) Define Motivation. Explain Maslow's Model. [10]
- Q.2)** Discuss Contributions of Taylor and Henry Fayol in Management. [15]
- Q.3)** Define Decision-making. Explain different types of Decisions. [15]
- Q.4)** Define Organisation. Discuss in detail different organisational structures. [15]
- Q.5)** Define Leadership and its features. Explain different Leadership Styles. [15]
- Q.6)** What is Organisational Behaviour ? Why it is important in the Organisation ? [15]
- Q.7)** Write short notes : (**Any Three**) [15]
- (a) Decision-making Styles
  - (b) Johari Window
  - (c) Transactional Analysis
  - (d) Theory X, Y, Z
  - (e) Team Building

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-401**

**M. C. M. (Semester - IV) Examination - 2010**

**MOBILE COMPUTING (ELECTIVE)**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Notes :*

*(1) Question Nos. 1 and 7 are compulsory.*

*(2) Attempt **any three** from the remaining (Q. 2 to Q. 6).*

---

**Q.1) (A) Define the following terms : (Any Five) [10]**

(a) MSC

(b) BSS

(c) SIM

(d) IMEI

(e) VLR

(f) DCF

(B) Explain authentication, key generation and encryption in GSM Network. [10]

**Q.2) What are the various issues to be considered in Wireless LAN Design ? Explain. [10]**

**Q.3) How DHCP can be used for Mobility Management ? Explain. [10]**

**Q.4) What is Hidden Node Problem ? How it is resolved ? [10]**

**Q.5) Define MANET. Explain design issues and characteristics of MANET. [10]**

**Q.6) Differentiate between TDMA and CDMA. [10]**

**Q.7)** Write short notes : (**Any Four**)

**[20]**

- (a) Slotted ALOHA
  - (b) Hyper LAN
  - (c) Application of Blue-tooth
  - (d) BS-hand off
  - (e) Indirect - TCP
  - (f) GEO
-

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

**[3777]-402**

**M. C. M. (Semester - IV) Examination - 2010**

**ASP.NET**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

(1) Q. Nos. 1 and 8 are compulsory.

(2) Solve *any four* from the remaining.

---

---

**Q.1) Design GUI and write code for the following : [15]**

- (a) Add new record
- (b) Delete a record
- (c) Edit a record
- (d) Use gridview to display records
- (e) Use disconnected architecture
- (f) Name of Database : Company
- (g) Name of Table : Employee(EmpNo, EmpName, DOB, Salary)
- (h) Back End : SQL Server
- (i) Server Name : UOP

**Q.2) State with example Server Side State Management Techniques in ASP.Net. [10]**

**Q.3) Create a web.sitemap file. Explain it. And use it by making use of Tree View and Sitemap Path Control. Draw proper GUI. [10]**

**Q.4) Design a GUI for login page using label, textboxes and button control. Display welcome page for successful login else display error page. Make use of database to validate user login. [10]**

- Q.5)** Explain Range Validator Control and Custom Validator Control. [10]
- Q.6)** Create a theme for your website having themes for Textboxes, Labels, Dropdown List and Gridview. Apply this theme to your web pages using web.config file. Make your own assumption to create a theme. [10]
- Q.7)** Explain important properties and methods with example for the following Web Server Controls : [10]
- (a) Radio Button List Control
  - (b) AdRotator Control
  - (c) Login Control
  - (d) Dropdown List Control
- Q.8)** Write short notes : (Any Three) [15]
- (a) Advantages of ASP.NET
  - (b) Image Map Control
  - (c) ADO.Net Object Model
  - (d) Web Services
-



Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-403**

**M. C. M. (Semester - IV) Examination - 2010**

**INFORMATION SECURITY**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Solve **any one** case from Q. 1.
- (2) Assume suitable data, if necessary.
- (3) Solve **any three** from Q. 2 to Q. 5 and Q. 6 is compulsory.

---

**Q.1)** You are manager of the Internal Audit of LBI Bank that has decided to install a bill payment by telephone system for its customers. The system will allow customers to telephone a number to enter the system or mobile number, record bill payment transactions they wish to make within the 15 days, and transfer funds between saving and checking accounts. A voice feedback system will instruct customers on how to complete each step of a transaction; for example, record date of a payment and the amount to be paid. Note, all data is to entered using a Touch-Tone Telephone.

You as a Manager of the Information Systems Department have been asked to advise on the access controls you think should exist in the system. Also give and prepare a report on overall security aspects that exist in this.

‘Green IT Ltd.’ wants set policy for their Software Development Unit. They are developing various system softwares for various organisations. Their employees are working at various locations and countries of the world.

You as Software Professional of that Organisation do the following :

- (a) How organisation manages security of their Information Systems ?
- (b) What are the different security considerations for the mobile work force ?
- (c) What type of firewalls they need to use for security purpose ? **[20]**

**[3777]-403**

**1**

**P.T.O.**

- Q.2)** Explain Security Models and Frameworks. [10]
- Q.3)** Explain different Cryptographic Techniques. [10]
- Q.4)** “A Physical Security and Biometric Control protects Information System Assets.” Comment. [10]
- Q.5)** Wired OR Wireless Network is Secured. Comment. [10]
- Q.6)** Short notes : (**Any Four**) [10]
- (a) COBIT
  - (b) Encryption
  - (c) Internet and Security
  - (d) Intellectual Property Right
  - (e) CMM and Quality
  - (f) Sarbanes - Oxley Act (SOX)
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-404**

**M. C. M. (Semester - IV) Examination - 2010**

**CYBER LAW**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

(1) Q. Nos. 1 and 6 are compulsory.

(2) Solve **any three** from Q. Nos. 2 to 5.

---

---

**Q.1) Case Study : (Solve any two cases)**

**[2x10=20]**

- (a) Some users from company complain about their mails being read and deleted by some user from company. They feel that the password is stolen by that user. The IT Manager feels that this is a technical attack performed by that user, who either records password or uses some method to know password. Elaborate on various technical attacks used in such cases and suggest measures to avoid such attacks.
- (b) Mr. Nattu is very much fond of hacking various systems and sites. Mr. Pittu also became interested in doing the same. Mr. Pittu wants to know everything about hacking. Guide him about hacking, hacker and hacking techniques.
- (c) Rural Development Bank is introducing electronic banking system for day to day transactions. The users like bank clerks, officers, managers and customers will be performing various transactions through the system. While designing such system, how will you implement access controls and multilevel security for book keeping system.

**Q.2) What is Biometrics ? Explain different Physical and Behavioural Biometrics.**

**[10]**

**Q.3)** What is Public Key and Private Key ? Explain Public Key Infrastructure in detail. **[10]**

**Q.4)** What is Incident ? Explain incident reporting, incident response and response team in detail. **[10]**

**Q.5)** Compare Multilevel and Multilateral Security from implementation point of view. **[10]**

**Q.6)** Write short notes : **(Any Four)** **[5x4=20]**

- (a) Sandboxing
  - (b) Concurrency in Distributed System
  - (c) Alarms
  - (d) Symmetric Cryptography
  - (e) Digital Signature
-

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

**[3777]-405**

**M. C. M. (Semester - IV) Examination - 2010**

**MULTIMEDIA AND WEB DESIGNING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instruction :**

*Q. No. 8 is compulsory and solve **any four** from the remaining.*

**Q.1) (A)** Explain terms Hypertext, Hypermedia and Multimedia : **[10]**

(B) Distinguish between Analog and Digital Signals. **[05]**

**Q.2) (A)** How will Multimedia be useful in Academic Activities ? **[08]**

(B) What are the different Images available in Computer ? **[07]**

**Q.3) (A)** Explain Frame and its attributes in HTML. What are the drawbacks of using Frames ? **[05]**

(B) Write HTML Code : (use Frames) **[10]**

|                                                 |                                   |
|-------------------------------------------------|-----------------------------------|
| Logo                                            | XYZ Institute of Computer Science |
| <u>About Us</u><br><u>Home</u><br><u>Course</u> |                                   |
| Welcome (Use Marquee Tag)                       |                                   |

**Q.3) (A)** Explain various Style Sheets with examples. **[10]**

(B) Explain various list tags in HTML. **[05]**

- Q.4)** (A) Design interface and write code for accepting StudentID, Name, Feespaid, sex from the user. On submit of the form check data entered. Show error message, if data is incorrect else transfer the control to insert\_record.asp page. (Use Java Script)
- StudentID - Numeric and not null
- Name - Not null
- Fees\_paid - Greater than 1000 [10]
- (B) Explain various methods and properties of Array Object [05]
- Q.5)** (A) Write important methods, properties and collection for REQUEST and RESPONSE Object. [10]
- (B) What is Cookie ? How is it created, read and destroy ? [05]
- Q.6)** (A) Accept birth date of the user and wish him Happy Birth Day if Today is his birthday. (Use Java Script) [08]
- (B) Design interface to accept month and year from user and will display total no. of days in that month. (Use ASP) [07]
- Q.7)** (A) Write XML Code to store information about Employee (EMPNO, NAME, SAL) and write HTML Code to display data in tabular format using DSO Object. [10]
- (B) Explain use of XML Namespace. [05]
- Q.8)** Write short notes : (Any Two) [10]
- (a) File inclusion in ASP
  - (b) Application and Session Objects
  - (c) DHTML
  - (d) MIDI Messages

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-406**

**M. C. M. (Semester - IV) Examination - 2010**

**SOFT SKILLS**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

*(1) Q. No. 1 is compulsory. Out of the remaining attempt any 3 questions.*

*(2) Figures in the brackets indicate marks to the questions.*

- 
- 
- Q.1)** (A) Define Business Communication. Explain principles of effective Communication. **[15]**
- (B) Explain Modern Methods of Communication using Electronic Technology. **[10]**
- Q.2)** Describe preparation for a Successful Interview. **[08]**
- Explain difference between Technical and Personal Interview. **[07]**
- Q.3)** The students of your MCM Class plan to organise industrial visit to TATA Motors, Pune as a part of field visit. Prepare a suitable request letter to the GM (HR) of the Company. **[15]**
- Q.4)** (A) Explain importance of Non-verbal Communication. **[08]**
- (B) Compare and contrast Verbal and Non-verbal Communication. **[07]**
- Q.5)** Listening is most neglected area in Communication. Discuss. **[08]**
- Give important tips for Listening. **[07]**

**Q.6)** Write short notes : (**Any Three**)

**[15]**

- (a) Self-assessment
  - (b) Negotiation Skill
  - (c) Notes Taking
  - (d) Business Ethics
  - (e) Notice of Meeting
-



Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3777]-407**

**M. C. M. (Semester - IV) Examination - 2010**

**QUALITY CONTROL AND SOFTWARE TESTING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Q. No. 1 is compulsory.*
- (2) *Solve **any four** from the remaining.*
- (3) *Figures on the right show marks.*

- 
- 
- Q.1)** (A) What is Test Data ? What are its norms ? **[04]**  
(B) Write test cases for the Simple Calculator Program. **[10]**
- Q.2)** Define Software Quality. Describe need and importance of Quality. Discuss any 5 major Quality Attributes. **[14]**
- Q.3)** What is Review ? What is its purpose ? Explain different types of Reviews. **[14]**
- Q.4)** What is Defect Management ? How is it important ? Explain Process of Defect Recording and Tracking. **[14]**
- Q.5)** What is a Test Plan ? List down contents of a Test Plan. **[14]**
- Q.6)** Write short notes : **(Any Two)** **[14]**  
(a) Testing Data - Warehouse Products  
(b) System Testing  
(c) TMM

Total No. of Questions : 7]

[Total No. of Printed Pages : 1

**[3777]-408**

**M. C. M. (Semester - IV) Examination - 2010**

**NETWORK TECHNOLOGY**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Q. Nos. 1 and 7 are compulsory.
- (2) Solve **any three** from the remaining.
- (3) Draw neat diagrams whenever necessary.

- 
- 
- Q.1)** (A) Explain steps for Installation of Linux in Graphical Mode. [10]  
(B) Explain Microsoft Software update service and its benefits. [10]
- Q.2)** Explain procedure to configure DHCP Server in Linux. [10]
- Q.3)** Explain Rights Management Service for Windows 2003 Server. [10]
- Q.4)** Explain Network Management Commands in Linux. [10]
- Q.5)** Explain steps for implementing Web Services in IIS in Windows 2003 Server. [10]
- Q.6)** Explain Directory Structure of Linux. [10]
- Q.7)** Write short notes : (Any Four) [4x5=20]
- (a) VPN
  - (b) Wireless Networks
  - (c) Application Protocols
  - (d) Hub, Switch and Router
  - (e) Modems
  - (f) TCP/IP Protocol

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-41**

**M. C. M. (Semester - IV) Examination - 2010**

**LINUX PROGRAMMING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

*(1) Question Nos. 1 and 6 are compulsory.*

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

---

---

**Q.1) (A)** Write PHP Code for to get employee information and store it into emp table of erp MySQL database, consider fields empcd, e\_name, b\_sal. **[10]**

**(B)** Explain any three MySQL Administration Commands. **[10]**

**Q.2)** Explain **any five** Linux Commands : **[10]**

- (a) find
- (b) mkfs
- (c) nice
- (d) rpm
- (e) cpio
- (f) mkdir

**Q.3)** Write PHP Script for to accept 10 numbers and print maximum number. **[10]**

**Q.4)** Explain various authentication methods in Apache Web Server Configuration File. Write setting for these authentications. **[10]**

**Q.5) Write any five MySQL Command :** **[10]**

- (a) Create table books in Library Database.
- (b) To store book details in book table.
- (c) Take backup of book table in txt file.
- (d) List all book names of title "LINUX".
- (e) Create user MCM and assign update rights to him for all tables of library database.
- (f) List all book names of price less than 1,000.

**Q.6) Write short notes : (Any Four)** **[20]**

- (a) Process and Daemons
  - (b) Back-up Commands in Linux
  - (c) GUI for MySQL
  - (d) Functions in PHP
  - (e) Partitions in Linux
  - (f) MIME Setting in Apache
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3777]-42**

**M. C. M. (Semester - IV) Examination - 2010**

**VB.NET**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Question Nos. 1 and 7 are compulsory.*
  - (2) *Solve **any four** from Q. Nos. 2 to 6.*
  - (3) *Make your own assumptions if required.*
- 

**Q.1) Explain .Net Framework. [15]**

**Q.2) Write code to create interface - MyMath having the following functions - [10]**

Add (x and y as integer) - will return x + y value

Subtract (x and y as integer) - will return x - y value

Divide (x and y as integer) - will return x/y value

Multiply (x and y as integer) - will return x \* y value

Create a class - calculator which will implement MyMath Interface.

Write code to test class.

**Q.3) Explain important methods and properties of the following controls : [10]**

(a) Menu Control

(b) Progress Bar and Scroll Bars

**Q.4) Explain in short ADO.NET Architecture. [10]**

**Q.5) Explain with example Structural Exceptional Handling. [10]**

**Q.6)** Write sectional code to navigate (next, prev, last, first) through all records of Emp table (Empno, name, salary), using disconnected architecture and bound controls. [10]

(Design Interface and set properties)

**Q.7)** Write short notes : (**Any Three**) [15]

- (a) ASP Architecture
  - (b) Inheritance
  - (c) Overriding and Overloading
  - (d) Sealed Class
-

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3777]-43**

**M. C. M. (Semester - IV) Examination - 2010**

**ADVANCED JAVA**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

(1) *Question No. 1 is compulsory.*

(2) *Solve **any four** from the remaining.*

---

---

**Q.1) Answer the following :**

**[10]**

- (a) Which are the methods of Naming Class ?
- (b) Which are the methods to be implemented in Session Bean ?
- (c) How Callable Statement is fired ?
- (d) How to instantiate DatagramPacket Class ?
- (e) What is JSP Include and Forward ?

**Q.2) Write servlet application to accept department name from HTML page and servlet will display list of employees working under that department. Assume suitable table structure.**

**[15]**

**Q.3) Create a bean that will calculate square and cube of a given number. Use bean in JSP program. Accept number from user and display square and cube of that number.**

**[15]**

**Q.4) Write EJB component to display student marks details. The Browser client will send roll no. to the EJB. Through bean retrieve record of that student from underlined database and display marks of five subjects, total marks and percentage in client browser. (State your assumptions, if any) Write the following : Remote Interface. Home Interface, Implementation Class, ejb-jar.xml File, Client Program.**

**[15]**

**Q.5)** Write Echo Client - Server Networking Program.

**[15]**

**Q.6)** Write notes : (**Any Three**)

**[15]**

- (a) JNDI
  - (b) Session Tracking in Servlets
  - (c) JSP Directives
  - (d) RMI Architecture
-



Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3777]-44**

**M. C. M. (Semester - IV) Examination - 2010**

**CYBER LAW**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

- (1) Question Nos. 1 and 6 are compulsory.*
- (2) Attempt **any three** from Q. Nos. 2 to 5.*
- (3) Figures to the right indicate full marks.*

---

**Q.1)** What is Symmetric and Asymmetric Cryptography. Explain in detail. **[20]**

**Q.2)** Explain in detail RSA Algorithm. **[10]**

**Q.3)** What is E-commerce ? Explain different techniques required for protecting E-commerce. **[10]**

**Q.4)** What is Biometrics ? Explain different physical and behavioral biometrics. **[10]**

**Q.5)** What is Security Policy ? Explain in detail components of Security Policy. **[10]**

**Q.6)** Write short notes : **(Any Four)** **[5x4=20]**

- (a) Digital Signature
- (b) Access Control List
- (c) Technical Attack
- (d) Fingerprints
- (e) Prepayment Meters

Total No. of Questions : 8]

[Total No. of Printed Pages : 1

**[3777]-45**

**M. C. M. (Semester - IV) Examination - 2010**

**SOFTWARE QUALITY ASSURANCE**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

- (1) Question No. 1 is compulsory.*
- (2) Solve **any five** from the remaining.*

- 
- |                                                                                      |             |
|--------------------------------------------------------------------------------------|-------------|
| <b>Q.1)</b> Discuss Quality and Productivity. Discuss 'Quality is Free'.             | <b>[20]</b> |
| <b>Q.2)</b> Explain 'V' Model of SDLC.                                               | <b>[10]</b> |
| <b>Q.3)</b> Explain Software Configuration Management.                               | <b>[10]</b> |
| <b>Q.4)</b> Explain System Testing in detail.                                        | <b>[10]</b> |
| <b>Q.5)</b> What is Control ? Explain Application Control and Management Control.    | <b>[10]</b> |
| <b>Q.6)</b> Explain and compare ISO and CMM.                                         | <b>[10]</b> |
| <b>Q.7)</b> What is Review ? What is its purpose ? Explain guidelines to conduct it. | <b>[10]</b> |
| <b>Q.8)</b> Write short notes : ( <b>Any Two</b> )                                   | <b>[10]</b> |
| (a) Bench Marking                                                                    |             |
| (b) SEPG                                                                             |             |
| (c) Earn Value Analysis                                                              |             |

Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3777]-46**

**M. C. M. (Semester - IV) Examination - 2010**

**ADVANCED BUSINESS APPLICATIONS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Question Nos. 1 and 6 are compulsory.*
- (2) Solve **any 3** from the remaining.*
- (3) State assumptions, if necessary.*

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**Q.1)** Draw Use Case diagram for transfer of amount : **[20]**

- (a) To third party, using Internet Banking facility.
- (b) Suggest normalised file layout for Fixed Deposit System, considering basic application functionality for F.D.

**Q.2)** Explain MT Processing over Net, in Hospital Management System. **[10]**

**Q.3)** Define Supply Chain. Explain Process Cycles in detail for Supply Chain. **[10]**

**Q.4)** What is CRM ? Explain CRM Process in detail. **[10]**

**Q.5)** What is ERP ? Explain different modules of ERP in brief. **[10]**

**Q.6)** Write short notes : **(Any Four)** **[20]**

- (a) IPR
  - (b) BCP
  - (c) DSS
  - (d) BULL and BEAR
  - (e) WAP
-

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

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

**[3777]-47**

**M. C. M. (Semester - IV) Examination - 2010**

**COMPUTER AIDED SYSTEM ENGINEERING TOOLS (CASE TOOL)**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

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

*(2) Attempt **any five** from the remaining.*

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**Q.1) (A) Define CASE TOOL. Explain its types. [10]**

**(B) How CASE TOOL is used to improve productivity in Software Engineering Process ? [10]**

**Q.2) What do you know about Re-documenting ? Explain with example. [10]**

**Q.3) Draw a Usecase Diagram and Class Diagram for Airline Ticket Booking System. [10]**

**Q.4) What are the strategies needed for CASE Adoption ? [10]**

**Q.5) How Rational Rose CASE TOOL different than Testing Tool ? [10]**

**Q.6) Draw a Usecase and Activity Diagram for Hostel Admission Process of Student. [10]**

**Q.7) Write short notes : (Any Two) [10]**

**(a) Project Support Tool**

**(b) Characteristics of CASE TOOL**

**(c) Re-use and Replacement**

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**[3777]-47/1**

Total No. of Questions : 7]

[Total No. of Printed Pages : 1

**[3777]-48**

**M. C. M. (Semester - IV) Examination - 2010**

**BUSINESS PROCESS OUTSOURCING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

***Instructions :***

*(1) Question No. 7 is compulsory.*

*(2) Attempt **any five** from Q. Nos. 1 to 6.*

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**Q.1) What is BPO ? Explain significance of BPO. [10]**

**Q.2) Explain benefits of BPO. [10]**

**Q.3) Explain Outsourcing. Explain advantages and disadvantages. [10]**

**Q.4) Training in BPO Industry is one of the key areas of Concern. Comment. [10]**

**Q.5) Why is India chosen as the major hub by BPO sector ? [10]**

**Q.6) What are Non-discloser and Service Level Agreements in BPO ? [10]**

**Q.7) Write short notes : (Any Five) [20]**

- (a) HR Outsourcing
- (b) Skill Sets required by Employees in BPO
- (c) Models in BPO
- (d) Problems faced by Employees
- (e) KPO

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**[3777]-48/1**