

Total No. of Questions : 2]

[Total No. of Printed Pages : 3

**[3686]-102**

**P. G. D. C. A. (Semester - I) Examination - 2009**

**‘C’ PROGRAMMING**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

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**Q.1) (A) What will be the output ? Give reasons : (Any Three) [12]**

(a) void main( )

```
{  
    int a, b, c;  
    b=2;  
    a=2*(b++);  
    c=2*(++b);  
    printf("a=%d c=%d", a, c);  
}
```

(b) void main( )

```
{  
    int arr[]={1,4,6,3,7};  
    int*ptr;  
    for(ptr=arr+4; ptr>=arr; ptr--)  
        printf("%d", a[ptr-arr]);  
}
```

```

(c) void main()
    {
        char ch[40]={'p','g','\0','d','c','a'};
        int len=strlen(ch);
        printf("string=%s and length of the string=%d", ch, len);
    }

(d) int circle(int radius)
void main()
    {
        int r;
        scanf("%d", &r);
        printf("area of circle=%f",circle(r));
    }
int circle(int r)
    {
        return ((3.14*r*r));
    }

```

(B) Explain the following :

[08]

- (a) Dynamic Memory Allocation in C
- (b) Storage Classes in C

**Q.2) Solve any five :**

**[50]**

- (a) Accept a number and print its digits in words. i.e. if the number is 532 then the output should be → Two Three Five.
- (b) Write a program which will accept 10 numbers in an array and find the 2nd largest no. from it. (Without using any sorting method)
- (c) Write a program to print the following pattern :  

```
@* @* @  
  
@* @*  
  
@* @  
  
@*  
  
@
```
- (d) Write a program that accepts a string and prints no. of occurrences of each character in that string.  
e.g. – if the string is “abcbbcd”, the program should print “a1 b3 c2 d1 e1”
- (e) Write a recursive function to find prime factors of a number.
- (f) Write a program to accept 50 Employee records in the following array of structures (emp name, deptno, total salary). Display employee/employees details getting maximum salary.
- (g) Write a program to add the contents of one file at the end of another.

Total No. of Questions : 9]

[Total No. of Printed Pages : 2

[3686]-101

P. G. D. C. A. (Semester - I) Examination - 2009

FUNDAMENTALS OF INFORMATION TECHNOLOGY

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 70

*Instructions :*

(1) Solve *any 7* questions.

(2) All questions carry equal marks.

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**Q.1)** Convert :

(a)  $(152)_{10} = (?)_2$

(b)  $(718)_8 = (?)_2$

**Q.2)** Explain with example uses of Flowchart and Algorithm.

**Q.3)** Explain following logical circuits with diagram :

NAND, NOR

**Q.4)** Explain 8086 Microprocessor Architecture.

**Q.5)** Explain Memory Management Techniques - Segmentation, Paging.

**Q.6)** What is File ? Explain File Organisation and Accessing Techniques.

**Q.7)** Explain OSI 7 Layer Model.

**Q.8)** What is Software ? Explain with example various types of Software.

**Q.9) Write short notes : (Any Two)**

- (a) E-mail
  - (b) Protocols
  - (c) Topologies
  - (d) CD ROM
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3686]-41**

**P. G. D. C. A. (Semester - I) Examination - 2009**

**SOFTWARE ENGINEERING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instructions :***

- (1) Question No. 7 must be answered.*
  - (2) Attempt **any 5** questions from Q. Nos. 1 to 6.*
  - (3) Draw neat diagram if necessary.*
- 
- 

- Q.1)** Draw a Sales Invoice Layout to show details of a customer and no. of items sold to the Customer. Assume that no taxes are levied. [12]
- Q.2)** Design Screen Layout to enter Fixed Deposit details in a Co-operative Bank. Assume necessary details and state them clearly. [12]
- Q.3)** State qualities of a Good Systems Analyst. [12]
- Q.4)** Discuss various logic representation techniques. [12]
- Q.5)** Describe purpose of data flow diagram and also state limitations of a data flow diagram. [12]
- Q.6)** Write short notes : **(Any Two)** [12]
- (a) Numbering and Coding Scheme
  - (b) Normalization
  - (c) Functional Decomposition Diagram

**Q.7)** Stores Department in a company receives material from a vendor and a sub-contractor. The department issues material to the production department against of requisition the material. The necessary entries are made in the stock ledger to update stock of material online.

Draw a suitable ERD. Also give list of normalized file layouts to process the above transactions.

**[20]**

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Total No. of Questions : 4]

[Total No. of Printed Pages : 2

**[3686]-2**

**P. G. D. C. A. (Semester - I) Examination - 2009**

**PRINCIPLES AND PRACTICES OF MANAGEMENT (PPM)**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

***Instruction :***

*All questions are compulsory.*

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**Q.1)** What is Planning ? Explain Process of Planning. “Planning should be defined as the selection from alternatives, policies, procedures and programmes.” Explain with reference to I.T. Industry. **[20]**

**OR**

**Q.1)** Define Management. “Management is getting things done through people.” Comment. “Management is both a Science and an Art.” Discuss. **[20]**

**Q.2)** Distinguish ‘Leaders’ from ‘Managers’. Explain different styles of Leadership with examples. **[15]**

**OR**

**Q.2)** What is Organisation Structure ? Explain Line and Staff Organisation, with its advantages and disadvantages. **[15]**

**Q.3)** “Co-ordination is the essence of Managing.” Explain. Suggest practical measures for effective co-ordination with reference to I. T. Industry. **[15]**

**OR**

**Q.3)** Discuss the Concept of ‘Delegation of Authority’. What factors influence Delegation of Authority ? Suggest some measures for improving Delegation of Authority. **[15]**



**Q.4) Write short notes : (Any Three)**

**[30]**

- (a) Ergonomics
  - (b) Quality Circles
  - (c) M.B.O.
  - (d) Decision-making Process
  - (e) Types of Control
-

Total No. of Questions : 10]

[Total No. of Printed Pages : 2

**[3686]-1**

**P. G. D. C. A. (Semester - I) Examination - 2009**

**ELEMENTS OF INFORMATION TECHNOLOGY (EIT)**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

(1) Solve *any 8 questions*.

(2) *All questions carry equal marks.*

---

**Q.1)** Explain and draw block diagram of Elements of Digital Computer.

**Q.2)** Solve :

(a)  $(530)_{10} = (?)_8$

(b)  $(2332)_8 = (?)_{16}$

**Q.3)** Explain OSI 7 Layer Model.

**Q.4)** Explain File Sorting and File Merging with example.

**Q.5)** Explain any 2 Secondary Storage Devices.

**Q.6)** Explain functions of Operating System.

**Q.7)** Explain working of Ethernet and Arcnet.

**Q.8)** Explain Algebra Rules and DeMorgan Rules.

**Q.9)** Write short notes : (**Any Two**)

(a) AND, OR

(b) FCFS

(c) Instruction Execution Cycle

**Q.10)** Explain various features of Micro, Mini and Mainframe Computers.

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Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3686]-202**

**P. G. D. C. A. (Semester - II) Examination - 2009**

**BASIC JAVA**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Q. Nos. 1 and 7 are compulsory.*
  - (2) *Solve **any 4** from the remaining.*
  - (3) *Figures to the right indicate full marks.*
- 
- 

- Q.1)** Write an item class with itemno, name, qty, rate as instance variables.  
Write 3 different constructors. Create 2 objects of the class. **[10]**
- Q.2)** Write a program which will accept 2 file names on command line  
and interchange contents of those files. **[10]**
- Q.3)** Write a program to accept a string from user that will throw a user  
defined exception if count of S character in the string is more than 3. **[10]**
- Q.4)** Write an applet which will accept 2 numbers and will print tables  
of odd numbers between those accepted numbers. **[10]**
- Q.5)** Write a threaded application which will print odd numbers in one text  
field and even numbers in other text field when start button is clicked. **[10]**
- Q.6)** Write an awt application which will have 3 scrollbars and a text field.  
Change background colour of the text field when scrollbars are  
scrolled. **[10]**

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

**[20]**

- (a) Applet Life Cycle
  - (b) Abstract Class
  - (c) Vector
  - (d) Overloading and Overriding
  - (e) Packages
-

Total No. of Questions : 3]

[Total No. of Printed Pages : 3

**[3686]-201**

**P. G. D. C. A. (Semester - II) Examination - 2009**

**VISUAL BASIC**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

*Instruction :*

*All questions are compulsory.*

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**Q.1) Give output for following sections of code and explain it :**

**(Any Five)**

**[20]**

(a) Dim a as integer

a = 50

select case a

case IS > 20

print "Best of Luck"

Case 1 To 200

print "Try Luck Next Time"

Case 11 – 50

print "I try my best"

End select

(b) Dim c as integer, n as integer

do until n = 10

if n < = 0 Then Exit Do

n = n – 1

c = c + 1

loop

Msgbox ("The loop run" & c & "times")

**[3686]-201**

**1**

**P.T.O.**

- (c) Dim dt as Date  
dt = dateAdd ("m", 3, # 12\12\2009#)  
print dt  
dt = dateSerial (2008, 22, 12)  
print dt
- (d) Dim arr(5) as integer, n as integer  
n=1  
for i=0 to 4  
    j = n \* n  
    a(i) = j  
    print a(i);  
    n = n + 1  
Next
- (e) Dim chk  
chk = cbool (iif (97 > 101, 0, 1))  
print chk  
chk = cdate ("03\27\2009")  
print chk
- (f) Dim st as string  
st = "Have a nice Day"  
print Format (st, "<")  
print Mid (st, 7)  
print StrConv(st, VbLowerCase)  
print Left(st, 4)

**Q.2)** Design an interface. Set properties accordingly and write a code for the following : **(Any Three)** [30]

- (a) Assume database Payroll and table is Emp\_mst. For that the following are the fields empid, emp\_nm, sal, designation, dept. Write a code for adding, deleting and saving the records using ADODB.
- (b) Take a textbox and a timer. After every two seconds the background colour of textbox will change continuously.
- (c) Accept two numbers from user and print count of prime numbers in between them.
- (d) Accept 15 numbers from user. Print maximum and minimum of them. [Use Array]

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

- (a) Text Box
- (b) Scrollbar
- (c) Form
- (d) Picture Box

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

- (a) Any Data Functions with e.g.
- (b) Scope of a Variable
- (c) Common Dialog Box
- (d) Loops used in Visual Basic



Total No. of Questions : 6]

[Total No. of Printed Pages : 2

[3686]-22

P. G. D. C. A. (Semester - II) Examination - 2009

DATABASE MANAGEMENT SYSTEM (DBMS)

(2005 Pattern)

Time : 3 Hours]

[Max. Marks : 80

*Instructions :*

- (1) Question Nos. 1 and 6 are compulsory.
- (2) Answer **any three** from the remaining questions.

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**Q.1)** State and explain Normalisation. Normalise the following document upto 3NF with proper explanation : [15]

<b><u>BILL</u></b>				
<b>ABC Shopping Centre, Pune</b>				
Bill No. : _____		Bill Date : _____		
Customer Name : _____				
Customer Address : _____				
Item No.	Item Description	Qty.	Rate	Amount
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
Total Amount				-
Signature : _____				

- Q.2)** Define DBMS. Explain various models of DBMS with its advantages and disadvantages. [15]
- Q.3)** What is a Check Point ? Explain Shadow Paging in detail. [15]
- Q.4)** State E. F. Codd's Rule. [15]
- Q.5)** Define Transaction. Explain the Properties of Transaction with an example. [15]
- Q.6)** Write short notes : **(Any Four)** [20]
- (a) SQL
  - (b) Cardinality
  - (c) Entity and Referential Integrity
  - (d) Multiversion Technique (MVT)
  - (e) Users of DBMS
  - (f) Triggers
-

Total No. of Questions : 2]

[Total No. of Printed Pages : 2

**[3686]-21**

**P. G. D. C. A. (Semester - II) Examination - 2009**

**‘C’ PROGRAMMING**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

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---

**Q.1) (A) What will be the output ? Give reasons : (Any Three) [12]**

(a) void main( )

```
{
    int r, arr[ ] = {1, 9, 2, 8, 3, 7, 4, 6, 5};
    for(r = 0; r<9; r++)
        printf(“\n%d\n”, arr[++r]);
}
```

(b) void main( )

```
{
    int p = 10, q = 10, r = 10, x;
    x = (p != q != r ? 20 : -20);
    printf(“x = %d”, x);
}
```

(c) void main( )

```
{
    int x, y, z;
    x = y = z = 1;
    z = ++x && ++y && ++z;
    printf(“x=%d y=%d z=%d”, x, y, z);
}
```

```

(d) #define dprint(expr) printf(“=%d\n”, expr)
void main( )
{
    int a = 3, b = 2;
    clrscr();
    dprint(a/b);
}

```

(B) Explain the following : [08]

- (a) Break and Continue Statement
- (b) Storage Classes

**Q.2) Solve any six :** [60]

- (a) Write a program to print sum of the squares of the first 10 odd numbers.
- (b) Write a program to merge given two sorted integer array elements in the third array.
- (c) Write a program to print the following pattern :
 

```

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

```
- (d) Write a program to read a string on command line and convert lowercase characters into uppercase and uppercase characters into lowercase.
- (e) Write a recursive function to convert decimal number to its binary equivalent.
- (f) Write a program to accept 50 Football player records in the following array of structures (player name, total number of goals, no. of matches played). Display player/players details getting maximum goals.
- (g) Write a program to copy contents of file 1.txt to file 2.txt and count no. of characters copied.

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3686]-302**

**P. G. D. C. A. (Semester - III) Examination - 2009**

**ORACLE**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) Q. Nos. 1 and 6 are compulsory.
- (2) Solve **any 3** questions from the remaining.
- (3) Figures to the right indicate full marks.

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**Q.1) Consider following table structure to write SQL queries : [20]**

Emp table :

empno number(3), ename varchar2(30), sal number(4), comm number(3), job varchar2(10), deptno number(2), joindate date, address varchar2(30)

Dept table :

deptno number(2), dname varchar2(30), location varchar2(30)

- (a) List all employees from Pune City.
- (b) List all employees having 'R' as third character in their name.
- (c) Show alphabetical list of employees.
- (d) Show all employees working in Sales Department.
- (e) Display names of employees who receive comm.
- (f) Display how many employees are working in the organisation.
- (g) Show all managers having salary greater than 10,000.
- (h) Create emp table with proper constraints.
- (i) Insert a record in dept table.
- (j) Show department wise total salary paid.

- Q.2)** Write a stored procedure which will accept department number and will return no. of employees in that department. Handle exceptions. [10]
- Q.3)** Write a function which will accept employee no. as an argument and will return his job. Handle exceptions. [10]
- Q.4)** Write a PL/SQL block which will print empno, name, salary and job of all employees. Use cursor. [10]
- Q.5)** Explain how to use date functions. [10]
- Q.6)** Write short notes : **(Any Four)** [20]
- (a) Data Types
  - (b) Exception Handling
  - (c) Cursors
  - (d) Triggers
  - (e) Joins
-

Total No. of Questions : 7]

[Total No. of Printed Pages : 2

**[3686]-301**

**P. G. D. C. A. (Semester - III) Examination - 2009**

**SOFTWARE ENGINEERING AND PROJECT MANAGEMENT**

**(2008 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instructions :**

- (1) *Q. No. 1 must be answered.*
- (2) *Attempt **any** 5 from the remaining.*
- (3) *Draw neat diagram. Neat diagrams carry marks.*
- (4) *State assumptions clearly.*

---

**Q.1)** A Management Institute proposes to computerise student admission process. There are 5 management courses conducted by the institute. Intake for each course is 60 per year. Form fee is Rs. 300 and tuition fee is Rs. 30,000 per course per year. Office Clerk issues a receipt to the student after the payment is made. Payment is to be made by Cash or Demand Draft only. To describe above process draw :

- (a) Context Level Diagram
- (b) E-R Diagram
- (c) Layout of Receipt
- (d) File Layout

**[20]**

**Q.2)** Describe SDLC in detail.

**[10]**

**Q.3)** Draw Decision Tree for the following :

A manufacturing company offers discount to the customer on the basis of the invoice amount :

- 10% discount is given, if bill amount is upto Rs. 5,00,000.
- 5% discount is given, if bill amount is upto Rs. 1,00,000.

**[3686]-301**

**1**

**P.T.O.**

- 2% discount is given, if bill amount is up to Rs. 50,000 and amount is paid immediately by cheque.
- No discount is offered, if bill amount is less than Rs. 20,000. [10]

**Q.4)** Draw a screen layout to process Fixed Deposit details. A trading company accepts deposits from public, as well as from staff. Period of deposit is 2 years and 3 years, with minimum amount of Rs. 10,000. Maximum amount should not exceed Rs. 25,000. Rate of Interest is 6% and 7% respectively. Also state data validations required. [10]

**Q.5)** A Co-operative Bank proposes to computerise salary processing. There are 500 employees and 5 branches in the city. Assuming 5 earnings and 5 deductions, draw and design for the following :

- (a) Pay Slip Layout
- (b) Normalised File Layouts [10]

**Q.6)** Define System. Explain characteristics of a System. [10]

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

- (a) Sequence Diagram
- (b) Reverse Engineering
- (c) RAD
- (d) Structured Programming



Total No. of Questions : 4+8]

[Total No. of Printed Pages : 2

**[3686]-32**

**P. G. D. C. A. (Semester - III) Examination - 2009**

**UNIX**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) Sections I and II are compulsory.
- (2) All the questions are compulsory.
- (3) Figures to the right indicate full marks.

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**SECTION - I**

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

**[10]**

- (a) To display all lines from the file EMP having word 'Thomas'
- (b) To print calendar for March, 2009
- (c) To display first 3 lines from emp.lst
- (d) To check spellings of emp.txt
- (e) To know your machine name from network

**Q.2) Write short notes :**

**[10]**

- (a) Is with all options
- (b) File permissions

- Q.3)** Explain **any five** commands : **[10]**
- (a) wc
  - (b) tail
  - (c) write
  - (d) passwd
  - (e) pwd
  - (f) more

- Q.4)** Explain grep with all options. **[05]**

## SECTION - II

- Q.1)** Write a shell script which accepts one or more filenames as arguments and converts them all to uppercase. **[10]**
- Q.2)** Write an AWK script which prints sum of all marks (2nd field) in the file 'Result.dat'. **[05]**
- Q.3)** Write an AWK script which prints name, designation, department and salary of all sales people from emp.lst. **[05]**
- Q.4)** Write a shell script to find whether given number is prime or not. **[05]**
- Q.5)** List and explain some built-in functions in AWK. **[05]**
- Q.6)** Explain loops in shell programming with examples. **[05]**
- Q.7)** Write a shell script that will accept a year from the keyboard and determine whether the year is a leap year or not. **[05]**
- Q.8)** Write an AWK program to print time when user Thomos logged into the system. Give output as username and time. **[05]**

Total No. of Questions : 6]

[Total No. of Printed Pages : 2

**[3686]-31**

**P. G. D. C. A. (Semester - III) Examination - 2009**

**OBJECT ORIENTED PROGRAMMING WITH JAVA (OOPJ)**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

- (1) *Question No. 1 is compulsory.*
  - (2) *Solve **any 4** from the remaining.*
  - (3) *All questions carry equal marks.*
- 
- 

**Q.1) Select correct options :**

**[16]**

- (a) What is the width of double in Java ?
  - (i) 64
  - (ii) 128
  - (iii) 32
  - (iv) 16
- (b) Final Keyword is used to :
  - (i) avoid overriding
  - (ii) to enhance smooth overriding
  - (iii) avoid overloading
  - (iv) none of the above
- (c) Which method is not in string class ?
  - (i) reverse( )
  - (ii) length( )
  - (iii) charAt( )
  - (iv) indexOf( )

(d) When you attempt to add a float, int and byte, the result will be :

(i) float

(ii) byte

(iii) int

(iv) double

**Q.2)** Write a student class with rollno, name, marks, course as instance variables. Write print() method. Overload constructors. Create 3 different objects. **[16]**

**Q.3)** Accept marks of 4 students from command line. If marks of any student are greater than 100, then throw "TooBigNo" user defined exception. **[16]**

**Q.4)** Accept 2 file names and compare its contents of both the files are same or not. **[16]**

**Q.5)** Write an applet which will accept 3 numbers and print largest of those. **[16]**

**Q.6)** Write short notes : **(Any Four)** **[16]**

(a) abstract class

(b) streams

(c) exception handling

(d) characteristics of Java

(e) packages

Total No. of Questions : 6]

[Total No. of Printed Pages : 1

**[3686]-42**

**P. G. D. C. A. (Semester - IV) Examination - 2009**

**BUSINESS APPLICATIONS**

**(2005 Pattern)**

**Time : 3 Hours]**

**[Max. Marks : 80**

**Instructions :**

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

- 
- 
- Q.1)** Write short notes : (**Any Four**) **[20]**
- (a) Stock Ledger
  - (b) Trial Balance
  - (c) Bin Card
  - (d) Ratio Analysis
  - (e) Sales Analysis
- Q.2)** (A) Describe taxes included in the Sales Invoice of the Customer. **[07]**  
(B) Describe steps in computing ABC Analysis Report. **[08]**
- Q.3)** (A) What are various methods of Material Issue ? Explain any one in brief. **[08]**  
(B) Draw a layout of Payslip. **[07]**
- Q.4)** Explain how to prepare Bill of Material using Computer Database ? Draw file layouts required in this process. **[15]**
- Q.5)** (A) What is an Inventory ? What are the objectives of Inventory Control System ? **[08]**  
(B) Describe Statutory Deductions in Payroll System. **[07]**
- Q.6)** What is Final Account ? Explain structure of Final Account. **[15]**

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**[3686]-42/1**