Total No. of Questions - 06] **[Total No. of Printed Pages - 02**

[4286] – 101

P.G.D.C.A. (Semester - I) Examination, 2012

101 : FUNDAMENTALS OF INFORMATION TECHNOLOGY

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question No. 1 and 6*** *are compulsory.*

(ii) *Attempt* ***any three*** *questions from the remaining.*

Q. 1. (A) Define 'Computer'. Explain block diagram of computer with functions of each unit. **[10]**

(B) Explain EBCDIC in brief. **[4]**

Q. 2. (A) Explain the use of different types of computer with their functional areas. **[10]**

(B) Differentiate between Compiler, Interpreter and Assembler. **[4]**

Q. 3. (A) Discuss advantages and disadvantages of different computer network topologies. **[7]**

(B) Explain NAND and NOR universal gates. **[7]**

Q. 4. (A) Define software. Explain various types of software with example. **[7]**

(B) Explain any two input devices. **[7]**

Q. 5. (A) Explain file organisation and accessing techniques. **[7]**

(B) Explain FCFS and Round Robin. **[7]**

Q. 6. (A) Solve the following: **[8]**

(i) $(101011)_2 = (\ ?\ )_{10}$

(ii) $(AC)_{16} = (\ ?\ )_{10}$

(iii) $(256)_{10} = (\ ?\ )_8$

(iv) $(321)_8 = (\ ?\ )_2$

(B) Write short notes on **(any two)**: **[6]**

(i) Types of memory

(ii) Virus and antivirus

(iii) Any one output device.

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[4286] – 102

P.G.D.C.A. (Semester - I) Examination, 2012

102 : 'C' PROGRAMMING

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question No. 1** is compulsory.*

(ii) *Solve **any five** questions from the remaining questions.*

Q. 1. What will be the outputs? Give explanation **(any four)** : **[10]**

(a)
```
#define SQR(X)X*X
main()
{
    int a,b;
    a=2;
    b=sqrt(a++);
    printf("%d%d",a,b);
}
```

(b)
```
void main()
{
    static char str[]="Welcome to India";
    printf("%s \n%s\n%s"str,str+5,str+8);
}
```

(c)
```
void main()
{
 int a=3;
  print("%d"++a++);
}
```

(d)
```
main()
{
 int x,y;
 int z=3;
 int *p;
x=2*(z+5);
p=&z;
y=2*(*p+5);
printf("%d %d",x,y);
}
```

(e)
```
main()
{
 int i=0,x=0;
 do{
      if(i%5=0){  x++;
           printf("%d",x);
}
i++;
while(i<20);
printf("\n%d ",x);}
```

Q. 2. (a) Write a program to find Fibonacci of a given number using Recursion. **[6]**

(b) Write a program to accept a 3-digit number and print all combinations of its digit. **[6]**

Q. 3. Write a program to read the source file which contain the text only and converts character to their ASCII value and print. **[12]**

Q. 4. (a) Write a program to accept two matrix and display the addition of these two matrix. **[6]**

(b) Write a program to accept the string and check that string is palindrome or not. **[6]**

Q. 5. Accept any integer number through command prompt. Write a program to print the number in word.
e.g. if number is 123 it should print One Two Three **[12]**

Q. 6. Create a structure of Bank account holder as accno, name, balance. Write a program for withdraw and deposit the amount and balance also. **[12]**

Q. 7. (a) Write a program to display the pattern : **[6]**

A

a b

A B C

a b c d

A B C D E

(b) Write a program to find an average of 100 number which is stored in an array. **[6]**

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Total No. of Questions - 03] **[Total No. of Printed Pages - 03**

[4286] – 201

P.G.D.C.A. (Semester - II) Examination, 2012

201 : VISUAL BASIC

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *All questions are **compulsory**.*

Q. 1. Give output for following section of code and explain it (**any five**): **[20]**

(a) Note : format for date is ("dd\mm\yyyy\")
Dt = # 26/02/2009#
print Date Add ("Q", 2, Dt)
print Date Diff. (("m", Dt, Date) \ 12)

(b) Dim str as string
str = "I Love India"
print str;
print Left (str, 5)
print str conv (str, 2)

(c) Dim a, b
a=12
b=7
print IIF (b>a, b, a)

(d) Dim m
m=50#
print TypeName (m)
print VarType (m)
print Len (m)

(e)
```
Dim a as integer
a=5
select case a
        case a > 10
                print "play with me"
        case a < 5
                print "All the Best"
End Select
        Print a
```

(f)
```
Dim Mystr
        mystr = str reverse (mid ("we will do it"3,7))
        print str conv (mystr, \buppercase)
```

Q. 2. Write the VB code for the following and set the properties of appropriate controls (**any three**): **[30]**

(a) Create a form which will display the system date and time in following format in label 1. The time will be changed after every one second :

o\p Example 1 April 2010
10 : 10 : 10 am

(b) Write a VB program code to accept 10 integer elements of an array and sort these array elements in ascending order.

(c) Write ADD code for the following table student_mast:

Field Name	Type
stud_Reg_No	Text
stud_Name	Text
Birth_date	Number
Degree	Text
percentage	Number

Perform operation ADD, SAVE, VIEW, First, Last, Next, Record.

(d) Write a menu driven program in VB to take two integer value and display result for:

(i) Addition

(ii) Subtraction

(iii) Multiplication

(iv) Division

Q. 3. (a) Write short notes on (**any two**): **[10]**

(i) Controls in VB

(ii) MGS Box and Input Box

(iii) Scope of variables

(iv) String functions

(b) Explain important properties of the following controls: **[10]**

(i) Timer

(ii) Directory List Box

(iii) Scrollbar

(iv) Command Button

(v) Label

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Total No. of Questions - 07] **[Total No. of Printed Pages - 02**

[4286] – 202

P.G.D.C.A. (Semester - II) Examination, 2012

202 : JAVA

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question 1*** *and* ***7*** *are compulsory.*

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

Q. 1. Solve **any three** from the following: **[6]**

(a) Select true statements:

(i) Constructor cannot be overloaded.

(ii) Constructor returns nothing.

(iii) Main( ) method can be overloaded.

(iv) New keyword is used to call constructor.

(b) Select true statements:

(i) In Java interface is used as multiple inheritance.

(ii) Object of interface can be created using new keyword.

(iii) All variables in interface are static and public.

(iv) All methods in interface are abstract.

(c) Which of the following is true:

(i) Constructors can be declared as abstract.

(ii) Final class can be sub classed.

(iii) Abstract class prevent inheritance.

(iv) Class can contain both static and non-static methods.

(d) Select true statements:

(i) Overloaded methods have same signature.

(ii) Overridden methods have same signature.

(iii) Overloaded methods are declared in same class.

(iv) Overridden methods are declared in same class.

Q. 2. Write a Java application to copy contents from one file into another except vowels. **[14]**

Q. 3. Accept a string from command line, if the string is in uppercase then throw user defined exception. **[14]**

Q. 4. Write a Java code which will overload the method max as follows: **[14]**

int max (int, int)

void max (int, int, int)

int max (int [ ])

Q. 5. Write a program that will create and run following threads: **[14]**

— To print letter 'A' 50 times

— To print integer 1 through 60

Q. 6. Write an awt application that will display a list of colours. After selecting one of the colour set the background accordingly. **[14]**

Q. 7. Write short notes on the following (**any two**): **[8]**

(a) Exception Handling

(b) Inheritance

(c) Wrapper classes

(d) Data types in Java.

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Total No. of Questions - 08] [Total No. of Printed Pages - 03

[4286] – 21

P. G. D. C. A. (Semester - II) Examination, 2012

201 : 'C' PROGRAMMING

(2005 Pattern)

Time : Three Hours **Total Marks : 80**

Note : *(i)* ***Question No. 1** is compulsory.*

(ii) *Solve **any six** questions from the remaining.*

(iii) *Figures to the right indicate full marks.*

Q. 1. What will be the outputs? Give explanation **(any four)** : **[20]**

(a)

```
main()
{ printf(5+"Fasmile")
}
```

(b)

```
main()
{
int x=10,y=20,z=5,i;
i=x<y<z;
printf("%d",i);
}
```

(c)

```
main()
{ int j,a=0
  for(j=,-1;j<=3;j++)
{switch(j-1)
{ case 0;
case 1:a+=2;break;
case2:
case 3: a+=3;break;
default: a+=4;
}
printf("%d/n"a);
}
}
```

(d)

```
# define CALC(A) (A-10)
main()
{
int a=10,b;
b= CALC(a+20);
printf("%d",b);
}
```

Q. 2. (a) Write a program to print all prime numbers from 1 to 10. **[5]**

(b) Write a program to copy the content from one dimensional integer array into another array in reverse order. **[5]**

Q. 3. Write a program to read the source file and copy into another file in upper case. **[10]**

Q. 4. (a) Write a program to print following output **[5]**

1

1 2

1 2 3

1 2 3 4

(b) Write a function to combine the two string into third string. **[5]**

Q. 5. Accept any integer number entered through command prompt. Write a program to print the square of number. **[10]**

Q. 6. Write a program to accept suitable data for the students' marks and print the result of 10 students (using structure). **[10]**

Q. 7. Write short notes on the following: **[10]**

(a) Array

(b) MACRO

(c) switch statement

(d) operators in C

Q. 8. Write a program to write recursive function to print Fibonacci series. **[10]**

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Total No. of Questions - 07] **[Total No. of Printed Pages - 02**

[4286] – 301

P.G.D.C.A. (Semester–III) Examination, 2012

SOFTWARE ENGINEERING AND BUSINESS PROCESS

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question 1*** *is* ***compulsory****.*

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

(iii) *Draw neat diagrams wherever required.*

(iv) *Neat diagrams carry* ***equal*** *marks.*

Q. 1. A cooperative bank accepts deposits from public for a period of 1, 2 and 3 years at the interest rate of 9%, 9.5% and 10% respectively. 1% additional interest rate is given to senior citizens. Minimum deposit should be ₹ 5,000 and maximum 50,000.

(a) Draw Fist Level (DFD) **[6]**

(b) Draw ERD **[6]**

(c) Design Fixed Deposit Receipt format **[4]**

(d) Design Master data entry screen for entering various schemes **[4]**

Q. 2. Design following reports to be generated from Payroll System **[10]**

(a) Payslip

(b) Income Tax statement to be submitted to State government.

Q. 3. What are the different fact finding methods to be carried out by a system analyst? **[10]**

Q. 4. Draw decision tree **[10]**

Income tax is computed for salaried person as follows:

— If salary is < 1,00,000/- then no tax

— If salary is >= 1,00,000/- and < 1,50,000/- then 10% tax

— If salary is >= 1,50,000/- and < 2,00,000/- then 20% tax

— For salary > 2,00,000/- then 30% tax

— For physical disabled person 10% rebate in tax

Q. 5. Write short notes on (**any two**): **[10]**

(a) Software testing

(b) Waterfall model

(c) Feasibility study

Q. 6. State the role of systems analyst in system design. **[10]**

Q. 7. Explain various types of systems. **[10]**

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Total No. of Questions - 05] **[Total No. of Printed Pages - 02**

[4286] – 302

P.G.D.C.A. (Semester - III) Examination, 2012

302 : ORACLE

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question No. 1*** *and* ***Qusetion No. 5*** *are compulsory.*

(ii) *Solve* ***any two*** *questions from the remaining.*

(iii) *Figures to the right indicate full marks*

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

Book table

Book no. number(5) , Title varchar2(30), noOfPages number(4), Price number(5) Edition varchar2(10), publication varchar2(40), purchaseDate date

Author table

AuNo number(4), Aname varchar2(30), address varchar2(30)

Book-Author table

Bookno-number(5), AuNo number(4),

(a) List all book from BPB publication.

(b) Create view to see book title, author name, publication and price.

(c) Display Book title which is costliest.

(d) List Authors staying in Pune.

(e) How many books are available?

(f) List books on “Oracle”.

(g) Which author has written maximum books?

(h) List the books purchased in the month of Oct 2011.

(i) Insert a record in Book table.

(j) Create Book table with proper constraints.

Q. 2. (a) Write a stored procedure which will accept (author name) and will return number of Books written by that author. **[10]**

(b) Explain select statement with all clauses. **[10]**

Q. 3. (a) Write PL/SQL block which will accept a number and print whether given no is prime no or not. **[10]**

(b) Explain use of predicates such as in, between, like, exists, null. **[10]**

Q. 4. (a) Write a stored procedure to print employee details for given deptno (Use cursor). **[10]**

(b) Write a PL/SQ block to show use of user defined Exception handling. **[10]**

Q. 5. Write short notes on (**any two**): **[10]**

(a) Date functions

(b) Set operators

(c) Joins

(d) Data types

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Total No. of Questions - 06] [Total No. of Printed Pages - 03

[4286] – 31

P.G.D.C.A. (Semester - III) Examination, 2012

302 : OBJECT ORIENTED PROGRAMMING WITH JAVA

(2005 Pattern)

Time : Three Hours **Total Marks : 80**

Note : *(i)* ***Question No. 1** is compulsory.*

(ii) *Solve **any four** questions from the remaining.*

(iii) *All questions carry equal marks.*

Q. 1. (A) What will be the outputs? Justify your answer. **[6]**

(i)

```
Public class A {
Public static void main (String [ ] args) {
int i = 10;
int j = 20;
int k = 00;
k = j > i ? j > = (5*2)? 5: 10 : 100;
System.out.print/n("k=" +k);
}
}
```

(ii) Select correct statements:

(a) Constructors can be declared as private

(b) Constructors do not have return type

(c) Constructors can be overridden

(d) Constructors can be over loaded

(iii)
```
Public class ABC{
Public static void main (string args [ ]){
String s = "Learning Java is interesting, I told you";
String p = "times";
int i = 17;
int j = 60;
System.out.print/n (s + i + j + p);
}
}
```

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

(i) Threads

(ii) Applet life cycle

(iii) Features of Java

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

Q. 3. Write an awt application which will accept values for 2 numbers. Show the result in text field or total number of odd numbers between those given two numbers. **[16]**

Q. 4. Write threaded application where first thread prints even numbers from 1 to 100 and other thread prints alternative characters from A to Z. **[16]**

Q. 5. Book Rate Qty.

- ☐ JAVA 250
- ☐ DBMS 360
- ☐ VB 200

BILL

Design above Applet, if user selects books by clicking on check box and writes quantity required. When bill button is clicked, print bill details with proper format. **[16]**

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

(a) Data types in Java

(b) Streams

(c) Overloading and Overriding

(d) Packages

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Total No. of Questions - 05] **[Total No. of Printed Pages - 02**

[4286] – 401

P.G.D.C.A. (Semester - IV) Examination, 2012

401 : DATA STRUCTURES AND ALGORITHMS

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i) Write structure definitions.*

(ii) Answer all sub questions of a question at one place.

Q. 1. (A) Convert the following infix form to its postfix form :

A * (B - C / D) + E

Show the contents of both the stacks at each step in a tabular form. **[8]**

OR

Write C implementation for conversion of infix to postfix expression.

(B) Evaluate the following prefix form:

–+AB–*C+DE where A=7 B=3 C=1 D=3 E=4

Show the contents of stack at each step in a tabular form. **[7]**

OR

Write C implementation for evaluation of prefix expression.

Q. 2. (A) Write a function that returns total count of non leaf nodes in a binary tree. **[8]**

OR

Write a function that creates a mirror of a binary tree.

(B) Write a function to add an element in a linear queue of characters implemented as an array. **[7]**

OR

Write functions for in-order and pre-order traversal of Binary Search Tree.

Q. 3. (A) Compute row major and column major address of the member a[8][10] of a 2-d array a[15][15] where base address of the array is 300 each member occupies 2 bytes of memory. **[8]**

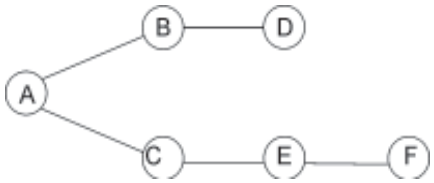
(B) Give the steps for sorting following numbers using Heap sort **[7]**

3 1 2 6 5 4

OR

Write a function that prints data at even positions of nodes of a single linear linked list.

Q. 4. Consider the following graph: **[15]**



(a) Write adjacency matrix.

(b) Write adjacency list.

(c) Generate the output of Breadth First Search (BFS) when starting vertex is 1.

(d) Generate the output of Depth First Search (DFS) when starting vertex is 1.

(e) Write indegree of each vertex.

Q. 5. Design Huffman's tree for the following message: **[10]**

oopsaradigms

What kind of tree is a Huffman's tree?

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Total No. of Questions - 06] **[Total No. of Printed Pages - 02**

[4286] – 402

P.G.D.C.A. (Semester - IV) Examination, 2012

402 : PRINCIPLES AND PRACTICES OF MANAGEMENT AND ORGANISATIONAL BEHAVIOUR

(2008 Pattern)

Time : Three Hours **Total Marks : 70**

Note : *(i)* ***Question No. 1*** *is compulsory.*

(ii) *Solve* ***any three*** *questions from the remaining questions.*

(iii) *Figures to the right indicate full marks.*

Q. 1. (a) Define the term management. Is management as an art or science? Discuss. **[10]**

(b) State and explain contributions made by F.W. Taylor and Henry Fayol. **[15]**

Q. 2. What do you understand by Motivation? Explain difference between theories of motivation by Herzberg and Maslow. **[15]**

Q. 3. What do you mean by Leadership? State its importance. Explain in brief types of leadership. **[15]**

Q. 4. What are the objectives of Planning? Explain different steps in planning process. **[15]**

Q. 5. Define Co-ordination. Explain its nature and scope in detail. **[15]**

Q. 6. Write short notes on **(any two)** : **[15]**

(a) Team building

(b) Theory X and Theory Y

(c) Transactional Analysis

(d) Line and staff organisation

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Total No. of Questions - 07] **[Total No. of Printed Pages - 02**

[4286] – 41

P. G. D. C. A. (Semester - IV) Examination, 2012

401 : SOFTWARE ENGINEERING

(2005 Pattern)

Time : Three Hours **Total Marks : 80**

Note : *(i)* ***Question No. 1*** *is compulsory.*

(ii) *Solve* ***any five*** *questions from the remaining.*

(iii) *Draw neat diagrams wherever required.*

(iv) *Neat diagrams carry marks.*

Q. 1. An engineering manufacturing company procures the material from its vendors against the factory requisition. The stores department forwards the requisition to purchase department for the procurement. Purchase department raises enquires to vendors. Vendors send quotations which are analyzed by management and purchase order raised by purchase department. A copy of purchase order is given to stores and finance for references. Supplier supplies the material against the purchase order. Stores department receives the material and prepares Goods Receipts Note (GRN) based on DC (Delivery Challan) and sends a copy of GRN and DC to purchase department. Supplier raises invoice and payment is made by finance department.

(a) Draw Context Level DFD **[6]**

(b) Draw ERD **[6]**

(c) Design normalized tables **[8]**

(d) Design purchase order and format of GRN **[10]**

Q. 2. Design member registration data entry screen for a college library system. **[10]**

Q. 3. Explain various fact finding methods used by analyst. Explain advantages and disadvantages of each method. **[10]**

Q. 4. Draw 'Decision Table' for the following case : **[10]**

Invoice Amount	**Sales Tax**	**Discount**
Less than 10,000	Nil	Nil
10,001 – 20,000	2%	4%
20,001 – 40,000	3%	5%
40,001 and above	3%	6%

Q. 5. Write short notes on **(any two)**: **[10]**

(a) System Implementation

(b) Data Dictionary

(c) Prototyping Model

Q. 6. What is system testing? Explain need of system testing. **[10]**

Q. 7. What is cost benefit analysis? State the need of CBA. **[10]**

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Total No. of Questions - 06] **[Total No. of Printed Pages - 01**

[4286] – 42

P. G. D. C. A. (Semester - IV) Examination, 2012

402 : BUSINESS APPLICATIONS

(2005 Pattern)

Time : Three Hours **Total Marks : 80**

Note : *(i)* ***Question No. 1*** *is compulsory.*

(ii) *Solve* ***any four*** *questions from the remaining.*

Q. 1. Write short notes on **(any four) :** **[20]**

(a) LIFO

(b) Sales Analysis

(c) ABC Analysis

(d) Trial Balance

(e) Bin Card

Q. 2. Explain the 'Bill Layout of Hotel Management System'. Mention file layout of the system. **[15]**

Q. 3. Draw ERD and Context level diagram for 'Payroll system'. **[15]**

Q. 4. Explain how to prepare 'Bill of Material' using computer database. Draw file layouts required in this process. **[15]**

Q. 5. Explain the Raw Material Rejection Analysis Report. How it helps to purchase department? **[15]**

Q. 6. (A) Draw a layout for G.R.N. (Goods Receipt Note). **[5]**

(B) Explain material requirement planning with an example. **[10]**

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