POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2015
Programme: BE | Full Marks: 100
Course: Programming in C | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is a flowchart? Write an algorithm and draw a flowchart to display whether a number is prime or not. 7

   b) Why header files in C is included in program? Give reasons. Also list-out different header files you know. Illustrate the program showing the use of header file. 8

2. a) Define operator in c. List out different types of operators used in c. Explain three of them with example. 7

   b) An electricity board charges according to the following rates 8

   For the first 100 units ---------- Rs 40 Per Unit
   For the next 200 units ----------Rs 50 Per Unit
   For the Beyond 300 units --------Rs 60 Per Unit

   All users are also charge meter charge, which is equal to Rs 50. Write a program to read number of units consumed and print out the total charges.

3. a) Write a program to read a matrix and find the sum of all the digits in its main diagonal. 7

   b) Define function prototype? Write a program to read an integer number and find the sum of its digits using recursive function. 8

   OR

   What is pre-processor directives? Differentiate between macro and function with describing necessary example.

4. a) What is pointer? Explain memory allocation in C programming. Why dynamic memory allocation is better? 7

b) Write a program using pointers to read in an array of integers. Next add the elements in the array and display the sum on the screen. 8

5. a) Define structure and union. Explain way of declaring and accessing member of them with suitable example. 7

b) Write a program to read the name, author, and price of 500 books in a library from the file "library.dat". Now print the book name and price of those books whose price is above Rs. 300. 8

6. a) What do you mean by nested structure? Write a program to explain nested structure. 5

b) Find the output 5

```
void fun(int  *p);
void main()
{
        int x=4;
        printf("%d\n",x);
        fun(&x);
        printf("%d\n",x);
}
fun(int *p)
{
        *p=*p/2+13;
}
```

c) Differentiate between user defined and library functions with suitable examples. 5

7. Write short notes on: (**Any two**) 2×5

a) Switch case statement.

b) Binary and unary operators.

c) File opening in C.

POKHARA UNIVERSITY

Level: Bachelor | Semester – Fall | Year : 2012
Programme: BE | Full Marks: 100
Course: Programming in C | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What is programming language? Describe Low Level Language (LLL) and High Level Language (HLL) with examples. 7

OR

Explain briefly the various generations of computers with example.

b) Define Algorithm and Flowchart. Draw a Flowchart to read 3 numbers from the user and find the smallest one. 8

2. a) Define the terms operators, variable and constant with example. Explain the necessary rules to define the variables name in C programming. 7

b) What will be the output after executing the following Codes (assume necessary header files): 4+4

i)
```
void main()
{
int x=10,y=20,z=5,i;
i=x*(++y+z++)%3+y/x*2-5;
x+=z;
y-=z;
x--;
z+=10;
z--;
printf("x=%d\ny=%d\nz=%d",x,y,z);
printf("\ni=%d",i);
```

```
}
```

ii)

```
void main()
{
char str[20]={"University"};
char str1[20];
strcpy(str1,"Pokhara");
printf("\n%s",str1);
strcat(str1," ");
strcat(str1,str);
printf("\n%s",str1);

strrev(str1);
printf("\n%s",str1);
}
```

3. a) Describe the different types of decision control statements used in C programming with their syntax. 8

   b) An electricity board charges according to the following rates: 7

   For the first 20 units ---------- Rs 80

   For the next 80 units ----------Rs 7.5 per unit

   For the next 100 units ---------- Rs 8.5 per unit

   For the Beyond 200 units --------Rs 9.5 per unit

   and Tax 15% in total amount is charged to all users. Write a program to read number of units consumed and print out the total charges.

4. a) What is array? Write a program to read values of 3×3 order matrix then compute the sum of even elements. 7

   b) What do you mean by function in C programming? Distinguish between function call by value and function call by reference with an example. 8

5. a) What is pointer in C? Can a function return more than one value? Justify your answer with an example. 8

   b) Write a program with user defined function using pointer to convert all the upper case to lower case and vice-versa in a 7

string given by the user.

OR

Write a program to print the Fibonacci series up to N^{th} term using recursive function. The Fibonacci series is 0 1 1 2 3 5 … …. 7

6. a) Compare and contrast structure with union. Write a program enlightening how to access the nested structure components. 8

   b) Write a program by using structure that includes AccNo, CName, CAddress, CTelNo and Balance for 100 customers of ABC financial institution and store in ***account.txt*** file and finally display the information of the customers who have the balance greater than Rs 10000. 7

7. Write short notes on **any two:** 2×5

   a) Macros

   b) String functions

   c) Global versus local variable

   d) File opening modes

POKHARA UNIVERSITY

Level: Bachelor | Semester – Fall | Year : 2005
Programme: BE | Full Marks: 100
Course: Programming in C | Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Draw a block diagram of digital computer and describe each unit briefly. 7

   b) Write a menu based system which accept operator as well as operand from user and perform the task according to user choice. 8

Operator	Meaning
+	Addition
-	Subtraction
/	Division
I	Increment
D	Decrement

2. a) Draw a flow-chart and then write a program to read three sides of a triangle and print area for valid data and to print " Invalid data" if either one side of the triangle is greater or equals to the sum of other two sides. 15

   (Area = $\sqrt{s(s-a)(s-b)(s-c)}$ where a, b, c are the three sides and s = (a + b + c)/2)

3. a) Differentiate between local and global variable with suitable example. 7

   b) Write a program to calculate and print area of circle and volume of sphere of given radius. With the help of single function void calculate (float radius, float ×area, float ×volume) 8

4. Write a program to display the following menu: 15

Menu

a) conversion of ASCII code to char
b) conversion of ^{0}F temperature to ^{0}C
c) multiplication table of given number
d) exit from program

and to perform task as per user's choice repeatedly until his/her choice is to exit.

5. a) Define pointer. What are the rules to be followed while performing pointer arithmetic operations and write the valid and invalid pointer operations? 5

b) Write a program to reverse of string (Character Array) using pointer. 5

c) Write a program to find out maximum number of following 2-D integer array. 5

```
int arr[3] [2] =  {
                  { 12, 29},
                  { 30,40},
                  {16,10},
                  };
```

6. a) What difference between Structure and Union. Write about the storage space (in byte) of they have same definition. 7

like –

```
Struct a                    Union  a
{                           {
        int i;                      int i;
        char    c[2]                char c[2];
};                          };
```

b) Write a program 8

- To create a structure for Telephone Subscriber's data:

  Tel no., name, address, previous month meter reading, current month meter reading
- To write 100 customer's data in a file

7. ***Write short notes on (Any Two)*** 2×5

a) Recursion and recursive functions

b) Graphics functions

c) Dynamic memory allocation

d) Program Documentation

POKHARA UNIVERSITY

Level: Bachelor | Semester – Fall | Year : 2011
Programme: BE | Full Marks: 100
Course: Programming in C | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Write an algorithm for finding greatest number among 'n' numbers. 7

   b) What is an operator? List all operators available in C. Describe three of them. 8

2. a) Why fourth generation of computer is better than third generation ? Differentiate between third generation and forth generation of computer. 8

   b) What are the steps involving during the programming? Explain. 7

3. a) Find out the output: 3

```
main ( )
 {
 int i = 5, j = 4, k = 9 ;
 i = ( i + k)/3+k%(j+i) + j * k% i/2;
 printf ("%d", i);
 }
```

   b) 4

```
main ( )
 {
int x = 16,y = 18, z;
}
y + = x ++;
z = ++ x + y++ ;
x = x + y + z --;
printf (" \n x = %d\ny = %d\nz = %d", x,y,z);
}
```

   c) 8

```
main ( )
 {
 int i,j,k;
for (i = 1; i <=3; i + +)
      for (j = 1; j<=3; j + +)
```

```
        for (k = 1; k< =3; k + +)
            printf ( "\n %d%d%d; i, j, k);
    }
```

4. a) What do you mean by selective and repetitive statement? Why do we need break and continue statement. 7

   b) Write a program to find the terms in the given series till the term value is less than 250. 8

   $(1^2+2^2)/3$, $(2^2+3^2)/4$, $(3^2+4^2)/5$,.....

5. a) Give different ways of initialization of arrays. Give the classification of arrays. 5

   b) What is a function? Categorize it in terms of arguments and return value. 5

   c) Write a C program to find the maximum element in an array of N elements. 5

OR

   a) What do you mean by dynamic memory allocation? Explain about memory leak. 7

   b) Write a program to read N numbers dynamically and sort it using function. 8

6. a) What is structure? Explain its components. How can you access the members of a structure? 7

   b) What is the significance of FILE Pointer? Create a structure called Goods that stores Number, price, and PurchaseDate and Qty. Write a program to store the information of 100 Goods into the file called Goods.dat. 8

7. Write short notes on **any two:** 2×5

   a) Pre- processor directives

   b) String handling functions

   c) Union

   d) Dynamic Memory Allocation