

**PUNE VIDHYARTHI GRIHA'S
COLLEGE OF SCIENCE AND TECHNOLOGY
F.Y. B.SC (Information Technology)
SUB: C Programming**

PAPER CODE: USIT101 (TIME :2 ½ Hrs.) TOTAL MARKS :75M

N.B:-

1. All questions are compulsory.
2. Make suitable assumptions wherever necessary and state the assumptions made.
3. Answers to the same question must be written together.
4. Numbers to the right indicate marks.
5. Draw neat labeled diagrams wherever necessary.
6. Use of Non-programmable calculators are allowed.

Q1) Attempt the following (Any three) (Each of 5 marks) [15M]

- a) Define algorithm. Explain characteristics of an algorithm.
- b) Enlist all the data type in C-language along with their memory requirements.
- c) Define C- token. Explain different C- token with appropriate example.
- d) Define variable. Explain its types with suitable examples.
- e) Explain features of C- programming language.
- f) Draw a flowchart for calculating square of given number.

Q2) Attempt the following (Any three) (Each of 5 marks) [15M]

- a) Define operator. Explain following with suitable example.
 - i) Arithmetic operator
 - ii) Increment decrement operator
 - iii) Relational operator
 - iv) Assignment operator
 - v) Logical operator
- b) Write a program to find largest of three numbers.
- c) What are looping statements? Explain their type with syntax.
- d) Write a program to accept a number from user and print Factorial of it.
- e) Write difference between break and continue statement with suitable example.
- f) Write a program to display the following.

```
*  
**  
***  
****
```

Q3) Attempt the following (Any three) (Each of 5 marks) [15M]

- a) What are functions? Explain function syntax and its elements.

- b) i) List any five library function under ctype.h header file.
 ii) Explain the purpose of following function with suitable example.
 a) Ceil() b) abs() c) cbrt()
- c) Write a program to calculate area of circle using function.
- d) What is the difference between actual and formal argument of function explain with example.
- e) What are formatted and unformatted functions elaborate each of them.
- f) Write a program to demonstrate the use of gets () and puts () functions.

Q4) Attempt the following (Any three) (Each of 5 marks)

[15M]

- a) i) Define array. Explain need of array.
 ii) Explain the declaration and initialization of 1-D array with example.
- b) Write a program in C to find minimum (smallest) number in array.
- c) State any four functions in string.h along with its uses.
- d) i) Define pointers. Explain the declaration & initialization of pointers with example.
 ii) if a=5, c=0, *p is a pointer and p=&a
 After performing the following expression
 $c = 5 * ++(*p)$
 Find the values of variables c=? and a=?
- e) Write a program to sort given numbers in ascending order.
- f) Find the output of the following:

```

int main ()
{
    int *ptr;
    int X;

    ptr=&X;
    *ptr=0;

    printf("X=%d \n",X);
    printf("*ptr=%d \n",*ptr);

    *ptr +=5;

    printf("X=%d \n",X);
    printf("*ptr=%d \n",*ptr);

    (*ptr)++;

    printf("X=%d \n",X);
    printf("*ptr=%d \n",*ptr);
    return 0;
}

```

Q5) Attempt The following (Any three) (Each of 5 marks)

[15M]

- a) Explain structure in C? Explain how we can declare and initialize structure with example.
- b) Write a program to declare structure employee having data member name, address, city. Accept data for 3 employees and display it.
- c)
 - i) What is the difference between structure and array?
 - ii) Define union. Explain syntax of union declaration & initialization with example.
- d)
 - i) Elaborate the need of file handling in C language.
 - ii) Explain various operations performed on a file.
- e) Write a program in C to read an existing file.
- f)
 - i) What are the various modes in the fopen() function.
 - ii) Explain the following.
 - a) Sequential access.
 - b) Random access.