

(2 ½ Hours)

[Total Marks: 75]

N.B. 1) All questions are compulsory.

2) Figures to the right indicate marks.

3) Draw suitable diagrams and illustrations wherever necessary.

4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All the Questions**A) Choose the correct alternative****(5M)**

i) Which of the following special symbol allowed in a variable name?

- a. * (asterisk)
- b. | (pipeline)
- c. - (hyphen)
- d. _ (underscore)

ii) How many times "FYCS" is get printed?

```
#include<stdio.h>
int main()
{
    int x;
    for(x=-1; x<=10; x++)
    {
        if(x < 5)
            continue;
        else
            break;
        printf("FYCS");
    }
    return 0;
}
```

- a. infinite times
- b. 11 times
- c. 0 times
- d. 10 times

iii) How can you combine the following two statements into one?

```
char *p;
p = (char*) malloc(100);
```

- a. char p = *malloc(100);
- b. char *p = (char) malloc(100);
- c. char *p = (char*)malloc(100);
- d. char *p = (char*)(malloc*)(100);

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- iv) Which of the following operations can be performed on the file "NOTES.TXT" using the below code?

```
FILE *fp;
fp = fopen("NOTES.TXT", "r+");
```

- Reading
 - Writing
 - Appending
 - Read and Write
- v) If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?
- .
 - &
 - *
 - >

B) Fill in the blanks:**(5M)**

{ argument, 2, continue, or, 3, goto, scanf, function, printf, and }

- The _____ function is used to display the output on the screen.
- The _____ statement is used to skip a part of the statements in a loop.
- The _____ operator is true only when both the operands are true.
- The function `strcat` has _____ parameters.
- The parameter used in a function call is called _____.

C) Explain the following terms in one or two lines**(5M)**

- What is mean by reserved words?
- In the function call `strcat(s2, s1)`; final result gets stored into which string?
- What are header files and how are they useful in C programming.
- The variables declared in a structure definition are called as?
- When is the "void" keyword used in a function?

Q.2 Attempt the following: (Any THREE)**(15M)**

- Differentiate between Interpreter and Compiler.
- Explain the loop structures available in C languages. Explain any one in detail with example.
- Explain in brief hierarchy of data type variables in C programming.
- What is the difference between = and == symbols in C programming? Explain with suitable example.
- Briefly explain with example working of continue statement in C programming.
- Write a short note on conditional operator.

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Q.3 Attempt the following: (Any THREE) (15M)

- A Define local variable and global variable. Explain in brief.
- B Differentiate between array types of C with list and tuple types of Python.
- C Explain the various ways of initializing one-dimensional integer and character arrays.
- D What is `putchar`? Explain with appropriate example.
- E Explain in detail function prototype.
- F Briefly explain working of `strcmp` function.

Q.4 Attempt the following: (Any THREE) (15M)

- A Write a short note on chain of pointers.
- B Write a C program for defining pointer variable to the structure. Also initialized structure elements pointed by pointer and print the same.
- C State and explain rules for initializing structure.
- D What does `sizeof` operator does? Explain with suitable example.
- E Write a C program using pointers to compute the sum of all elements stored in an array.
- F What is Unions in C programming? How it is different from Structure.

Q.5 Attempt the following: (Any THREE) (15M)

- A Explain in brief structure of C program.
- B Explain working of increment and decrement operator in C programming? Explain with example.
- C Explain the nesting of function with appropriate example.
- D State and explain example of a function with argument and return values.
- E Write a short note on `fseek` function.