

(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 **whenever 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?

- * (asterisk)
- | (pipeline)
- (hyphen)
- _ (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;
}
```

- infinite times
- 11 times
- 0 times
- 10 times

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

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

- char p = *malloc(100);
- char *p = (char) malloc(100);
- char *p = (char*)malloc(100);
- 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+");
```

- a. Reading
 - b. Writing
 - c. Appending
 - d. 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?
- a. .
 - b. &
 - c. *
 - d. ->

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

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

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

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

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

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

- A Differentiate between Interpreter and Compiler.
- B Explain the loop structures available in C languages. Explain any one in detail with example.
- C Explain in brief hierarchy of data type variables in C programming.
- D What is the difference between = and == symbols in C programming? Explain with suitable example.
- E Briefly explain with example working of continue statement in C programming.
- F 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.