OPTION – C

Paper : MAT–HE–5066

(Programming in C)

Full Marks : 60

1. Answer the following : $1 \times 7 = 7$

   (a) 'C' is a object-oriented programming language. *(State True* ***or*** *False)*

   (b) Write down what the following will return –

   ```
   int a[30];
   size of (a);
   ```

   (c) What is the meaning of +21 and –7 ?

   (d) What is the relational operator for 'not equal to' ?

   (e) In C language a comment starts with the symbol _____ and ends with the symbol _____. *(Fill in the blanks)*

   (f) What does '\n' mean ?

   (g) What happens if the condition in a while loop is initially false ?

2. Answer the following questions : 2×4=8

(a) Give the output for

printf("\n%d%d%d \n", i,++i, i++)

(Assume i = 3)

(b) Explain printf ( ) function.

(c) What are the differences between break and exit ( ) function ?

(d) What is local variable and global variable ?

3. Answer ***any three*** from the following : 5×3=15

(a) What is 'for loop' ? Write down the form of 'for loop'. Write a C program to check whether a given number is prime or not using 'for loop'. 1+1+3=5

(b) Explain with examples all the assignment operators. 5

(c) Differentiate between 'if-else' and 'nested if-else' statement. Write C program to find biggest of three numbers using if-else and nested if-else statement. (Write two programs separately) 1+2+2=5

(d) What is an array variable ? How does it differ from an ordinary variable ? How do you initialize arrays in C ?

2+1+2=5

(e) What is recursive function ? What are the uses of this function ? Write a C program to find the factorial of a given positive number using recursion.

1+2+2=5

4. (a) Write a C program to sort a set of n numbers in ascending order and explain the algorithm used. 5+5=10

OR

(b) Explain the unconditional control statements of C in detail. 10

5. (a) Explain the various types of functions supported by C. Give examples for each of the C functions. What are the rules to call a function ? What are actual and formal arguments ? 2+2+4+2=10

OR

(b) Explain the structure of C program in detail. 10

6. (a) Write a C program to compute $cos(x)$ upto 15 terms. 10

OR

(b) Write C programs to add and multiply two matrics of order (3×3).