2020

COMPUTER SCIENCE — HONOURS

Paper : CC-2

Full Marks : 50

The figures in the margin indicate full marks.

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

Answer ***question no.*** **1** and ***any four*** questions from the rest.

1. Answer ***any five*** questions : 2×5

(a) Name the four basic data types in C. Also name the four data-type qualifiers.

(b) What is a string constant? How does it differ from character constant?

(c) Give examples of relational and logical operators.

(d) Name at least four library functions commonly used in C.

(e) What are the purposes of the putchar and getchar functions?

(f) Write the syntaxes of two forms of looping.

(g) What is the purpose of the comma operator? Give an example.

(h) State the purpose of using an automatic variable. What is its scope?

2. (a) How are initial values assigned to variables within a type declaration? How are strings assigned to one-dimensional, character-type arrays?

(b) How is a symbolic constant defined and where in the program?

(c) Describe in brief two different methods to utilize the increment and decrement operators with appropriate examples. (2+2)+(2+1)+3

3. (a) What happens when an end-of-file condition is encountered while reading characters using getchar function?

(b) How can the maximum field width for a data item be specified within a scanf function? Illustrate with proper example.

(c) How can the precision be specified within the output function? Illustrate with an example. 3+4+3

4. (a) Can the conditional if-else statements be nested. (one within another)? Justify your answer with suitable example.

(b) Write a program in C to test whether they are coprime. 5+5

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5. (a) State the purpose of continue statement. Compare with the break statement.

(b) Write down the syntax of the switch statement including the default option.

(c) State three advantages of using functions in C programs. (2+2)+3+3

6. (a) State the significance of 'void' keyword.

(b) Can a function be called from more than one place within a program? Justify your answer in brief.

(c) Differentiate between actual and formal arguments of a function. Illustrate with suitable examples. 2+3+5

7. (a) Write a program in C to find the factorial of an integer.

(b) How does an array differ from an ordinary variable?

(c) Define a 2-dimensional array table of data type integer having 20 rows and 15 columns. What is the maximum number of elements in that array? 5+2+(2+1)

8. (a) How does a structure differ from an array?

(b) What is the relationship between structure member and a structure? What is a tag?

(c) Define a structure consisting of two floating point members, called real and imaginary. Include the tag complex within the definition.

(d) State the primary advantage of using a file. 2+(2+1)+3+2
