

2018

MATHEMATICS

( Major )

Paper : 6.3

( **Computer Programming in C** )

Full Marks : 40

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. Answer as directed (any six) : 1×6=6

(a) A hexadecimal number is preceded by \_\_\_\_\_.

( Fill in the blank )

(b) Mention the basic data types used in C language.

(c) For  $9\% 4$  the output is \_\_\_\_\_.

( Fill in the blank )

(d) Which header file has to be included to use `clrscr()`?

( 2 )

- (e) Using what other statement can you avoid multiple nested if conditions?
- (f) The \_\_\_\_\_ statement is used to transfer the control to the beginning of the loop.

( Fill in the blank )

- (g) Conditional operator is a ternary operator.

( Write True or False )

- (h) What is the number of elements in the array float a[5][6]?

2. Answer any *two* questions : 2×2=4

- (a) What is casting? Give an example.
- (b) What is the purpose of scanf() function? Explain with example the syntax of scanf().
- (c) Distinguish between auto and register storage classes.

3. Answer any *two* questions : 5×2=10

- (a) Draw a flowchart to generate and print the Fibonacci series 0 1 1 2 3 5 ... n.

- (b) Let  $a = 13$  whose binary equivalent is 00001101 and  $b = 6$  whose binary equivalent is 00000110. What will be the results of the following bitwise operations?

$$a \ll b, a \gg b, \sim a, a | b \text{ and } a \& b$$

- (c) What is meant by a recursive function? Using recursive function, write a C program for computing the value of  $x^n$  for given values of  $x$  and  $n$ .

4. Answer any *two* questions : 5×2=10

- (a) Explain with example 'for' loop, 'while' loop and 'do-while' loop used in C.
- (b) Write a C program to find the trace of a given square matrix of order  $n \times n$ .
- (c) Write short notes on machine-level language, assembly language and high-level language.

5. Answer any *two* questions : 5×2=10

- (a) Write the general syntax of the nested if-else statement and switch statement.

(b) Discuss the following operators with examples :

(i) Conditional operator

(ii) Relational operator

(iii) Logical operator

(c) Discuss the uses of goto statement, continue statement and break statement.

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