

3 (Sem-6) MAT M 3

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 ()`?

(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.
