

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 : $2 \times 2 = 4$

- (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 : $5 \times 2 = 10$

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

(3)

- (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?

$a \ll b$, $a \gg b$, $\sim a$, $a | b$ 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 : $5 \times 2 = 10$

- (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 : $5 \times 2 = 10$

- (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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