



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 3rd Semester Examination, 2020, held in 2021

ELSACOR07T-ELECTRONICS (CC7)

C PROGRAMMING AND DATA STRUCTURES

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

GROUP-A

1. Answer any *five* questions from the following: 2×5 = 10

- (a) What is an operator? What are the different operators used in 'C'?
- (b) Compare the use of switch statement with nested if-else statement. Which is more convenient?
- (c) Describe the header file and its usage in C programming.
- (d) What will be the output of the following program?

```
void main( )  
{  
    int x = 10, y = 20;  
    printf("\n %d", x, y);  
}
```

Justify your answer.

- (e) What is the remainder for 5/2 in C language? Explain your answer.
- (f) What is the difference between actual and formal parameters?
- (g) Arrange the following operators in descending order based on priority.
++, %, &&, =, !
- (h) Write down the prototype of "printf" and "getch".

GROUP-B

2. Answer any *six* questions from the following: 5×6 = 30

- (a) Explain with examples the use of '&' and '*' operators in 'C' in connection with pointers? 5

- (b) How do you construct an increment statement or decrement statement in C? 5
- (c) What is the equivalent code of the following statement in WHILE LOOP format? 5
- ```
for (a =1; a<=100; a++)
printf ("%d\n", a * a);
```
- (d) Differentiate Source Codes from Object Codes. What is the use of a '\0' character? 5
- (e) Write a C source code file to perform the following integration using Simpson's 1/3rd rule  $y = \int_0^1 (x^2 + 1) dx$ , consider,  $h = 0.1$ . Use recursive method. 5
- (f) Write a C-program to print and calculate the value of  $\sin x$  as infinite series. 5
- (g) State the differences between float and double. Write down the necessity of return statement. Clearly explain how 'break' differs from that of 'exit'. 5
- (h) Write a C source code file to swap the integer numbers stored in two memory addresses 8100H and 8200H using function. 5
- (i) How do you access the values within an array? Can two or more operators such as \n and \t be combined in a single line of program code?  $2\frac{1}{2} + 2\frac{1}{2}$
- (j) In C programming, how do you insert quote characters (' and ") into the output screen? What is the difference between the = symbol and == symbol? 5

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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