TDC Even Semester Exam., 2019

COMPUTER SCIENCE

(Honours)

(2nd Semester)

Course No. : BCSH–204

(Programming in C and Scientific Computation)

Full Marks : 90
Pass Marks : 30

Time : 6 hours

_The figures in the margin indicate full marks
for the questions_

Perform **four** experiments, taking **two** from Part—I
and **two** from Part—II. Part—III is compulsory.

PART—I

1. Find the sum of _n_ natural numbers using recursion and without recursion using C program. 15

2. Write a C program to find out factorial of a number using recursion and without using recursion. 15

3. Write a function which receives a float and an int from main( ), find the product of these two and returns the product which is printed through main( ). 15

4. Write a function which receives 5 integers and returns the sum, average and standard deviation of these numbers. Call this function from main( ) and print the result in main( ). 15

5. Write a program to print all prime numbers from 1 to 300, using break and continue statement. 15

6. Any year is entered through the keyboard, write a program to determine whether the year is leap year or not. 15

7. Write programs to swap value of two variables using call by value and call by reference. 15

(3)

8. If a five digit number is input through the keyboard, write a program to reverse the number and obtain the sum of first and last digit of these numbers.   15

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PART—II

9. Write a C program for Simpson's 1/3 rule.   15

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10. Write a C program to find root of a given equation by using Newton-Raphson method.   15

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11. Write a C program to implement trapezoidal rule using function.   15

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12. Write a C program to find root of a given equation by using bisection method.   15

(4)

13. Write a C program to calculate relative error, absolute error and truncation error.   15

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14. Write a C program to evaluate $\sin(0\ 25)$, correct to five decimal places.   15

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15. Write a C program for Runge-Kutta 4th order method.   15

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16. Write a C program to implement Gauss elimination method.   15

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17. Write a C program to implement regula-falsi method.   15

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18. Write a C program to fit set of a data in a straight line.   15

PART—III

19. Practical Note Book.   15

20. Viva voce.   15

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