BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

00542

Term-End Practical Examination

December, 2017

BCSL-058(P)/S3 : COMPUTER ORIENTED NUMERICAL TECHNIQUES LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two questions in this paper and both are* ***compulsory****.*

(ii) Each question carries 20 marks.

(iii) Rest 10 marks are for viva-voce.

(iv) The programs may be implemented in any ***one*** *of the programming languages C or C++, or MS-Excel or any other Spreadsheet software.*

---

1. Write a program to calculate the value of sine of an angle given in radians using the formula

$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} - \frac{x^{11}}{11!} + \frac{x^{13}}{13!} - \frac{x^{15}}{15!}.$$

(Only the above 8 terms should be used).

Please note the following : *20*

(i) The value x is in radians. (π radians = 180°)

(ii) $n! = n \times (n-1) \times (n-2) \ldots \times 3 \times 2 \times 1$

2. Write a program to implement the Trapezoidal rule for approximating the value of the following definite integral : *20*

$$I = \int_0^6 (x^2 + x + 2)\,dx, \quad \text{using } h = 1{\cdot}0.$$
