

**BACHELOR OF COMPUTER APPLICATIONS (Revised)**  
**(BCA)**

**Term-End Practical Examination**

**December, 2016**

**BCSL-058(P)/S4 : 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) *10 marks are reserved for viva-voce.*  
(iv) *The programs may be implemented in any **one** of the programming languages out of C, C++, MS-Excel or Spreadsheet.*

1. Write a program to calculate the value of sine of an angle (given in radians or in degrees), accurate up to four places of decimals, using the formula

$$\sin(x) = x - \frac{x^3}{(3!)} + \frac{x^5}{(5!)} \dots$$

and then find the values of  $\sin(\pi/3)$  and  $\sin(\pi/4)$  (or  $\sin 60^\circ$  and  $\sin 45^\circ$ ). 20

2. Write a program to implement the trapezoidal rule for approximating the value of

$$\int_{3.2}^{4.2} x^{2/3} dx, \text{ using only two nodal points.} \quad 20$$