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BCSL-058(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

Term-End Practical Examination

00858

June, 2018

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) Rest 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 package.*

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

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} \ldots .$$

You must use the terms upto x^{12}. Please note that

$$n! = n \times (n-1) \times (n-2) \ldots \times 3 \times 2 \times 1.$$ *20*

2. Write a program to implement Simpson's $(1/3)^{rd}$ rule to approximate the value of a definite integral. Use this program to approximate the value of *20*

$$I = \int_{2 \cdot 2}^{3} (x^3 + 2x^2)\, dx, \quad \text{using } h = 0 \cdot 2.$$
