**ECHELON INSTITUTE OF TECHNOLOGY**

**Department of Humanities and Applied Sciences**

**Assignment No. 1: MATHEMATICS (BSC-301)**

**Course:** B. Tech CSE S**emester:** 3rd

**Date of Issue:** 9 sep, 2024 **Date of Submission:** 13 sep, 2024 **Course Unit included:** 1st   **Assignment Number:** 1st

**Session:** 2024-25 **Max. Marks:** 20

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***CO-1 To develop the tool of sequence and series for learning advanced Engineering Mathematics.***

***CO-2*** ***Basic knowlede of differentiation and its application .***

| **Q.N.** | **Question** | **CO** | **Bloom’s Taxonomy Level** | **Marks** |
| --- | --- | --- | --- | --- |
| **Q. 1** | 1. Define D’Alemberts ratio test and Rabbe’s test. CO-1 BTL-1 2. 2. Test the convergence of the series   (a) Define the limit of a function of two variables . CO-2 BTL -1. 2 | CO-1 | BTL-2 | 2 |
| (b) If Z=; find ∂z/∂x and ∂z/∂y . | CO-2 | BTL-2 | 2 |
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|  |  |  |  |
| **Q-2** | Test the convergence of the series  + | CO-1 | BTL-2 | 3 |
| **Q. 3** | Find radius of convergence | CO-1 | BTL-3 | 3 |
| **Q.4** | find directional derivative of ∅(x,y,z) = at the point (1,-2,-1) in the direction of the vector 2i-j-2k. | CO-2 | BTL-3 | 3 |
| **Q. 5** | Find the minimum value of the function  subject to the condition ax+by+cz=a+b+c . | CO-2 | BTL-3 | 3 |