



Attock Campus

COMSATS University Islamabad

Department of Mathematics

Assignment # 04



Class: BCS (3rd)

Subject: Calculus and Analytic Geometry

Instructor: Dr. Atiq ur Rehman

Due Date: 25-12-2024 (1250PST)

Course Code: MTH104

Marks: 20

Name: _____

Reg: FA23-BCS-_____

Question # 1: Evaluate the convergence by ratio test:

$$\sum \frac{n!}{(-2)^n}$$

Question # 2: Use comparison test to prove that the following series is absolutely convergent:

$$\sum \frac{(-2)^n}{3^n + 1}$$

Question # 3: Find the radius of the convergence of the following power series:

$$\sum \frac{(-1)^{n+1}}{(n+1)^2 5^n} (x+1)^{2n}.$$

Question # 3: Use the power series to compute the integral:

$$\int_0^1 e^{-x^2} dx.$$
