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Jaypee University of Information Technology, Waknaghat

Test - 1, February 2020

B.Tech (ECE/CSE/IT/CE)

Course Code: 10B11MA201
Course Title: Mathematics - II
Course Credits: 4

Max. Marks: 15

Max. Time: 60 min

Instructions: ALL questions are compulsory and carry equal marks.

1. Does the series $\sum_{n=2}^{\infty} \dfrac{1}{n(\ln n)^2}$ converge or diverge? Justify your answer.

2. Determine if the series $\sum_{n=0}^{\infty} \dfrac{(-1)^n}{n^2 + 1}$ is convergent or divergent.

3. Determine the absolute convergence of the series $\sum_{n=1}^{\infty} \dfrac{(-1)^{n+2}}{n^2}$.

4. Find the interval of convergence for the power series $\sum_{n=0}^{\infty} \dfrac{x^n}{(n+1)2^n}$.

5. Obtain a series solution for $\dfrac{dy}{dx} - 2xy = 0$ about 0.

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