

Name:

Enrolment No:



UPES

End Semester Examination, May 2024

Course: Digitization in Renewable Energy

Program: B.Tech. – Renewable and Sustainable Energy Engg

Course Code: EPEG3035

Instructions: Attempt all the questions.

Semester: VI

Time: 03 hrs.

Max. Marks: 100

SECTION A

(5Q x 4M=20Marks)

S. No.		Marks	CO
Q 1	Justify that “Digitalization of Utilities is Enabler for Energy Transition”.	4	CO1
Q 2	Illustrate the suggested Data and data users in a power distribution ecosystem.	4	CO1
Q 3	Illustrate the technology challenges of Digitalization.	4	CO1
Q 4	Suggest the capabilities expected in a smart grid of the future.	4	CO2
Q 5	Illustrate the workflow of the Digitalization process.	4	CO2

SECTION B

(4Q x 10M= 40 Marks)

Q 6	Appraise the opportunities enabled by the Digitization of Power utilities.	10	CO1
Q 7	Suggest the solutions for the major protection issues to use intermittent Distributed Energy Resources.	10	CO2
Q 8	Suggest the architecture of a SCADA system suitable for Uttarakhand Power Corporation Ltd (Power Distribution Company)	10	CO3
Q 9	Discuss the Various levels of a typical SCADA system. OR Evaluate the Optimization of energy production and performance through data-driven analytics.	10	CO3

SECTION-C

(2Q x 20M=40 Marks)

Q 10	Appraise the Load management strategies for grid integration of intermittent renewable sources.	20	CO3
Q 11	Appraise the Concept of the digital twin and its application in renewable energy systems. OR Discuss the application of Blockchain technology for enhancing transparency and trust in renewable energy markets. .	20	CO4