

NETTUR TECHNICAL TRAINING FOUNDATION
DIPLOMA IN ELECTRICAL & ELECTRONICS – CP23
IV SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JULY 2023

Subject: Wind Energy
Subject Code: CP23405T

Total Time: 2 Hr.
Total Marks: 50

PART B

1.0 ANSWER ANY EIGHT OF THE FOLLOWING **2*8=16**

- 1.1 What are conventional and non-conventional energy sources?
- 1.2 Explain the mechanism of production of local winds.
- 1.3 Define Airfoil.
- 1.4 What are the variables of wind production?
- 1.5 What are the types of turbines based on site?
- 1.6 What is a wind turbine made of?
- 1.7 State the essential features of a probable site for a wind farm.
- 1.8 Which environmental characteristics affect wind behavior?
- 1.9 How long does a wind turbine work for?
- 1.10 Define Power Co-efficient.

2.0 ANSWER ANY SIX OF THE FOLLOWING **3*6=18**

- 2.1 What are the different causes of local winds?
- 2.2 What are the conversion losses available on wind energy conversion system?
- 2.3 Define: i. Cut-in speed ii. Cut-out speed iii. Yaw control
- 2.4 Sketch the diagram of a HAWT, and explain the function of its main components.
- 2.5 Why do some wind turbines have two and others three blades??
- 2.6 Derive the expression for power developed due to wind energy
- 2.7 How does a wind turbine produce electricity?
- 2.8 Describe the main considerations in selecting a site for wind generators.

3.0 ANSWER ANY FOUR OF THE FOLLOWING **4*4=16**

- 3.1 With a neat diagram, explain how wind energy can be converted into electrical energy.
- 3.2 Write the advantages & disadvantages of vertical axis wind turbine over horizontal type
- 3.3 Sketch the diagram of a Wind Turbine, and explain the functions of its main components.
- 3.4 Explain with a neat diagram the working of various types of wind generator
- 3.5 Discuss about different configurations of wind turbines and their advantage and disadvantages.
- 3.6 What are the factors determine the output from a wind energy converter?

