

**NETTUR TECHNICAL TRAINING FOUNDATION**  
**DIPLOMA IN ELECTRICAL & ELECTRONICS-CP23**  
**III SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JAN 2023**

**Subject: Electrical Machines-1**  
**Subject Code: CP23303T**

**Total Time: 2 Hr.**  
**Total Marks: 50 Marks**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING**

**2\*8=16**

- 1.1 What do you mean by the term Generator?
- 1.2 Name the different types of self-excited generators.
- 1.3 Write the formula of speed control of dc motor.
- 1.4 What is the purpose of commutator in DC generator?
- 1.5 Write down the EMF equation of a DC Generator
- 1.6 Name the different types of speed control methods in DC motor.
- 1.7 What do you understand by efficiency of DC machine?
- 1.8 Write the applications of DC generators
- 1.9 In which condition regenerative braking is used?
- 1.10 What do you understand by lap and wave winding?

**2.0 ANSWER ANY SIX OF THE FOLLOWING**

**3\*6=18**

- 2.1 What do you mean by static and dynamic emf?
- 2.2 Explain field control method of DC shunt motor.
- 2.3 Explain the various types of losses in DC motor.
- 2.4 Write any four differences between 3 point and 4 point starter.
- 2.5 Define Torque, Armature Torque and Shaft Torque of a motor.
- 2.6 Write down types of DC motor and explain series motor characteristics
- 2.7 Explain the various characteristic of DC generators.
- 2.8 Explain the working principle of DC generator with neat diagram.

**3.0 ANSWER ANY FOUR OF THE FOLLOWING**

**4\*4=16**

- 3.1 Explain the commutation process of DC generator with diagram.
- 3.2 Explain the construction of DC motor with neat diagram.
- 3.3 Explain the different braking methods in DC motors.
- 3.4 Explain armature control method of shunt motor.
- 3.5 With neat diagram briefly explain working of 3 point starter.
- 3.6 Define Armature Reaction. What are the ill effects of it?

