

THIRD SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND
ELECTRONICS ENGINEERING—OCTOBER, 2011

D. C. MACHINES

[Time : 3 hours

(Maximum marks : 100)

PART—A

- Marks
- I Answer the following questions in one or two sentences. Each question carries 2 marks.
1. What do you mean by ACSR conductor ?
 2. What is the function of commutator of a d.c. generator ?
 3. Define critical field resistance of a d.c. shunt generator.
 4. What are the protective systems used in the 3 point starter of a d.c. motor ?
 5. Define armature reaction. (5×2=10)

PART—B

- II Answer any *five* of the following. Each question carries 6 marks.
1. State the electrical and thermal properties of insulators.
 2. Define magnetic hysteresis and explain hysteresis loop.
 3. Describe with sketch classification of d.c. generators according to field excitation.
 4. State the function of compensating windings of a d.c. generator.
 5. Explain the construction and working of a permanent magnet d.c. motor.
 6. State and explain the losses in a d.c. motor.
 7. Explain cross magnetic effect of armature reaction in a d.c. generator. (5×6=30)

PART—C

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT—I

- III (a) State important application of insulators in the field of electrical engineering. 6
- (b) State important properties of carbon. 6
- (c) State the advantages and disadvantages of cold drawn and hard drawn copper conductor. 3

OR