



C09-EE-304

3242

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH / APRIL - 2019

DEEE - III SEMESTER EXAMINATION

D. C. MACHINES & BATTERIES

Time : 3 Hours]

[Total Marks : 80

PART - A

3×10=30

- Instructions :**
- (1) Answer **ALL** questions.
 - (2) Each question carries **THREE** marks.
 - (3) Answer should be brief and straight to the point.

- 1 State Flemings Right Hand rule with figure.
- 2 Draw the Schematic diagram of Separately Excited D.C. Generator also write the current and voltage equation.
- 3 Define Armature Reaction.
- 4 List the applications of D.C. generators.
- 5 Classify D.C. Motors.
- 6 Draw the power stage diagram of D.C. motor.
- 7 Explain the necessity of speed control of D.C. motors.
- 8 List the different methods of speed control of D.C. Series motor.
- 9 State the indications of fully charged battery.
- 10 List the Parts of a lead acid Battery.

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[Contd...

PART - B

10×5=50

- Instructions :**
- (1) Answer any **FIVE** questions.
 - (2) Each question carries **TEN** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11 Explain with neat figures the conversion of alternating Emf to D.C. with the help of Split rings.
- 12 (a) Write about Resistance Commutation with a legible sketches. 5
(b) Write about EMF Commutation with a legible sketches. 5
- 13 (a) What are the conditions to build up of voltage in a Self Excited Generator ?
(b) Explain O.C.C. of a separately excited D.C. generator with circuit diagram.
- 14 Write the voltage and current equations with circuit diagram for different types of D.C. Motors.
- 15 Explain the starring method of D.C. series motor using Drum control starter with a legible sketches.
- 16 (a) Write briefly about necessity of Starter to Start a D.C. Motor. 4
(b) Draw the Performance Characteristics of D.C. Series Motor. 6
- 17 (a) Explain with figure charging of batteries by Constant Current Method. 5
(b) Explain with figure charging of batteries by Constant Voltage Method. 5
- 18 (a) A conductor of length 0.5 m situated in and at right angles to a uniform Magnetic field of flux density 1.0 wb/m^2 . Find emf. Assuming V is 10 mtr/sec. 5
(b) Calculate the efficiencies for an accumulator which is charged in 8 hours by 30 A at an average p.d. of 2.2 V and discharges 24 A at an average p.d. of 1.9 V in 9 hours. 5