C14-EE-**302**

4244

BOARD DIPLOMA EXAMINATION,(C-14)

JUNE-2019

DEEE- THIRD SEMESTER EXAMINATION

D.C. MACHINES

Time: 3 Hours] [Max. Marks: 80

PART-A

10x3=30M

Instructions: 1) Answer **all** questions. Each question carries **three** marks.
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1) Compare LAP and WAVE windings in any three aspects.

2) List the various losses in a D.C Generator.

3) Classify D.C Generators based on its Excitation.

4) Define Armature reaction.

5) List the different methods of improving commutation.

6) Calculate the value of torque established by the armature of a 4 pole wave wounded motor having 774 conductors, 24mwb flux per pole, when the total armature current is 50A.

7) State Fleming's left hand rule.

8) List the various methods of speed control for D.C series motor.

9) State necessity of starter for D.C motors.

10) List different tests of D.C motors.

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions. Each question carries **ten** marks.
2) Answers should be comprehensive and the critertion for valuation is the content but not the length of answer.

11) Explain the Construction of a DC Generator with the help of neat diagram.

12) Deive the condition for maximum efficiency of a D.C Generator.

13) Explain the process of commutation of D.C generator with neat sketch.

14) (a) Derive the equations for demagnetising (AT_d) and cross magnetising (AT_c) ampere turns per pole.
(b) State any four conditions for parallel operation of D.C. Generators.

15) Derive the torque equation of a D.C Motor.

16) Draw and explain the electrical and mechanical characteristics of a D.C series motor.

17) Explain different methods of speed control for DC shunt motor.

18) Explain Swinburne's test on D.C shunt motor with a neat circuit diagram and state its merits and demerits.

* * *