4244

BOARD DIPLOMA EXAMINATION,(C-14)
MARCH /APRIL-2019
DEEE- THIRD SEMESTER EXAMINATION

D.C. MACHINES

Time: 3 Hours   Max.Marks:80

Instructions: 1) Answer all the questions and each question carries 3 marks
2) Answers should be brief and straight to the point and shall not exceed five simple sentences

PART-A

10x3=30M

1) State Flemming's right hand rule

2) Classify D.C generators based on excitation

3) Compare lap and wave windings in any three aspects

4) Define Critical field resistance of a DC shunt generator

5) List any three applications of D.C generators

6) List the various losss in a D.C motor

7) State the significane of back E.M.F in D.C Motor

8) State the necessity of starter for D.C Motors

9) List the methods of speed control for D.C shunt motor

10) State any three advantages of Swinburne's test

PART-B

5x10=50M

Instructions: 1) Answer any five questions and each question carries 10 marks.
2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.
3) Any missing data may be assumed as per standards.

11) Derive th E.M.F equation of a DC Generator?

12) a) A 4 pole D.C generator having a wave wound armarture conductors has 51 slots with each slot containing 20 conductors. Find the E.M.F generated when the machine is driven at 1500 rpm assuming flux per pole to be 7mwb   4M

   b) State the function of (a) commutator (b) Yoke (c) Armarture core in a   D.C machine?   6M

13) Explain the armarture reaction in a D.C generator with the help of a neat diagram.   10M

14) a) Explain the interpole method to improve the communication   6M
   b) State any four conditions for parallel operation of D.C generators.4M

15) a) Derive the torque equation of a D.C motor   7M
   b) List any three applications of DC series motor   3M

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

17) Explain the working of 3-point starter with a neat diagram.

18) Explain the method of conducting brake test on D.C shunt motor with a neat circuit diagram.

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