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Register No.:

October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. How voltage is build up at start even if field current is zero?
2. Mention any two methods to improve commutation.
3. Draw the speed torque characteristics of DC shunt motor.
4. Mention any two applications of DC series motor.
5. Draw simple sketches of core and shell type transformers.
6. What is 'V' connected transformer?
7. Write a note on off load tap changer.
8. What is the difference between cell and battery?

PART – B

9. Define Faraday's laws of electromagnetic induction.
10. Differentiate cumulative and differential compound generators.
11. What is the necessity of using starters?
12. Give a note on autotransformer.
13. Draw the Scott connected transformer winding.
14. What is the purpose of conducting acidity test in transformer oil?
15. List the methods of charging the battery and explain any one method.
16. What is back emf in DC motor.

PART – C

17. (a) With connection diagram, explain the load characteristics of DC shunt generator. Draw a typical load characteristics curve.

(Or)

(b) What is armature reaction? Explain any one method of compensation.

18. (a) Explain the speed control methods of DC shunt motor.

(Or)

(b) Explain the following characteristics of DC series motor: (i)Torque-current (ii)Speed-current (iii)Speed-torque.

19. (a) Draw and explain the phasor diagram of a single phase transformer delivering power to a capacitive load.

(Or)

(b) Explain how OC and SC tests are conducted in a transformer.

20. (a) Explain the operation of following with simple sketches: (i)Conservator (ii)Bucholz's relay.

(Or)

(b) Draw the connection diagram of ON load tap changer and explain its operation.

21. (a) Explain the chemical action and physical changes takes place in lead acid battery during charging.

(Or)

(b) Explain the various defects and their remedies of a lead acid battery.
