

April 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. List out the types of DC generator.
2. State Fleming's left hand rule.
3. Write the applications of any two DC motor.
4. What is regulation? Mention the condition for maximum efficiency in transformer.
5. What is called All day efficiency.
6. Mention any four types of connections in 3ϕ transformer.
7. List out the classification of cells.
8. Draw the NO-load characteristic of DC shunt generator.

PART – B

9. Briefly explain any one method of improving commutation.
10. Derive torque equation for DC motor.
11. Write briefly about the necessity of starter in DC motor.
12. Write briefly about the principle of operation of 1ϕ transformer.
13. Draw the phasor diagram for lagging power factor on load condition for 1ϕ transformer.
14. Mention the functions of conservator, breather and explosion vent in Bucholz relay.
15. Discuss about the indication of fully charged battery.

[Turn over.....

16. A 6 pole lap connected armature has 300 conductors and runs at 1000 rpm. The emf generated is 600 volts. Find the useful flux per pole.

PART – C

17. (a) Explain in detail about the principle of operation of DC generator.

(Or)

- (b) What is armature reaction? Discuss any two methods of compensating armature reaction.

18. (a) Explain about the construction of DC motor.

(Or)

- (b) Predetermine the efficiency of DC motor by Swinburne's test.

19. (a) Determine the equivalent circuit constants in 1 ϕ transformer.

(Or)

- (b) Explain about the principle of auto transformer in detail. Also mention its applications.

20. (a) Discuss about any three methods of cooling in transformer.

(Or)

- (b) Explain in detail about the measurement of earth resistance.

21. (a) Explain about the chemical action of Nickel-Cadmium cells during discharging and charging.

(Or)

- (b) Discuss about any two methods of charging of battery. Give any two maintenance tips.
