

CBSE Class 12 Electrical Technology 2019 - Set 311 - Compartment



Question Paper

Conducted by the Central Board of Secondary Education (CBSE)

Time Allowed: 2 Hours

Maximum Marks: 40

General Instructions

- (i) This question paper contains 28 questions in two sections.
- (ii) Section A: Attempt any ten questions from Questions 1–12 (1 mark each), any five from Questions 13–19 (2 marks each), and any five from Questions 20–26 (3 marks each).
- (iii) Section B: Attempt any one question from Questions 27 and 28 (5 marks each).

Section A

Attempt any ten questions :

1. No load current of a transformer

- (A) has small magnitude with high p.f. (B) has high magnitude with low p.f.
(C) has high magnitude with high p.f. (D) has small magnitude with low p.f.

2. In a transformer, which of the following windings has got more cross-sectional area ?

- (A) Primary winding (B) Secondary winding
(C) High voltage winding (D) Low voltage winding

3. Cross-section of the iron core of a transformer is approximately circular. This is done because

- (A) It is easy to assemble circular core (B) It is easy to prepare circular coil
(C) Electromagnetic forces tend to make coil circular (D) All of the above reasons

4. Iron losses in a d.c. motor are independent of variation in

- (A) load (B) speed
(C) voltage (D) speed and voltage

5. On a small load, if the field circuit of a d.c. shunt motor gets opened, then

- (A) motor will pick up very high speed (B) motor will slow down
(C) motor will stop (D) motor will continue to run normally

6. Losses which do not occur in transformers but do occur in rotating electrical machines are

- (A) Hysteresis and Eddy current losses (B) Friction and windage losses
(C) Copper losses (D) Magnetic losses

7. Rotor of induction motor runs always at

- (A) synchronous speed (B) less than synchronous speed
(C) more than synchronous speed (D) in opposite direction to magnetic field

8. Following 1-phase motor will run at high p.f. :

- (A) Capacitor start motor (B) Capacitor run motor
(C) Split phase motor (D) Shaded pole motor

9. Shaded pole motor does not possess

- (A) Commutator (B) Centrifugal switch
(C) Capacitor (D) All of the above

10. Torque developed by a single-phase induction motor while running is

- (A) Uniform (B) Pulsating
(C) Nil (D) None of the above

11. As compared to solder, the melting temperature of flux should be

- (A) more (B) less
(C) same (D) any temperature

12. As compared to melting temperature of the metal which is to be soldered, the melting temperature of the solder should be

- (A) more (B) same
(C) less (D) double

Attempt any five questions :

13. Draw the sketch of a single-phase transformer and label its parts.

14. Why is cooling done in transformer ? Write in brief.

15. What are the various applications of d.c. shunt motors ?

16. Write the names of various parts of d.c. motors.

17. What is the function of pole in d.c. motors ?

18. What is the function of capacitor in a single-phase induction motor ?

19. What is the function of flux in soldering ?

Attempt any five questions :

20. What is the difference between ordinary transformer and auto transformer ? Explain with the help of neat sketches.

21. What are the various methods of speed control of d.c. motors ? Describe any one method with the help of a sketch.

22. Draw circuit diagram of a 4-point starter used in d.c. motors and label its parts.

23. Draw a neat sketch of a d.c. shunt motor and write the function of each part.

24. Write the names of various starters used in 3-phase induction motors. These are used for which Horse Power motors ?

25. What are the various applications of different single-phase motors ?

26. Describe construction and working of universal motor.

Section B

Attempt any one question :

27. How is rotating magnetic field produced in 1-phase induction motor ? Explain with the help of sketch.

28. What are the various methods of soldering ? What are the various components of solder and their proportion ?

- End of Question Paper -