

CBSE Class 12 Electrical Technology 2019 - Set 311



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. A Transformer

- | | |
|--------------------------|------------------------------------|
| (A) Transforms frequency | (B) Transforms voltage |
| (C) Transforms current | (D) Transforms current and voltage |

2. Efficiency of a power transformer is of the order of

- | | |
|---------|----------|
| (A) 50% | (B) 75% |
| (C) 98% | (D) 100% |

3. In India, standard frequency of electric supply is

- | | |
|-----------|------------|
| (A) 60 Hz | (B) 50 Hz |
| (C) 25 Hz | (D) 100 Hz |

4. For a d.c. motor to drive a load which is almost nil for certain part of load cycle and peak value for short durations, we will select the

- | | |
|--------------------|------------------------------|
| (A) Shunt motor | (B) Series motor |
| (C) Compound motor | (D) Separately excited motor |

5. In the case of a d.c. motor, mechanical losses are primarily a function of

- | | |
|-------------|-----------------------|
| (A) Voltage | (B) Current |
| (C) Speed | (D) None of the above |

6. In Ward Leonard method, speed control in d.c. motor is obtained by the

- | | |
|--|--|
| (A) Change in field excitation of d.c. motor | (B) Change in armature current in the d.c. motor |
| (C) Change in armature voltage in d.c. motor | (D) Change in supply voltage |

7. For the same horse power of motor and load torque, slip of single-phase motor as compared to that of three-phase induction motor will be

- | | |
|----------|------------------|
| (A) Same | (B) Less |
| (C) More | (D) Not definite |

8. Torque of a single-phase induction motor at synchronous speed is

- | | |
|--------------|--------------|
| (A) Zero | (B) Positive |
| (C) Negative | (D) Multiple |

9. In split phase motor, auxiliary winding is of

- | | |
|--|---|
| (A) Thick wire placed at the top of slot | (B) Thin wire placed at the top of slot |
| (C) Thin wire placed at the bottom of slot | (D) Thick wire placed at the bottom of slot |

10. The following motor will operate on high p.f. :

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

11. Heating element of soldering iron is made of

- | | |
|------------|-----------------------|
| (A) Copper | (B) Steel |
| (C) Lead | (D) None of the above |

12. Soldering at high temperature with brass as solder is known as

- | | |
|--------------------|-----------------------|
| (A) Welding | (B) Brazing |
| (C) Electroplating | (D) None of the above |

Attempt any five questions :

13. What is meant by step-up and step-down transformer ?

14. What are the various applications of auto transformer ?

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

16. What is the use of yoke in d.c. motors ?

17. What is the use of brush in d.c. motors ?

18. What are various applications of universal motors ?

19. Why is soldering done ?

Attempt any five questions :

20. What are Voltage and Current transformers ? Explain their uses with sketches.

21. Draw circuit diagram of a 3-point starter and label its parts.

22. How is installation of a d.c. motor done ?

23. With the help of neat sketch, explain the armature control method of speed control of d.c. shunt motor.

24. Why are starters used to start the three-phase induction motor ?

25. What are the various methods of speed control of single-phase a.c. motors ? Explain them in brief.

26. How does a capacitor help in starting a single-phase induction motor ?

Section B

Attempt any one question :

27. What are the various applications of single-phase induction motors ? How can their direction of rotation be changed ? Explain with sketch.

28. What are the types of solders ? What is the use of flux in soldering ?

- End of Question Paper -