

# **CBSE – DEPARTMENT OF SKILL EDUCATION**

## **Electrical Technology (SUBJECT CODE819)**

### **Sample Question Paper**

#### **Class XII (Session 2019–2020)**

**Time: 3 Hours**

**Max. Marks: 60**

#### **General Instructions:**

- This Question Paper consists of two parts viz. Part A: Employability Skills and Part B: Subject Skills.*
- Part A: Employability Skills (10 Marks)**
  - Answer any 4 questions out of the given 6 questions of 1 mark each.*
  - Answer any 3 questions out of the given 5 questions of 2 marks each.*
- Part B: Subject Skills (50 Marks):**
  - Answer any 10 questions out of the given 12 questions of 1 mark each.*
  - Answer any 5 questions from the given 7 questions of 2 marks each.*
  - Answer any 5 questions from the given 7 questions of 3 marks each.*
  - Answer any 3 questions from the given 5 questions of 5 marks each.*
- This question paper contains 42 questions out of which 30 questions are to be answered.*
- All questions of a particular part/section must be attempted in the correct order.*
- The maximum time allowed is 3 hrs.*

### **PART A: EMPLOYABILITY SKILLS (10 MARKS)**

**Answer any 4 questions out of the given 6 questions of 1 mark each:**

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| 1. | Identify the following-<br>The process of creating a non –fiction text about current or recent news, items of general interest or specific topic is called<br>a)Writing skills b)Paragraph writing c)Article writing d)None of these | (1) |
| 2. | It contains icons for the most commonly used commands-<br>a)Menu bar b)Standard bar c)Formatting bar d)Title bar   | (1) |
| 3. | This personality disorder is marked by an overreliance on other people to meet one’s emotional and physical needs-<br>a)Dependent b) Obsessive c) Avoidant d)Borderline  | (1) |
| 4. | Who oversee green activities in their organization?<br>a) Energy auditors b) Wind energy engineers c) Solar energy engineers<br>d) Chief sustainability officers   | (1) |
| 5. | Define ‘Entrepreneurship’.   | (1) |

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| 6. | This is not the sources of motivation and inspiration-<br>a) Books b) Gossip c) Dreaming big d) Music | (1) |
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**Answer any 3 questions out of the given 5 questions of 2 marks each:**

|     |   |     |
|-----|---|-----|
| 7.  | Give two points difference between listening and hearing.             | (2) |
| 8.  | Write four steps to insert a text box in a slide.                     | (2) |
| 9.  | Tell two traits of each extraversion and agreeableness personality.   | (2) |
| 10. | List four green jobs in building and construction field.              | (2) |
| 11. | Give one example each of trading & services and also give its reason. | (2) |

## **PART B: SUBJECT SKILLS (50 MARKS)**

**Answer any 10 questions out of the given 12 questions:**

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| 12. | Quality factor is also known as _____<br>a) Voltage magnification<br>b) Current magnification<br>c) Resistance magnification<br>d) Impedance magnification   | (1) |
| 13. | Efficiency of a transformer is maximum at<br>a. Leading power factor<br>b. Lagging power factor<br>c. Unity power factor<br>d. None of these   | (1) |
| 14. | The starting torque of a capacitor start motor is<br>a) zero<br>b) low<br>c) same as rated torque<br>d) more than rated torque.  | (1) |
| 15. | What will happen if DC shunt motor is connected across AC supply?<br>a) Will run at normal speed<br>b) Will not run<br>c) Will Run at lower speed<br>d) Burn due to heat produced in the field winding | (1) |

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| <b>16.</b> | A good heating element should have<br>a) High resistivity and low melting point<br>b) Low resistivity and high melting point<br>c) High resistivity and high melting point<br>d) Low resistivity and low melting point | <b>(1)</b> |
| <b>17.</b> | RMS stands for _____<br>a) Root Mean Square<br>b) Root Mean Sum<br>c) Root Maximum sum<br>d) Root Minimum Sum  | <b>(1)</b> |
| <b>18.</b> | The efficiency of an induction motor is about<br>a)100%<br>b)80-90%<br>c)50-60%<br>d)Less than 50%   | <b>(1)</b> |
| <b>19.</b> | A transformer oil used in an electrical transformer must be free from _____<br>a) Gases<br>b) Odour<br>c) Sludge<br>d) Moisture  | <b>(1)</b> |
| <b>20.</b> | Speed of the universal motor is<br>a) Dependent on frequency of supply<br>b) Proportional to frequency of supply<br>b) Independent of frequency of supply<br>c) None of the above                                      | <b>(1)</b> |
| <b>21.</b> | The household energy meter is<br>a)An indicating instrument<br>b)A recording instrument<br>c)An integrating instrument<br>d)None of the above  | <b>(1)</b> |
| <b>22.</b> | Resistance in multimeter is measured using _____<br>a) constant current source<br>b) constant voltage source<br>c) variable current source<br>d) variable voltage source   | <b>(1)</b> |
| <b>23.</b> | The following class of fire occur in electrical equipment<br>a) Class-A fires  | <b>(1)</b> |

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|  | b) Class-B fires<br>c) Class-C fires<br>d) All of the above |  |
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**Answer any 5 questions out of the given 7 questions of 2 marks each:**

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| 24. | What is Q factor of RLC circuit? What is its significance?                                       | (2) |
| 25. | What are the precautions while installation of dc motors?  | (2) |
| 26. | What is an auto transformer?   |     |
| 27. | What are the steps to rescue a person from live wire?  | (2) |
| 28. | What is the difference between room cooler and desert cooler?                                    | (2) |
| 29. | What is reverse motor?   | (2) |
| 30. | What are Safety measures precautions from operational point of view of single phase transformer? | (2) |

**Answer any 5 questions out of the given 7 questions of 3 marks each:**

|     |   |     |
|-----|---|-----|
| 31. | Compare series motor, shunt motor and compound motors.                    | (3) |
| 32. | Explain the working principle of dynamometer type wattmeter.              | (3) |
| 33. | Explain the construction and operation of universal motor.                | (3) |
| 34. | Explain the operation of step-up and step-down transformer using diagram. | (3) |
| 35. | Write the steps of starting of 3 phase induction motor                    | (3) |
| 36. | Describe Schafer's Method of artificial respiration.                      | (3) |
| 37. | What are Common faults of electric mixer?                                 | (3) |

**Answer any 3 questions out of the given 5 questions of 5 marks each:**

|     |  |     |
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| 38. | Give construction and working details of room cooler. Explain it with a neat diagram.  | (5) |
| 39. | Explain the construction of digital multi meter and describe its operation in details. | (5) |

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| <b>40.</b> | Explain construction and working principle of immersion heater. Also explain its defects and steps to repair. | <b>(5)</b> |
| <b>41.</b> | Classify AC motors and explain them briefly.  | <b>(5)</b> |
| <b>42.</b> | Explain working of three phase induction motor in details using diagram.                                      | <b>(5)</b> |