

# CBSE | DEPARTMENT OF SKILL EDUCATION

## Electronics and Hardware (SUBJECT CODE 420)

### MARKING SCHEME FOR CLASS X (2024-2025)

Max. Time: 2 Hours

Max. Marks: 50

#### General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections – Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
  - i. This section has 05 questions.
  - ii. There is no negative marking.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
  - i. This section contains 16 questions.
  - ii. A candidate has to do 10 questions.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.

## SECTION A: OBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Q. 1</b>	<b>Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)</b>				
i.	d) Time	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 1</b>	<b>6</b>	<b>1</b>
ii.	a) Internal	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 2</b>	<b>54</b>	<b>1</b>
iii.	a) Online predators	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 3</b>	<b>82</b>	<b>1</b>
iv.	a) Turn on	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 3</b>	<b>69</b>	<b>1</b>
v.	c) patient	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 4</b>	<b>93</b>	<b>1</b>
vi.	b) 17	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	<b>Unit 5</b>	<b>108</b>	<b>1</b>
<b>Q. 2</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	c) Servomotor	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 1</b>	<b>27</b>	<b>1</b>
ii.	d) Auto Overload Protector	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 3</b>	<b>69</b>	<b>1</b>
iii.	d) Fuse	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 2</b>	<b>133</b>	<b>1</b>
iv.	c) In case of fire	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 5</b>	<b>136</b>	<b>1</b>

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
v.	b) Rotatory switch	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 3	113	1
vi.	a) Magnetron	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 4	132	1
<b>Q. 3</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	a) Miniature circuit breaker	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	16	1
ii.	d) Straight Wipe	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 3	73	1
iii.	d) Variable frequency controller	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 4	115	1
iv.	d) All of the above	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 5	148	1
v.	a) Hammer	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 2	56	1
vi.	d) Belt	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 5	148	1
<b>Q. 4</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	d) Switch	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	9	1

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
ii.	d) Pipe mixer	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 3	61	1
iii.	c) High voltage capacitor	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	26	1
iv.	b) 102	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 5	147	1
v.	b) Multimeter	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 2	41	1
vi.	d) All of the above	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 5	144	1
<b>Q. 5</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	b) False	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	27	1
ii.	a) True	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	24	1
iii.	a) True	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 4	117	1
iv.	a) True	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 1	15	1
v.	b) False	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 4	115	1

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
vi.	a) True	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	Unit 5	104	1

## SECTION B: SUBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Answer any 3 out of the given 5 questions on Employability Skills in 20 – 30 words each (2 x 3 = 6 marks)</b>					
Q. 6	Intrapersonal communication, Interpersonal communication, Small group communication , Public communication, Mass communication	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	Unit 1	07	2
Q. 7	Goal setting involves the development of an action plan designed in order to motivate and guide a person or group toward a goal, Goals are more deliberate than desires and momentary intentions. Therefore, setting goals means that a person has committed thought, emotion, and behavior towards attaining the goal	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	Unit 2	55	2
Q. 8	The performance of a computer can be increased by removing any extra files such as temporary files and images. We can use some disk cleaner software, which helps us clean up the unnecessary files.	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	Unit 3	79	2
Q. 9	<b>Misconception:</b> A myth, or a misconception, is a false belief or opinion about something. For example, if we think tall people run faster than short people, we have a misconception. It is not true. The truth is that short people can also run fast. <b>Reality:</b> Reality is the state of things as they actually exist, rather than as they may appear or might be imagined. In other words, reality includes everything that is and has been, whether or not it is observable or comprehensible	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	Unit 4	103	2
Q. 10	Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.	PSSCIVE BOOK CLASS X BOOK NAME- Employability Skills	Unit 5	108	2

**Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)**

<b>Q. 11</b>	Solder Iron, Solder Wire, Paste, Stand	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 2</b>	<b>52</b>	<b>2</b>
<b>Q. 12</b>	There are four types of fuse: <ul style="list-style-type: none"> <li>• Mini fuse,</li> <li>• SMD fuse</li> <li>• Cartridge fuse</li> <li>• Axial fuse</li> </ul>	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 1</b>	<b>13-14</b>	<b>2</b>
<b>Q. 13</b>	Used to Clean holes of strainer with a brush And to Connect the stator and armature winding using carbon brush	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 3</b>	<b>81</b>	<b>2</b>
<b>Q. 14</b>	magnetron act as a heart of microwave oven. It is the source of microwaves. Magnetron supplies constant and reliable energy in the form of microwave to the oven. In order to monitor and control the temperature, a control system is used. This control system regulates the multi-voltage regulation circuit. Microwave that is produced by the magnetron is guided by the waveguide towards the cooking chamber	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 4</b>	<b>117</b>	<b>2</b>
<b>Q. 15</b>	Red, yellow, Blue, Black	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 5</b>	<b>141</b>	<b>2</b>
<b>Q. 16</b>	Watch out for cords and wires, All levels of voltage should be considered equally dangerous. Even the voltage levels which cannot produce electrical shock should also not be ignored. We shall first confirm the circuit is dead before touching it for repairing maintenance and any others works, Avoid water at all times when working with electricity. Never touch or try repairing any electrical equipment or circuits with wet hands. It increases the electrical conductivity of the body for the flow of electric currents.	PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances	<b>Unit 5</b>	<b>138</b>	<b>2</b>

**Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)**

Q. 17	<p>Motor is an electrical machine, which includes stationary and rotatory parts. Armature, Stator, outer body cover are the main parts of an electric motor.</p>	<p>PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances</p>	Unit 1	22	4
Q. 18	<p>This heating element has its own thermostat. A thermostat basically switches the heating system on and off accordingly. It detects by sensing the air temperature, switches on when the heating of air temperature falls below the thermostat setting, and switches off when the set temperature has reached.</p>	<p>PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances</p>	Unit 3	101	4
Q. 19	<p>Remove the housing of microwave oven. High voltage capacitor with high rating diode Discharge the capacitor using nose plier. Carefully short the terminals of capacitor using nose pliers After discharging the capacitor, remove the wires connected to the capacitor terminals using nose pliers. Check the capacitor using continuity tester. If the capacitor is found to be shorted, replace the capacitor. Remove the bracket of the capacitor mounted on the body of microwave oven as shown in Fig. 4.30. Replace the capacitor with the same parameters, like capacitance value, voltage rating, Mount the capacitor on the body of microwave oven, connect the wire to the terminals of new capacitor</p>	<p>PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances</p>	Unit 4	129-130	4
Q. 20	<p>Hazardous system is designed to protect the health and safety of workers. Information must be provided about the safe handling, use, storage, and disposal of hazardous items.</p> <p>There are many contributing factors to creating or increasing the risks of hazards.</p> <p><b>People:</b> Action, or lack of action, can create workplace hazards. Knowledge and training is critical to avoid unsafe behaviours. Solid leadership that puts health and safety top-ofmind can help ensure safe work practices and procedures are followed.</p>	<p>PSSCIVE BOOK CLASS X BOOK NAME :- Field Technician – Other Home Appliances</p>	Unit 5	134	4

	<p><b>Equipment:</b> Tools and machines can be hazardous. Look for unsafe or unhealthy conditions, such as inadequate guarding or barriers; defective tools and equipment; incorrect tools and equipment for the job; or inadequate warning systems.</p> <p><b>Materials:</b> Some materials, such as hazardous chemicals, pose a hazard in and of themselves. In other cases, handling materials improperly or using the wrong material for the task can pose a hazard.</p> <p><b>Environment:</b> Some hazards are created by the work environment. Look for things like the condition of all work surfaces and walkways; overcrowding; poor ventilation; poor lighting; extreme temperatures or noise; or poor housekeeping.</p> <p><b>Process:</b> Process involves a combination of people, equipment, materials, and environment. It includes design, organization, pace, and type of work. By-products created by the process may be hazards, such as heat, noise, dust, vapours, fumes, and scrap materials.</p>				
<b>Q. 21</b>	<p><b>Class A</b> - Use to extinguish burning of paper, wood, cloth, plastic.</p> <p><b>Class B</b> - Use to extinguish burning of gasoline, grease, oil, petrol.</p> <p><b>Class C</b> - Use to extinguish burning of electrical cables, wires, equipment.</p> <p><b>Class D</b> - Use to extinguish burning of magnesium, sodium, and potassium</p>	<p>PSSCIVE BOOK CLASS X BOOK NAME: - Field Technician – Other Home Appliances</p>	<p><b>Unit 5</b></p>	<p><b>145-146</b></p>	<p><b>4</b></p>