

# CBSE | DEPARTMENT OF SKILL EDUCATION

## ELECTRONIC TECHNOLOGY (SUBJECT CODE 820)

### MARKING SCHEME FOR CLASS XII (SESSION 2022-2023)

Max. Time: 3 Hours

Max. Marks: 60

#### General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **24 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 (6 + 18 =) 24 questions, a candidate has to answer (6 + 11 =) 17 questions in the allotted (maximum) time of 3 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (30 MARKS):**
  - i. This section has 06 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 (30 MARKS):**
  - i. This section contains 18 questions.
  - ii. A candidate has to do 11 questions.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.

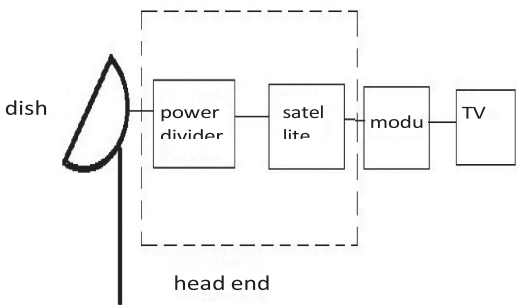
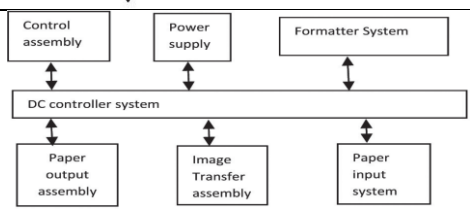
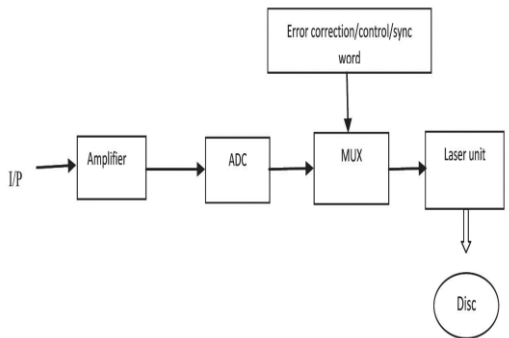
#### SECTION A: OBJECTIVE TYPE QUESTIONS

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.	true	CBSE Study Material	03	14-21	1
ii.	Ctrl+Z	CBSE Study Material	03	14-21	1
iii.	true	CBSE Study Material	04	42-61	1
iv.	He should be willing to take risk.	CBSE Study Material	04	42-61	1
v.	It increases individual energy and activity.	CBSE Study Material	02	09-14	1
vi.	Borderline personality disorder	CBSE Study Material	02	09-14	1
<b>Q. 2</b>	<b>Answer any 5 out of the given 7 questions (1 x 5 = 5 marks)</b>				
i.	Anticipation	CBSE Study Material	01	04	1
ii.	Safety	CBSE Study Material	01	04	1
iii.	Pathetic work or working conditions.	CBSE Study Material	01	05	1
iv.	C, BC, ABC	CBSE Study Material	01	07	1
v.	Safety Goggles	CBSE Study Material	01	10	1
vi.	Poor Maintenance	CBSE Study Material	01	15	1
vii.	Touching metal object with induced RF voltage causes RF Burn.	CBSE Study Material	01	08	1
<b>Q. 3</b>	<b>Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)</b>				
i.	Carbon Microphone	CBSE Study Material	02	19	1
ii.	Piezo Electric Microphone	CBSE Study Material	02	23	1
iii.	Capacitance microphone	CBSE Study Material	02	21	1

iv.	Decibel	CBSE Study Material	02	24	1
v.	Tweeter	CBSE Study Material	02	26	1
vi.	Piezo Electrical microphone	CBSE Study Material	02	23	1
vii.	For low frequency range	CBSE Study Material	02	26	1
Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Q. 4</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	Analog Recording	CBSE Study Material	03	29	1
ii.	690 MB	CBSE Study Material	03	42	1
iii.	Digital versatile disc	CBSE Study Material	03	29	1
iv.	1.2 mm	CBSE Study Material	03	42	1
v.	Supply reel	CBSE Study Material	03	35	1
vi.	Polycarbonate substrate	CBSE Study Material	03	39	1
<b>Q. 5</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	Amplitude Modulation	CBSE Study Material	04	62	1
ii.	Vestigial sideband modulation	CBSE Study Material	04	60	1
iii.	It is used to select specific range of frequency	CBSE Study Material	04	54	1
iv.	Phase alternate by line	CBSE Study Material	04	62	1
v.	Red, blue and green	CBSE Study Material	04	62	1
vi.	Low power consumption	CBSE Study Material	04	67	1
<b>Q. 6</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	magnetron	CBSE Study Material	05	77	1
ii.	Base unit	CBSE Study Material	05	79	1
iii.	Dual tone multiple frequency	CBSE Study Material	05	80	1
iv.	Laser printer	CBSE Study Material	05	85	1
v.	Heat	CBSE Study Material	05	88	1
vi.	Digital form	CBSE Study Material	05	89	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>					
<b>Q. 7</b>	An individual's motivation may come from within (intrinsic motivation) or be inspired by others or events (extrinsic motivation).	CBSE Study Material	02	21	2
<b>Q. 8</b>	1. Suspicious 2. Emotional and Impulsive 3 Anxious	CBSE Study Material	02	34	2
<b>Q. 9</b>	Click on the cell where you want to enter data. Insert picture.	CBSE Study Material	03	40	2
<b>Q. 10</b>	Environmental Barrier, Personal Barrier, Financial Barrier	CBSE Study Material	04	93	2
<b>Q. 11</b>	Business entrepreneur, Agricultural entrepreneur, women entrepreneur, Industrial entrepreneur, Technical entrepreneur	CBSE Study Material	04	83	2

<b>Answer any 3 out of the given 5 questions in 20 – 30 words each (2 x 3 = 6 marks)</b>					
<b>Q. 12</b>	We have to ensure in all business about the care of workers and all the persons involved in business for good health all the time. It provides employees lives and health. Occupational safety and health rules can decrease worker injury and illness.	CBSE Study Material	01	04	<b>2</b>
<b>Q. 13</b>	It works on the principle of varying the density of carbon particles in proportion to the variable pressure developed by sound wave.	CBSE Study Material	02	19	<b>2</b>
<b>Q. 14</b>	It is well known that the magnetic heads in a tape recorder or disk drive are the one of the important components of recording in a given media and playback of the signal from the recorded media. These heads have a magnetic core, which either guides a concentrated magnetic field for recording	CBSE Study Material	03	34	<b>2</b>
<b>Q. 15</b>	Block diagram of cable TV  	CBSE Study Material	04	63	<b>2</b>
<b>Q. 16</b>	 simplified printer block diagram	CBSE Study Material	05	83	<b>2</b>
<b>Answer any 2 out of the given 3 questions in 30– 50 words each (3 x 2 = 6 marks)</b>					
<b>Q. 17</b>		CBSE Study Material	03	43	<b>3</b>

	Block Diagram of CD/DVD Player				
<b>Q. 18</b>	1. It is among light category of microphones. 2. It has high impedance. 3. It has uniform frequency response.	CBSE Study Material	02	22	<b>3</b>
<b>Q. 19</b>	Faults of Cable TV <ul style="list-style-type: none"> <li>Weak signal causing poor resolution and poor audio quality.</li> <li>No sound but picture is received.</li> <li>No picture but sound is received.</li> <li>Noisy signal received.</li> <li>Poor color resolution.</li> </ul>	CBSE Study Material	04	65	<b>3</b>

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

<b>Q. 20</b>	<p><b>1. Electrical Safety Shoes</b></p>  <p>For safety, one should always wear and take care of electrical safety shoes whenever one works in the vicinity of energized equipment's. Unlike regular safety shoes, electrical safety shoes do not have any exposed metal parts. These are specially designed using non-conducting materials to provide insulation from electric shock.</p> <p><b>2. Rubber Gloves</b></p>  <p>Based on the wall thickness and maximum safe voltage rating, the rubber insulating gloves are classified in various categories.</p> <p><b>3. Retina Protection</b></p>	CBSE Study Material	01	09	<b>4</b>
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An electronics technician must protect his eyes for this, he needs to know: **When to wear eye protection**

Whenever you are doing something that could potentially damage your eyes, you must have eye protection on.

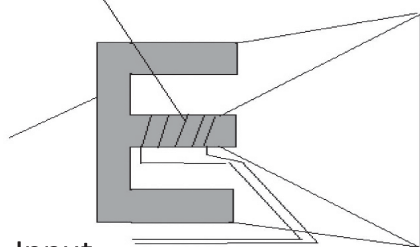
## 4. Hearing Protection



Working around noisy equipment, may cause damage to eardrums. Generally, this damage manifests itself slowly. Working at places with high vibration field could cause slow and consistent hearing deficit leading to complete or partial deafness. This can be minimized by wearing hearing protection.

**Q. 21**

**CONSTRUCTION AND WORKING PRINCIPLE OF MOVING COIL LOUDSPEAKER**



Input  
Moving coil loudspeaker is also known as dynamic loudspeaker. It is very commonly used loudspeaker. It consists of permanent magnet, voice coil and diaphragm and with supporting

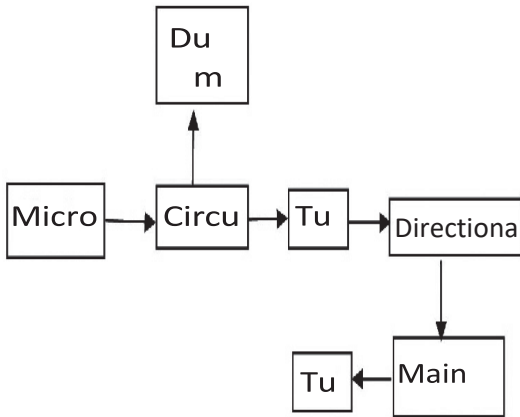
CBSE Study Material

02

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**4**

	arrangements. When an electrical audio signal is passes through the voice coil, it causes the vibration of coil due to the magnetic fields. The voice coil is attached with the diaphragm with some arrangement. Diaphragm produces the audible sound wave in accordance with the input electrical audio signal.				
<b>Q. 22</b>	<p>Failure of recorder/player refers to its inability to perform the required function. Failures may be partial of required function or complete failure. A partial failure may be caused by open or short circuit failure in capacitors or in potentiometers. A gradual failure may happen because of poor design, production deficiency and improper storage. Some of the causes of failures are listed below:</p> <ul style="list-style-type: none"> <li>•Wrong choice of components.</li> <li>•Excessive heat because of lack of cooling.</li> <li>•Excessive continuous use.</li> <li>•Sub-standard manufacturing equipment's and tools.</li> <li>•Insufficient testing and inspection.</li> <li>•Improper packaging.</li> <li>•Excessive vibration in transport.</li> <li>•Fluctuation in main supply.</li> <li>•Poor preventive maintenance.</li> </ul>	CBSE Study Material		<b>69</b>	<b>4</b>

<b>Q. 23</b>	<p>Block diagram of Microwave Oven</p>  <pre> graph LR     Micro --&gt; Circu     Circu --&gt; Tu1[Tu]     Tu1 --&gt; Directiona     Directiona --&gt; Main     Main --&gt; Tu2[Tu]     Tu2 --&gt; Du_m[Du m] </pre> <p><a href="#">Safety Guidelines and Troubleshooting</a></p> <p>The following helpful guidelines can prevent you from any fatal shock and also will prevent any form of damage to the device:</p> <p>Always use rubber shoes to break completion of current path.</p> <ul style="list-style-type: none"> <li>• If soldering is required inside the circuit board, first discharge the capacitor with appropriate load resistance.</li> <li>• Use testing processes always in unplugged state.</li> <li>• Always troubleshooting work will be done when you feel free from tiredness or fatigue.</li> <li>• Do not take short-cut for repairing of the device.</li> <li>• Always use high quality repairing tools.</li> <li>• Use proper place for any type of repairing purpose.</li> <li>• A few components of dead microwave can be used in any other device such as interlock switches, magnetrons etc.</li> </ul> <p>While removing some circuit board, use insulating material.</p>	CBSE Study Material	05	8	<b>4</b>
<b>Q. 24</b>	<p>Failure of recorder/player refers to its inability to perform the required function. Failures may be partial of required function or complete failure. A partial failure may be caused by open or short circuit failure in capacitors or in potentiometers. A gradual failure may happen because of poor design, production deficiency and improper storage. Some of the causes of failures</p>	CBSE Study Material	03	46	<b>4</b>

	<p>are listed below:</p> <ul style="list-style-type: none"> <li>• Wrong choice of components.</li> <li>• Excessive heat because of lack of cooling.</li> <li>• Excessive continuous use.</li> <li>• Sub-standard manufacturing equipment's and tools.</li> <li>• Insufficient testing and inspection.</li> <li>• Improper packaging.</li> <li>• Excessive vibration in transport.</li> <li>• Fluctuation in main supply.</li> <li>• Poor preventive maintenance.</li> <li>• Ageing of equipment.</li> </ul>				
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