

CBSE|DEPARTMENT OF SKILL EDUCATION

ELECTRONICS AND HARDWARE-(SUBJECT CODE - 420)

Blue-print for Sample Question Paper for Class IX (Session 2024-2025)

Max.Time:2 Hours

Max.Marks:50

PART A - EMPLOYABILITY SKILLS (10 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARK EACH	
1	Communication Skills - I	1	1	2
2	Self-Management Skills - I	1	1	3
3	ICT Skills - I	2	1	2
4	Entrepreneurial Skills-I	1	1	2
5	Green Skills-I	1	1	2
TOTAL QUESTION		6	5	11
NO. OF QUESTIONS TO BE ANSWERED		Any 4	Any 3	7
TOTAL MARKS		1X4=4	2X3=6	10 MARKS

PART B - SUBJECT SPECIFIC SKILLS (40 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANS.TYPE QUES.-I	DESCRIPTIVE/LONG ANS.TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	4 MARKS EACH	
1	Basics of Electrical and Electronics	4	1	1	6
2	Electrical and Electronics Components	5	1	1	8
3	Tools and Equipments	4	1	1	6
4	Installing a RO Water Purifier	4	1	1	6
5	Repair and Maintenance of Water Purifier	3	1	1	5
6	Maintain Health and Safety	4	1	-	5
TOTAL QUESTIONS		24	6	5	35
NO. OF QUESTIONS TO BE ANSWERED		20	4	3	27
TOTAL		1 X 20 = 20	2 X 4 = 8	4 X 3 = 12	40 MARKS

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Max.Time:2 Hours

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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. **SECTIONB –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.1 Answer any 4 out of the given 6 questions on Employability skills (1X4=4 marks)		
i.	How do you receive information on phone? (a) Listening (b) Speaking (c) Reading (d) Writing	1
ii.	I did not get enough marks to choose the Science stream. My life is ruined. This is an example of- (a) Positive thinking (b) Negative thinking (c) Hardwork (d) All of the above	1
iii.	What does GPS stand for? (a) Global Positioning System (b) Global Payment System (c) Global Program System (d) Global Pointing System	1
iv.	What is the aim of entrepreneurship? (a) Earn a profit (b) Solve customers' need innovatively (c) Both of the above (d) None of the above	1
v	Which one of the following shortcut key is used to UNDO? Tick mark the correct answer. (a) Ctrl + C (b) Ctrl + Z (c) Ctrl + V (d) Ctrl + X	1
vi	Which of the following is an example of renewable resources? (a) Coal (b) Solar Energy (c) CNG (d) Petroleum	1
Q.2 Answer any 5 out of the given 6 questions (1X5=5 marks)		
i.are materials whose conductivity is between conductors and insulators. (a) Conductor (b) Insulator (c) Semiconductor (d) Both A and B	1
ii.	Free electrons tend to move through conductors with some degree of friction, or opposition to motion. This opposition to motion is called – (a) Current (b) Voltage (c) Resistance (d) EMF	1
iii. instrument is used as a measuring instrument for insulation resistance tester. (a) Megger meter (b) Multimeter (c) Ammeter (d) Voltmeter	1

iv.	Which liquid is known as universal solvent (a) Ethanol (b) Water (c) HCL (d) kerosene	1
v.	Which of the following tools is used for making holes on the wooden and wall? (a) Screwdriver (b) Drill machine (c) Plier (d) Wrench	1
vi.	Which of the following is not step of maintenance of RO Water Purifier? (a) Check TDS of Water (b) Check valves (c) Clean and Sanitize RO System (d) Draining of waste water	1
Q.3 Answer any 5 out of the given 6 questions (1X5=5 marks)		
i.	The material in which the electrons are loosely held, can move very easily. These are called – (a) Insulator (b) Semiconductor (c) Conductor (d) Superconductor	1
ii.is used to make connection between neon bulb and metallic cap screw. (a) Metallic Cap Screw and Clip (b) Element (Metallic Spring) (c) Neon Bulb (d) All of the above	1
iii.	Full form of TDS (a) Total dissipated substance (b) Total dissolved solid (c) Total dissolved substance (d) Total dissipated solid	1
iv.	Which hand tool is used to convert the metal into thin sheet (malleable)? (a) Screw driver (b) Hammer (c) Wrench (d) Spanner	1
v.	when impurity atoms are added in the pure (intrinsic) form of semiconductor, then that semiconductor is called as - (a) Intrinsic (b) Extrinsic (c) Pure (d) None of the above	1
vi.	Two terminals semiconductor device is (a) Diode (b) Triode (c) Transistor (d) Integrated circuit	1
Q.4 Answer any 5 out of the given 6 questions (1X5=5 marks)		
i.	In a capacitor, energy is stored in the form of – (a) Magnetic field (b) Electric field (c) Both A and B (d) None of the above	1

ii.	Amount of work in one second is called as..... (a) Power (b) Current (c) Voltage (d) Charge	1
iii.	Which of the following meter is used for insulation resistance testing. (a) Ammeter (b) Voltmeter (c) Wattmeter (d) Megger meter	1
iv.	The water is passed into a closed reservoir contain ing disinfectants such as- (a) Oxygen (b) Chlorine (c) Nitrogen (d) Bromine	1
v.	If TDS is 80-150 ppm, then water quality is – (a) Very soft (Ideal for drinking) (b) Soft (might be used for drinking) (c) Hard (use RO purifier) (d) Very hard (use RO + UV purifier)	1
vi.	Which of the following tools is used for cutting bending of wire? (a) Screwdriver (b) Soldering iron (c) Plier (d) Wrench	1
Q.5 Answer any 5 out of the given 6 questions (1X5=5 marks)		
i.	Amount of charge flowing through a point in one second is called as..... (a) Voltage (b) Current (c) Power (d) Charge	1
ii.	Which of the following is a semiconductors material? (a) Silicon (b) Germanium (c) Both A and B (d) None of these	1
iii.	A screw is made up of ____ wrapped around a post or rod. (a) treads (b) springs (c) threads (d) strings	1
iv.	RO membranes are made of (a) plastic (b) Cotton (c) Silk (d) Polymer	1
v.	An RO system has different types of valves, this are – (a) Auto-shut-off valve (ASV) (b) check valve (CV). (c) Both A and B (d) None of the above	1

vi.	Handle of a tool must be made up of material. (a) Conductor (b) Insulator (c) Semiconductor (d) All of the above	1
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SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)
Answer each question in 20–30 words.

Q.6	Write the advantages of verbal communication.	2
Q.7	What is an Application or App?	2
Q.8	List any 02 self-management skills.	2
Q.9	What are the Characteristics of Entrepreneurship?	2
Q.10	What do you mean by exhaustible Resources?	2

Answer any 4 out of the given 6 questions in 20–30 words each (2 x 3 = 6 marks)

Q.11	What is active components? Give example.	2
Q.12	What is diode?	2
Q.13	Why water treatment is necessary?	2
Q.14	Write the function of a neon bulb in line tester?	2
Q.15	Give two reason for low pressure from water outlet tap/faucet	2
Q.16	Write two precautions must take during use of drill machine.	2

Answer any 3 out of the given 5 questions in 50–80 words each (4x3=12 marks)

Q.17	What is TDS? Give some reason for high TDS in output water. Also write the solution for the each problem.	2+2
Q.18	What is Gravity Based Water Purifiers? Write few advantages of using Gravity Based Water Purifiers.	4
Q.19	Write short note on Multi meter.	4
Q.20	What is Light Emitting Diode?	4
Q.21	State Kirchhoff's Voltage Law (KVL)?	4