THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B.Voc/M.Voc	**Semester**	1st	
Course name / Module	Construction Electrician - I		
Course code	ELE1101		
Date			
Name of the Student		**Reg. No.**	

INSTRUCTIONS

- Maximum Marks: **20**
- Duration of Examination: **01 Hour**
- Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark) **05×1 = 05**

1. Generally, the switches and sockets are made of which material for the electrical wiring?
   a) PVC b) Brass
   c) Bakelite d) Steel
2. Which side of 3-pin plug top is used for phase/live wire in electrical installation generally?
   a) Left Side b) Right Side
   c) Middle d) None of these
3. SWG stands for_____ in the electrical wiring.
   a) Standard Watt Gauge b) Standard Wire Gauge
   c) Single Wire Gauge d) None of these
4. Which switch is used for controlling a lamp from three places with two 2-way Switches?
   a) Intermediate Switch b) Push Button Switch
   c) One way Switch d) None of these
5. _____ current will heat the cable and damage the insulation and may result in short circuit and fire.
   a) Higher b) Lower
   c) Zero d) None of these

2. Section B (03 short answer type questions, each question carries 02 marks) **03×02 = 06**

1. Differentiate between wire and cable for electrical wiring?
2. Explain the concealed and unconcealed conduit electrical wiring.
3. Describe the wire stripper and cable stripper tool.

3. Section C (03 long type questions, each question carries 03 marks) **03×03 = 09**

1. Explain the double pole single throw switch and double pole double throw switch with symbol.
2. What are guidelines for mounting levels of the accessories and cables as recommended in BIS and NEC.
3. Describe electrical socket and its any 6 types in detail.

ANSWER KEY

School of Electrical Skills

THEORY 1st - IN-SEM EXAMINATION		
SESSION: 2022-23(SUMMER SEMESTER)		
B.Voc/M.Voc	**Semester**	1st
Course name / Module	Construction Electrician - I	
Course code	ELE1101	

INSTRUCTIONS

- Maximum Marks: **20**
- Duration of Examination: **01 Hour**
- Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark)	**05×1 = 05**

1. (c) Bakelite
2. (b) Right Side
3. (b) Standard Wire Gauge
4. (a) Intermediate Switch
5. (a) Higher

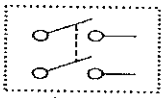
2. Section B (03 short answer type questions, each question carries 02 marks)	**03×02 = 06**

1. **Wires:** In house wiring, generally we use poly vinyl chloride wire. PVC coating on copper conductor wires. so it has many advantages as follows.
   (a) High dielectric strength
   (b) High tensile strength
   (c) More defense against moisture
   (d) High life
   Widely used Long Life Durable against water, heat, oil, UV light
   Cables: A power cable is an assembly of two or more electrical conductors, usually held together with an overall sheath. The assembly is used for transmission of electrical power. Power cables may be installed as permanent wiring within buildings, buried in the ground. Flexible power cables are used for portable devices, mobile tools and machinery.
   It is available in different sizes according to its no. of core wires in it.
   1. PVC cable 2C, 1.5 Sq. mm.
   2. PVC cable 3C, 1.5 Sq. mm.
   3. PVC cable 3C, 2.5 Sq. mm.
   4. PVC cable 5C, 2.5 Sq. mm.

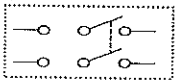
   And so on.
2. **Conduit Wiring:** There are two types of conduit wiring according to pipe installation:
   Surface Conduit Wiring When GI or PVC conduits are installed on walls or roof; it is known as surface conduit wiring. The conduits are attached to the walls with a 2-hole strap and base clip at regular distances. Electrical wires are laid inside the conduits.
   Concealed Conduit Wiring When the conduits are hidden inside the wall slots or chiseled brick wall, it is called concealed conduit wiring. Electrical wires are laid inside the conduits. This is popular since it is stronger and more aesthetically appealing.
3. **Hand Tools:**
   Wire Stripper
   A **wire stripper** is a small, hand-held device used to strip the electrical insulation from electric wires.
   Cable Stripper
   A **cable stripper** is a small, hand-held device used to strip outer most electrical insulation from electric cables.

3. Section C (03 long type questions, each question carries 03 marks)	**03×03 = 09**

1. **Double Pole Single Throw Switch (DPST):**
   This switch consists of four terminals, two input contacts and two output contacts.
   - It behaves like a two separate SPST configurations, operating at the same time.
   - It has only one ON position, but it can actuate the two contacts simultaneously, such that each input contact will be connected to its corresponding output contact.
   - In OFF position both switches are at open state.
   - This type of switches is used for controlling two different circuits at a time.


Symbol

Double Pole Double Throw Switch (DPST):
This is a dual ON/OFF switch consisting of two ON positions.
- It has six terminals, two are input contacts and remaining four are the output contacts.
- It behaves like a two separate SPDT configuration, operating at the same time.
- Two input contacts are connected to the one set of output contacts in one position and in another position, input contacts are connected to the other set of output contacts.


Symbol

2. **Mounting levels of the accessories and cables as recommended in B I S and NEC:**
   - Height of the main and branch distribution boards not be more than 2 m from the floor level. A front clearance of 1 m should also be provided.
   - All the lighting fittings shall be at a height of not less than 2.25 m from the floor.
   - A switch shall not be installed at any height up to 1.3 m above the floor level.
   - Socket outlets shall be installed either 0.25 or 1.3 m above the floor as desired.
   - The clearance between the bottom point of the ceiling fan and the floor shall be not less than 2.4 m. The minimum clearance between the ceiling and the plane of the blades of the fan shall not be less than 300 mm.
   - The cables shall be run at any desired height from the ground level, and while passing through floors in the case of PVC casing and capping and T R S wiring, it shall be carried in heavy gauge conduit.

3. **Plug and Sockets:**
   AC power plugs and sockets connect electric equipment to the alternating current power supply in buildings and at other sites. Electrical plugs and sockets differ from one another in voltage and current rating, shape, size, and connector type. Different standard systems of plugs and sockets are used around the world.
   There are currently many types of electrical outlet plugs in use today, each of which has been assigned a letter by the US Department of Commerce International Trade Administration (ITA), starting with A and moving through the alphabet. These letters are completely arbitrary: they don't actually mandate anything.

Type A
- It is mainly used in the USA, Canada, Mexico & Japan.
- 2 pins
- not grounded
- 15 A
- almost always 100 – 127 V
- socket compatible with plug type A

Type B
- It is mainly used in the USA, Canada, Mexico & Japan.
- 3 pins
- grounded
- 15 A
- almost always 100 – 127 V
- socket compatible with plug types A & B

Type C
- It is commonly used in Europe, South America & Asia.
- 2 pins
- not grounded
- 2.5 A
- almost always 220 – 240 V
- socket compatible with plug type C

Type D
- It is mainly used in India.
- 3 pins
- grounded
- 5 A
- 220 – 240 V
- socket compatible with plug type D
- (partial and unsafe compatibility with C, E & F)

Type E
- It is primarily used in France, Belgium, Poland,
- Slovakia & Czechia.
- 2 pins
- grounded
- 16 A
- 220 – 240 V
- socket compatible with plug types C, E & F

Type F
- It is used almost everywhere in Europe & Russia, except
- for the UK & Ireland.
- 2 pins
- grounded
- 16 A
- 220 – 240 V
- socket compatible with plug types C, E & F

ANSWER SHEET

School of Electrical School

THEORY 1st - IN-SEM EXAMINATION		
SESSION: 2022-23(SUMMER SEMESTER)		
B.Voc	**Semester**	1st
Course name / Module	Solar Photovoltaic Technologies	
Course code	RET1103	

1. Section A (05 objective type questions, each question carries 01 mark)	**05×1 = 05**

1. Solar Photovoltaic cells convert solar energy directly into: (a) Chemical energy
2. A module is a: (c) Series-parallel arrangement of solar cells
3. Solar energy is a source of: (a) Renewable energy
4. If a solar PV cell produces 0.6 V, then five PV cells connected in series will produce: (a) 3.0 V
5. Full form of SPD: (b) Surge protection devices

2. Section B (03 short answer type questions, each question carries 02 marks)	**03×02 = 06**

Q.1. How solar cells are interconnected in solar modules?

Ans.- In solar pv modules solar cells are interconnected in series combinatios.

Q.2. What is renewable energy sources?

Ans.- A sources of energy which are refilled as they are consumed.

Ex- solar,wind,tidal,etc.

Q.3. What are the advantages of solar enery?

Ans.- It is renewable energy; Low maintenance; It's ecofriendly; Energy Independence

3. Section C (03 long type questions, each question carries 03 marks)	**03×03 = 09**

Q.1. What are the advantages and diadvantages of on-grid solar PV system?

Ans: Advantages –

1. Huge reduction in electricity bills
2. Easy maintenance
3. Better ROI.
4. Ecofriendly

Disadvantages –

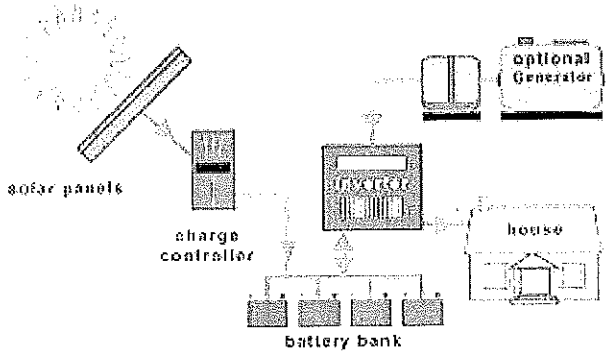
1 High cost
2 Large area installation
3 Depends on weather conditions
4 They can't produce electricity at night ti

Q.2. Write short note on solar PV lantern.

Ans.- A solar pv lantern is an example of a very simple pv based system that is used for lightining during darkness.It consists a small solar pv panel,charge controller,battery,cfl,etc.

Q.3. With neat diagram explain the concept of stand-alone PV system?

Ans.- Off-grid systems work independently of the grid but have batteries which can store the solar power generated by the system. The system usually consists of solar panels, battery, charge controller, grid box, inverter, mounting structure and balance of systems.



THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B. Voc.	**Semester**	1st	
Course name	Solar Photovoltaic Technologies		
Course code	RET1103		
Date			
Name of the Student		**Reg. No.**	

INSTRUCTIONS
• Maximum Marks: **20**
• Duration of Examination: **01 Hour**
• Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark)	**05×1 = 05**

1. Solar Photovoltaic cells convert solar energy directly into:
   (a) Chemical energy (b) Biogas (c) Electricity (d) Geothermal energy
2. A module is a:
   (a) Series-arrangement of solar cells (b) Parallel arrangement of solar cells
   (c) Series-parallel arrangement of solar cells (d) None of the above
3. Solar energy is a source of:
   (a) Renewable energy (b) Non renewable energy
   (c) both (a) and (b) (d) None of these
4. If a solar PV cell produces 0.6 V, then five PV cells connected in series will produce:
   (a) 3.0 V (b) 0.6 V (c) 2.1 V (d) 1.0 V
5. Full form of SPD:
   (a) Search protection devices (b) Surge protection devices
   (c) Search protect devices (d) Surge protect devices

2. Section B (03 short answer type questions, each question carries 02 marks)	**03×02 = 06**

Q.1. How solar cells are interconnected in solar modules?
Q.2. What is renewable energy sources?
Q.3. List the advantages of solar energy.

3. Section C (03 long type questions, each question carries 03 marks)	**03×03 = 09**

Q.1. What are the advantages and diadvantages of on-grid solar PV system?
Q.2. Write short note on solar PV lantern.
Q.3. Explain the concept of stand-alone PV system with neat diagram.

THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B.Voc	**ELE/RET**	**Semester**	1st
Course name / Module	Renewable Energy Technology and their Applications		
Course code	RET 1105		
Date			
Name of the Student		**Reg. No.**	

INSTRUCTIONS

- Maximum Marks: **20**
- Duration of Examination: **01 Hour**
- Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark) **05×1 = 05**

1. Which parameter is used as an index for the standard of living of the people of a country?
   (i) Industrial production (ii) Number of vehicles per house
   (iii) Per capita energy consumption (iv) Population density
2. 1 unit of electricity equal to:
   (i) 1 N-m (ii) 4.182 J (iii) 3600 kJ (iv) 1 kWh
3. Which of the following is a renewable source of energy?
   (i) Coal (ii) Solar (iii) Natural gas (iv) Petroleum
4. Direct Solar energy is used for
   (i) Water heating (ii) Distillation (iii) Drying (iv) All of the above
5. Which of the following energy has the greatest potential among all the sources of renewable energy?
   (i) Solar energy (ii) Wind Energy (iii) Thermal energy (iv) Hydro-electrical energy

2. Section B (03 short answer type questions, each question carries 02 marks) **03×02 = 06**

1. What is meant by renewable energy sources?
2. Write down the advantages of solar energy ?
3. Define Energy.

3. Section C (03 long type questions, each question carries 03 marks) **03×03 = 09**

1. Calculate the electricity bill amount for a month of September if the following devices are used as specified, given rate of electricity is rupees 3.50 per unit.
   a) 4 bulbs of 40 watts for 7 hours b) 3 tube lights of 50 watts for 6 hours.?
2. What is meant by Wind energy? Write its advantages and disadvantages.
3. Write the key benefits of renewable energy for people and the planet

Answer Sheet			
THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B.Voc	**ELE/RET**	**Semester**	1st
Course name / Module	Renewable Energy Technology and their Applications		
Course code	RET 1105		

1. Section A (05 objective type questions, each question carries 01 mark)	**05×1 = 05**

1. Which parameter is used as an index for the standard of living of the people of a country?
   (iii) Per capita energy consumption
2. 1 unit of electricity equal to: (iv) 1 kWh
3. Which of the following is a renewable source of energy? (ii) Solar
4. Direct Solar energy is used for: (iv) All of the above
5. Which of the following energy has the greatest potential among all the sources of renewable energy?
   (i) Solar energy

2. Section B (03 short answer type questions, each question carries 02 marks)	**03×02 = 06**

1. What is meant by renewable energy sources?

Ans: Renewable energy is energy derived from natural sources that are replenished at a higher rate than they are consumed. Sunlight and wind, for example, are such sources that are constantly being replenished. Renewable energy sources are plentiful and all around us.

2. Write down the advantages of solar energy ?

Ans: It is a natural source and free

- It is available in plenty
- It is non-polluting
- It does not emit any green house gases.
- Reduces Electricity Bills
- It doesn't result in the destruction of forests and eco-systems that occurs with most fossil fuel operations

3. Define Energy.

Ans: The energy may be defined as **the capacity of a body to do work.** – The SI unit of energy is joule (J). or 1 kJ = 1000 J. Forms of energy : The various forms include potential energy, kinetic energy, heat energy, chemical energy, and light energy.

3. Section C (03 long type questions, each question carries 03 marks)	**03×03 = 09**

1. Calculate the electricity bill amount for a month of September if the following devices are used as specified, given rate of electricity is rupees 3.50 per unit.
   a) 4 bulbs of 40 watts for 7 hours b) 3 tube lights of 50 watts for 6 hours.?

Ans: To calculate your electric bill, you'll need to figure the energy usage of each of the appliances and electronic devices in your home.

Once you have your data, calculate the cost of use with this formula:

a. Multiply the device's wattage by the number of hours the appliance is used per day
b. Divide by 1000
c. Multiply by your kWh rate

2. What is meant by Wind energy? Write its advantages and disadvantages.

Ans: Wind power is a clean and renewable energy source.

Wind turbines harness energy from the wind using mechanical power to spin a generator and create electricity. Not only is wind an abundant and inexhaustible resource, but it also provides electricity without burning any fuel or polluting the air.

ADVANTAGES

- It is environment friendly
- Wind Energy is renewable source of energy.
- Energy is generated without polluting environment.
- Windmill generators don't emit any flue gases.
- In remote areas, wind turbines can be used as great resource to generate energy.
- Land around wind turbines can be used for other uses, e.g. Farming.
- It is natural source and free.

DISADVANTAGES

- High investment requirement
- Wind speed is not uniform all the time which affects power generated
- Requires large open areas for setting up wind farms.
- Noise pollution problem due to wind mills.
- The places, where wind power set-up is situated, are away from the places where demand of electricity. Transmission from such places increases cost of electricity.
- The average efficiency of wind turbine is very less as compared to fossil fuel power plants.
- It can be a affect to wildlife. Birds do get killed or injured when they fly into turbines.
- Maintenance cost of wind turbines is high as they have mechanical parts which undergo wear and tear over the time.

3. Write the key benefits of renewable energy for people and the planet

Ans: Key benefits of renewable energy for people and the planet

- Renewable energy emits no or low greenhouse gases. That's good for the climate.
- Renewable energy emits no or low air pollutants. That's better for our health.
- Renewable energy comes with low costs. That's good for keeping energy prices at affordable levels.
- Renewable energy creates jobs. That's good for the local community.
- Renewable energy makes the energy system resilient. That's important to prevent power shortages.
- Renewable energy is accessible to all. That's good for development.

THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B.Voc	**Semester**	1st	
Course name	Electrical Safety & Measurement		
Course code	ELE 1106		
Date			
Name of the Student		**Reg. No.**	

INSTRUCTIONS

- Maximum Marks: **20**
- Duration of Examination: **01 Hour**
- Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark) **05×1 = 05**

1. What is your first action when examining the condition of patients?
   (a) check the breathing (b) check the insurance (c) check the external injury (d) all of the above
2. Unit of Energy is:
   (a) KWH (b) Ohm (c) voltage (d) all of these
3. Voltage of any circuit can be measured:
   (a) in series (b) in parallel (c) either series or parallel (d) none of these
4. How many compression and breathe should you do for each cycle of CPR?
   (a) 30compressions,2breathe (b) 20compressions,4breathe
   (c) 10compressions,5breathe (d) 30compressions,8 breathe
5. Used appliance, if
   (a) clean (b) working properly (c) wiring condition is good (d) all of these

2. Section B (03 short answer type questions, each question carries 02 marks) **03×02 = 06**

1. List the advantages of 5S.
2. Write down the steps of safely working with electrical equipment.
3. What is Electrical measurements?

3. Section C (03 long type questions, each question carries 03 marks) **03×03 = 09**

1. Write down the importance of personal protective equipment's.
2. Brief the different types of accidents.
3. Write and explain the steps of 5S.

Answers Key

Course Code: ELE1106 Course Name: Electrical Safety & Measurement
School of Electrical Skills, Session: 2022-23 (Summer Semester)
B. Voc. Program, I Semester, 1st In-Sem. Examination

Section – A

05X01 = 05 Marks

1. (a) 2.(a) 3.(b) 4.(a) 5.(d)

Section – B

03X02 = 06 Marks

Q.1 (Ans.) Benefits of 5S

1. Improved safety of the working environment
2. Higher equipment availability
3. Lower defect rates
4. Reduced costs
5. Reduce injury rates
6. Increased productivity
7. Improved employee morale
8. Better asset utilization
9. Higher quality
10. Enhanced enterprise image to customers, suppliers, employees, and management.

Q.2 (Ans.)

1. Only qualified persons with verified license(s) are allowed to conduct or supervise electrical work
2. Use of Personal Protective Equipment (PPE).
3. Before any work is carried out, equipment is tested to determine if it is de-energised
4. Employ steps that ensure the restoration of electricity supply. Following isolation will not pose risks to health and safety at the workplace
5. Appropriate termination of all exposed conductors
6. Identification and labelling of all electrical equipment

Q.3(Ans.)

Electrical measurements are the methods, devices and calculations used to measure electrical quantities. Measurement of electrical quantities may be done to measure electrical parameters of a system. Example: Voltage, Current, Power, Resistance, Frequency etc.

Section – C

03X03 = 09 Marks

Q.1 (Ans.) Safety is a major issue for day labourers and skilled labourers. Each year, accidents happen frequently in the construction industry and often times it is due to the absence of Personal Protective Equipment (PPE) or failure to wear the provided PPE. PPE is equipment that will protect workers against health or safety risks on the job. The purpose is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels. These hazard risks can be anything from wet floors to falling debris and everything in between. PPE includes items such as protective helmets, eye protection, high-visibility clothing, safety footwear, safety harnesses and, sometimes, respiratory protective equipment.

Q.2 (Ans.)

1. Accidents at Work. You may have been involved in an accident whilst at work.
2. Slip/Trip Claims (public liability)
3. Industrial Diseases and Illnesses.
4. Road Traffic Accidents
5. Accidents Abroad
6. Accidents involving Animals
7. Sports Related Injuries.
8. Clinical Negligence.

Q.3(Ans.)

- The steps of 5s

1. SORT = This means segregation, Dirt, dust, rubbish, and all unwanted wastes or material should be collected and segregated first.
2. SET IN ORDER = There should be an effective arrangement of safe disposal of segregated wastes. This also includes preventive arrangements such as local exhaust ventilation, dust collectors, vacuum cleaners, guards, covers, and devices to reduce noise, vibration, leakage, spillage, etc.
3. SHINE = The main activity of good housekeeping is cleaning. It includes cleaning of floors, walls, ceiling, sanitary and welfare facilities, parts of plant and machinery, PPE and other equipment, tools, lighting fixtures, lamps, tubes, etc.
4. STANDARDIZE = This suggests compliance with statutory provisions and national or international standards for safety, quality, cleanliness and environment.
5. SUSTAIN = This indicates the duty of everybody to follow rules, regulations, instructions, notices, orders, appeals, etc. for maintaining good housekeeping and safety.

THEORY 1st - IN-SEM EXAMINATION			
SESSION: 2022-23(SUMMER SEMESTER)			
B.Voc	**Semester**	1st	
Course name	Basic Electrical and Electronics Engineering		
Course code	ELE1107		
Date			
Name of the Student		**Reg. No.**	

INSTRUCTIONS

- Maximum Marks: **20**
- Duration of Examination: **01 Hour**
- Attempt all questions.

1. Section A (05 objective type questions, each question carries 01 mark) **05×1 = 05**

1. What are the basic building blocks of the Matter?
   (a) Water (b) Air
   (c) Atom (d) Neutrons
2. Subatomic Particles are
   (a) Protons (b) Electrons
   (c) Neutrons (d) All the mentioned options
3. The following statement is True or False: *'Protons are positively charged'.*
   (a) True (b) False
4. The following statement is True or False: *'Neutrons are negatively charged.'*
   (a) True (b) False
5. Best conductor of electricity is
   (a) Gold (b) Copper
   (c) Silver (d) Aluminium

2. Section B (03 short answer type questions, each question carries 02 marks) **03×02 = 06**

1. Define charge.
2. What is the difference between power and energy?
3. Write a short note on
   (a) Positive Charge (b) Negative Charge

3. Section C (03 long type questions, each question carries 03 marks) **03×03 = 09**

1. Write a short note on matter and its structure.
2. Differentiate between conductor and insulator with examples.
3. Write down the conventional current flow and electron flow.

ANSWER SHEET

School of Electrical Skills

THEORY 1st - IN-SEM EXAMINATION		
SESSION: 2022-23(SUMMER SEMESTER)		
B.Voc	**Semester**	1st
Course name	Basic Electrical and Electronics Engineering	
Course code	ELE1107	

1. Section A (05 objective type questions, each question carries 01 mark)	**05×1 = 05**

1. What are the basic building blocks of the Matter?
   (c) Atom
2. Subatomic Particles are
   (d) All the mentioned options
3. Protons are positively charged.'
   (a) True
4. 'Neutrons are negatively charged.'
   (b) False
5. Best conductor of electricity is
   (c) Silver

2. Section B (03 short answer type questions, each question carries 02 marks)	**03×02 = 06**

1. What is charge?

Ans. Electric Charge is the property of subatomic particles that causes it to experience a force when placed in an electric and magnetic field.

2. What is the difference between power and energy?

Ans.

Basis for Comparison	Electrical Energy	Electrical Power
Basic	It represents the overall work done on an electrical circuit.	Power defines the work done per unit time in an electrical circuit.
Denoted as	E	P
Given as	E = VI*t (or P*t)	P = V*I
SI unit	Joule	Watt

3. Write a short note on

Ans. Negative Charge: When an object has a negative charge it means that it has more electrons than protons.

Positive Charge: When an object has a positive charge it means that it has more protons than electrons.

3. **Section C** (03 long type questions, each question carries 03 marks)	**03×03 = 09**

1. Write a short note on matter and its structure.

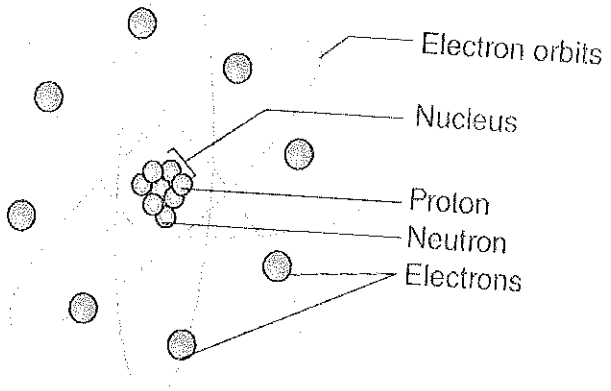
Ans.

Matter

- A matter, also known as a substance is composed of tiny particles.
- Anything that has mass and takes up space is known as matter.
- There are three states/forms of matter: solid, liquid, and gas.
- Example of the matter: Ice, water, air, pen, tree, oxygen gas, petrol, chalk, gold, silver, sand, etc.

Structure of matter

Structure of matter refers to the structure of an atom comprising a nucleus (centre) in which the protons (positively charged) and neutrons (neutral) are present. The negatively charged particles called electrons revolve around the centre of the nucleus. The atomic structure of an element refers to the constitution of its nucleus and the arrangement of the electrons around it. Primarily, the atomic structure of matter is made up of protons, electrons and neutrons. The protons and neutrons make up the nucleus of the atom, which is surrounded by the electrons belonging to the atom



The Structure of Atom

2. Differentiate between conductor and insulator with examples.

Ans.

Conductors are the substances that permit easy flow of electric energy through them. More specifically, we can say, it permits easy flow of electron from an atom to the other when a proper electric field is applied to it. These are the material, that possesses the highest conductivity among the three. Examples of conductors are metals, the human body, Earth and animals.

Insulators are the materials that are not good conductors of electric charges. As in the case of insulators, current cannot flow easily through them. The energy band gap is so high in case of insulators that even applied potential does not excite the electrons from valence band to conduction band. Examples of an insulator are paper, wood, and rubber.

3. Write down the conventional current flow and elrctron flow.

Ans. Electric Current is the rate of flow of electrons in a conductor. The SI Unit of electric current is the Ampere.

Conventional Current Flow

The conventional current flow is from the positive to the negative terminal and indicates the direction in which positive charges would flow.

Electron Flow

The electron flow is from negative to positive terminal. Electrons are negatively charged and are therefore attracted to the positive terminal as unlike charges attract.