



School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: ELE 1101

Course Name: Construction Electrician

Time: 1 Hour

Max. Marks: 20

Instruction: Answer all questions from section A, each question carries one mark. Answer all questions from section B, each question carries two marks. Answer all questions from section C, each question carries three marks. Scientific calculator is allowed.

Section – A

05X01 = 05 Marks

1. Conductivity is the reciprocal of:
(a) Conductance (b) Resistivity (c) Resistance (d) None of these
2. Which is not an insulator?
(a) Wool (b) Plastic (c) Copper (d) Glass
3. What is the unit of electrical energy?
(a) Watt-hours (b) Watts (c) Watts/hours (d) None of these
4. Type - B MCB trips at:
(a) 5 to 10 times of full load current (b) 3 to 5 times of full load current
(c) 10 to 20 times of full load current (d) None of these
5. Which measuring instrument is used to measure high resistance.
(a) Multi-meter (b) Mega ohmmeter (c) Megger (d) Both b and c

Section – B

03X02 = 06 Marks

1. Explain fuse and its working.
2. Write methods of reducing earth resistance.
3. Suppose, a consumer consumes 2000 watts' load per hour daily for one month. Calculate total energy bill of the consumer if per unit rate is Rs. 8 [Take 1 month = 30 Days].

Section – C

03X03 = 09 Marks

1. Explain types of ELCB.
2. Explain earthing and its types.
3. What is house wiring? Explain its types.



Answer Key (ELE 1101) Set-B
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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, First Semester,
2nd In-Sem. Examination

Course Code: ELE1101

Course Name: Construction Electrician

Time: 1 Hour

Max. Marks: 20

Answer Key

Section – A

05X01 = 05 Marks

A1. (b) Resistivity

A2. (c) Copper

A3. (a) Watt-hours

A4. (b) 3 to 5 times of full load current

A5. (d) Both B and C

Section – B

03X02 = 06 Marks

A1. **Fuse:** A fuse is a type of low resistance resistor that acts as a sacrificial device to provide over current protection, of either the load or short circuit.

Working Principle:

- The power consumed in an electrical circuit is reflected as the heat generated.
- The **fuse** wire is made of zinc, copper, silver, aluminium, or alloys. In general, it is an alloy of tin(Sn) and lead (Pb) having **composition** 63% Sn and 37% Pb.
- Resistance of the wire is constant. If current in the circuit exceeds more than the rated current, then the heat generated also exceeds and which causes the meltdown of fuse wire.
- Fuse is connected in series in a circuit.

A2. Methods of reducing earth resistance:

- By adding mixture of salt and water to the earth pit.
- By adding salt, charcoal and sand mixture to the pit.
- By using a bigger grounding plate.
- By burying the ground plate as deep as possible.
- By having parallel ground plates with a distance of 10m between grounds.
- By using salt, charcoal etc., to reduce resistivity.

A3. Solution:

1unit = 1kWh.

So Total kWh = 2000 Watts x 24 Hrs x 30 Days
= 1440000 watts-hour.

we have to convert it into Units,

Where is 1unit = 1kWh.

So total Consumed units. 1440000/1000..... (k=kilo=1000).

Total Units = 1440.

Cost of per unit is 8 Rs.

So total Cost or Electricity bill= 1440 x 8 = 11520.Rs.



Section – C

03X03 = 09 Marks

A1. There are two different types of Earth Leakage Circuit Breakers: -

1. Voltage Operate Earth Leakage Circuit Breaker

- A single-phase voltage ELCB includes 6-terminals namely line in, line out, neutral in, neutral out, Earth and fault. The metal body of the load is associated with the fault terminal of the ELCB & Earth terminal is associated with the ground.
- For usual working, the voltage across the trip coil is '0', as the Load's body is isolated from the supply line. When an Earth fault happens on the load due to the interaction of line wire to the metal body, a current will run through fault to the ground. The flow of current will set up a voltage across the trip coil, which is associated between E & F.

2. Current Operate Earth Leakage Circuit Breaker

- It has three winding transformer, that has two primary windings and also one secondary winding. Neutral & line wires work as the two main windings. A wire wound coil is the minor winding. The flow of current through the minor winding is "0" in the stable condition. In this condition, the flux induced by current in the phase wire will be deactivated by the current through the neutral wire, meanwhile the current, that flows from the phase will be refunded to the neutral.
- When an error occurs, a slight current will run into the ground also. This creates a confuse between line and neutral current and that makes an unstable magnetic field. This encourages a current flow through the minor winding, which is associated with the sensing circuit. This will detect the outflow and direct signal to tripping system.

A2. Earthing:

- The process of connecting metallic bodies of all the Electrical apparatus and equipment to earth by a wire having negligible resistance is called Earthing.
- The resistance of earthing is always less than 2 ohms.
- Earth resistance depends upon the moisture content in the soil.

Plate Earthing: A plate is fixed in the pit. The plate is connected via Copper conductor, or GI Conductor or concealed copper cable to the respective electrical set-up. A funnel is attached to add water at regular intervals.

Plate Earthing: A plate is fixed in the pit. The plate is connected via Copper conductor, or GI Conductor or concealed copper cable to the respective electrical set-up. A funnel is attached to add water at regular intervals.

Pipe Earthing:

- A galvanized steel and a perforated pipe of approved length and diameter is placed vertically in a wet soil in this kind of system of earthing. It is the most common system of earthing.
- The size of pipe to use depends on the magnitude of current and the type of soil.

Rod Earthing: It is the same method as pipe earthing. A copper rod of 12.5mm (1/2 inch) diameter or 16mm (0.6in) diameter of galvanized steel or hollow section 25mm (1inch) of GI pipe of length above 2.5m (8.2 ft.) are buried upright in the earth manually or with the help of a pneumatic hammer. The length of embedded electrodes in the soil reduces earth resistance to a desired value.

Strip Earthing:

- If at all round conductors are used, their cross-section area should not be too small, say less than 6.0mm² if it's a galvanized iron or steel.
- The length of the conductor buried in the ground would give a sufficient earth resistance and this length should not be less than 15m.



A3. House wiring: House wiring consists of an electrical wiring system that distributes energy to be used in equipment and appliances around the house. It also involves the proper installation and operation of the electrical outlets, switches, breakers, meter base and different electrical circuits.

1. Cleat Wiring: This wiring comprises of PVC insulated wires or ordinary VIR that are braided and compounded. They are held on walls and ceilings using porcelain cleats with grooves, wood or plastic. It is a temporary wiring system, therefore making it unsuitable for domestic premises. Moreover, cleat wiring system is rarely being used these days.

2. Casing and Capping Wiring: It was quite popular in the past but it is considered obsolete these days due to the popularity of the conduit and sheathed wiring system. The cables used in this electric wiring were PVC, VIR or any other approved insulated cables. The cables were carried through the wooden casing enclosures, where the casing was made of a strip of wood with parallel grooves cut lengthwise for accommodating the cables.

3. Batten Wiring: This is when a single electrical wire or a group of wires are laid over a wooden batten. The wires are held to the batten using a brass clip and spaced at an interval of 10 cm for horizontal runs and 15 cm for vertical runs.

4. 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.

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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: ELE 1102

Time: 1 Hour

Course Name: Electrical Drawing

Max. Marks: 20

Instruction: Answer all questions from section A, each question carries one mark. Answer all questions from section B, each question carries two marks. Answer all questions from section C, each question carries three marks. Scientific calculator is allowed.

Section – A

05X01 = 05 Marks

- Tail part of cable end is ____ to keep the cable in tight position.
(a) welded (b) soldered (c) both a and b (d) None of these
- Clearance above ground for low voltage line is:
(a) 1.1metre (b) 2.1metre (c) 4.1metre (d) 5.5 metre
- The bottom of ceiling fan should have minimum clearance of ____ above floor level:
(a) 1.75m (b) 2.75m (c) 3.25m (d) 4.4m
- Estimation and wiring calculation for domestic building is illustrated in:
(a) Indian electricity rules, 1947 (b) Indian electricity rules, 1956
(c) Indian electricity rules, 1963 (d) Indian electricity rules, 1999
- Cable lugs are fitted on which side of cable:
(a) Starting of cable (b) end of cable
(c) anywhere in cable (d) Any of these.

Section – B

03X02 = 06 Marks

- What is blueprint?
- What factors to be considered for selection of different wiring in electrical drawing?
- What are the necessary conditions for domestic installation?

Section – C

03X03 = 09 Marks

- Write different types of blueprint.
- A residential single bedroom flat is to be electrified with PVC concealed type wiring. Estimate the quantity of materials required with specification. The details of the fittings are as follows:

S.No.	Name of room	Size	No. of tube light points	No. of ceiling fan	No. of ordinary lamps	No. of plug points
1	Hall	5m*6m	2	1	2	2
2	Bed room	4m*4m	1	1	1	1
3	Kitchen	4m*2m	1	1	1	1
4	Bath room	1.5m*1.5m	-	-	1	1
5	Toilet	1.5m*1.5m	-	-	1	-

Draw the plan of building considering the data in the above table.

- Estimate the total load, number of sub-circuits, current drawn by the components of the building. Take data from above table.



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School of Electrical Skills
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2nd In-Sem. Examination

Course Code: ELE 1102
Course Name: Electrical Drawing

Time: 1 Hour
Max. Marks: 20

Section – A

05X01 = 05 Marks

1. Tail part of cable end is ____ to keep the cable in tight position.
Ans. (b) soldered
2. Clearance above ground for low voltage line is
Ans. (d) 5.5 metre
3. The bottom of ceiling fan should have minimum clearance of ____ above floor level,
Ans. (b) 2.75m
4. Estimation and wiring calculation for domestic building is illustrated in
Ans. (b) Indian electricity rules, 1956
5. Cable lugs are fitted on which side of cable
(b) end of cable

Section – B

03X02 = 06 Marks

1. What is blueprint?
Ans. A blueprint is a photographic print of a prepared drawing with the lines and lettering in white on a bright blue background; it's used for mechanical, electrical, and architectural drawings.
2. What factors to be considered for selection of different wiring in electrical drawing?
Ans.
Initial cost : It should be economical.
Durability : It must be able to withstand wear and tear due to weather.
Safety from fire : It should be free from risk of fire as far as possible.
Mechanical Protection : It must provide good mechanical protection to the cables.
Permanency : The wiring must not be affected by the action of weather, fumes, dampness, chemicals etc.,
Appearance : It is an architectural point of view.
Accessibility : It should be easy to extend or repair the wiring.
Life : The System adopted should have good life.
Maintenance Cost : It should be low.
3. What are the necessary conditions for domestic installation?

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- Height of switch board must be 1.3m to 1.75m from floor level
- Height of distribution board must be 1.5m to 1.75m from floor level
- The bottom of ceiling fan should have minimum clearance of 2.75m
- All lamp should be fitted with a minimum clearance of 2.75m above floor level
- For load above 4kw, **3 phase supply must arrange**
- load should be equally shared.
- In any building light wiring and power wiring should be kept separate
- Power per circuit may take it as 800w or 1000w, (10points)

Section – C

03X03 = 09 Marks

1. Write different types of blueprint.

Ans.

1. Electrical Construction Drawings
2. Schematic or Wiring Diagrams
 - One-line diagram
 - Three-line diagram
 - Ladder diagram
3. Panel and Switchgear Drawings
4. Bill of Material

5. Schedules

- Panels
- Light fixture
- Motor
- Conduit and cable

6. Lighting and Power Plans

- Lighting
- Power
- Ancillary system

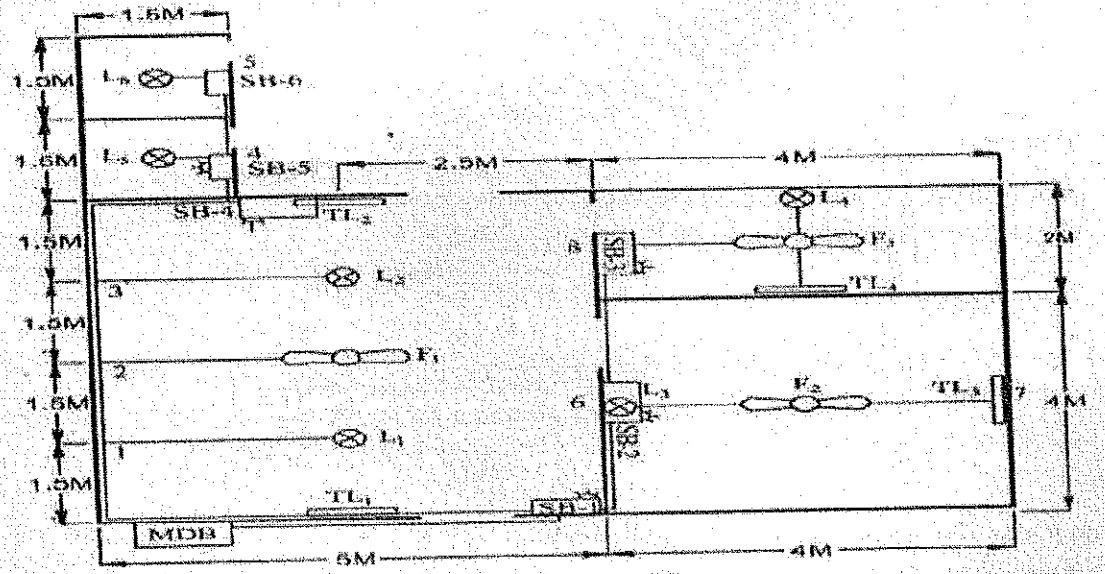
2. A residential single bedroom flat is to be electrified with PVC concealed type wiring. Estimate the quantity of materials required with specification. The details of the fittings are as follows:

S.No.	Name of room	Size	No. of tube light points	No. of ceiling fan	No. of ordinary lamps	No. of plug points
1	Hall	5m*6m	2	1	2	2
2	Bed room	4m*4m	1	1	1	1
3	Kitchen	4m*2m	1	1	1	1
4	Bath room	1.5m*1.5m	-	-	1	1
5	Toilet	1.5m*1.5m	-	-	1	-

Draw the plan of building considering the data in the above table.

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Ans.



3. Estimate the total load, number of sub-circuits, current drawn by the components of the building. Take data from above table.

Ans.

Assuming	(1) Fan point - 60 watts	
	(2) Light point - 60 watts	
	(3) Tub light point - 40 watts	
	(4) Plug point - 100 watts	
Total load	(i) Fan load = 3 x 60	= 180 watts
	(ii) Light load = 6 x 60	= 360 watts
	(iii) Tube light load = 4 x 40	= 160 watts
	(iv) Plug point load = 5 x 100	= 500 watts
		<u>1200 watts</u>

Number of Sub-circuit:

Power per circuit	= 800 watts or 10 points
No of sub circuits	= $\frac{1200}{800} = 2$ circuits

Current drawn by the components-

Calculation of current

$$\text{Total current } I = \frac{\text{Total load}}{230} = \frac{1200}{230} = 5.21 \text{ A}$$

$$\text{Current of sub circuit 1} = \frac{680}{230} = 2.95 \text{ Ampe}$$

$$\text{Current of sub circuit 2} = \frac{520}{240} = 2.26 \text{ Ampe}$$

Selection of Main switch and DB

Total current = 5.21 A

∴ Maximum current = 2 x Full load current

$$= 2 \times 5.21 = 10.42 \text{ A}$$

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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: ELE 1103**Time: 1 Hour****Course Name: Basic Electrical Engineering****Max. Marks: 20**

Instruction: Answer all questions from section A, each question carries one mark. Answer all questions from section B, each question carries two marks. Answer all questions from section C, each question carries three marks. Scientific calculator is allowed.

Section – A

05X01 = 05 Marks

1. Screw rule is applied to determine:
(a) Magnetic field direction (b) Current direction
(c) Force direction (d) None of these
2. The relative permeability of air is:
(a) Infinity (b) One (c) Zero (d) 100
3. Lenz's Law which gives us the direction of:
(a) Induced emf (b) Flux (c) Field (d) None of these
4. Hysteresis loss is proportional to the _____ of Hysteresis loop.
(a) Length (b) Width (c) Height (d) Area
5. If, permeability of magnetic material is infinity then its reluctance will be:
(a) Zero (b) Very high (c) Infinity (d) None of these

Section – B

03X02 = 06 Marks

1. Define magneto motive force and state its units.
2. Explain Flemings's left hand rule and what is the application of it.
3. What do you understand by reluctance and state its units?

Section – C

03X03 = 09 Marks

1. The wing span of metal aero plane is 36 meter. If the aero plane is flying at 400 km/hr. determine the emf induced between wing tips. Assume the vertical component of earth's magnetic field is $40 \mu\text{T}$.
2. A conductor carries a current of 20 A and is at right angle to a magnetic field having a flux density of 0.9 T. If the length of conductor in the field is 30 cms. Calculate the force acting on the conductor.
3. State Faraday's law of electromagnetic induction.

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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: ELE 1103
Course Name: Basic Electrical Engineering

Time: 1 Hour
Max. Marks: 20

Section – A

05X01 = 05 Marks

1. Screw rule is applied to determine:
Ans. (a) Magnetic field direction
2. The relative permeability of air is:
Ans. (b) One
3. Lenz's Law which gives us the direction of:
Ans. (d) Current
4. Hysteresis loss is proportional to the _____ of Hysteresis loop.
Ans. (d) Area
5. If, permeability of magnetic material is infinity then its reluctance will be:
Ans. (a) Zero

Section – B

03X02 = 06 Marks

1. Define magneto motive force and state its units.

Ans. Magneto motive force and magnetic field strength

Magneto motive force (mmf) is the cause of the existence of magnetic flux in magnetic circuit.

$$\text{mmf} = NI \text{ Amp turns}$$

N = Number of turns – turns have no dimension

I = current in Amps. So mmf = NI Amps.

2. Explain Flemings's left hand rule and what is the application of it.

Ans. Fleming's left hand rule (after called motor rule)

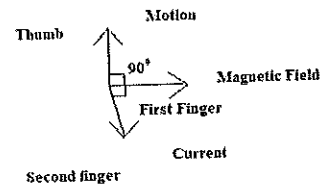
Which states let the thumb, first finger and second finger of left hand be extended such that they all are right angles to each other.



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If the first finger points the direction of magnetic field, the second finger points in the direction of the current, then the thumb will point the direction of motion.

Summarizing First finger – Field
 Second finger – Current
 Thumb – Motion



3. What do you understand by reluctance and state its units?

Ans. Reluctance: S is the magnetic resistance of magnetic circuit to the presence of magnetic flux

$$S = \frac{mmf}{\phi} = \frac{NI}{\phi} = \frac{Hl}{BA} = \frac{l}{\left(\frac{B}{H}A\right)}$$

$$S = \frac{l}{\mu_0 \mu_r A}$$

The unit reluctance is Amps/weber

Section – C

03X03 = 09 Marks

1. The wing span of metal aero plane is 36 meter. If the aero plane is flying at 400 km/hr. determine the emf induced between wing tips. Assume the vertical component of earth's magnetic field is 40 μ T.

Ans.

We know that:

$$E = Blv = 40 \times 10^{-6} \times 36 \times 400 \times 10^3 / 36 = 0.16 \text{ V}$$

The induced emf between wing tips will be equal to 0.16 V.

2. A conductor carries a current of 20 A and is at right angle to a magnetic field having a flux density of 0.9 T. If the length of conductor in the field is 30 cms. Calculate the force acting on the conductor.

Ans. We know that

$$\text{Force} = Bil$$

$$= 0.9 \times 20 \times 0.3$$

$$F = 5.4 \text{ Newton}$$

The force on the conductor will be 5.4 N



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3. State Faraday's law of electromagnetic induction.

Ans. Any change in the magnetic field of a coil of wire will cause an emf to be induced in the coil. This emf induced is called induced emf and if the conductor circuit is closed, the current will also circulate through the circuit and this current is called induced current.
Method to change the magnetic field:

1. By moving a magnet towards or away from the coil
2. By moving the coil into or out of the magnetic field
3. By changing the area of a coil placed in the magnetic field
4. By rotating the coil relative to the magnet

Faraday's Second Law

It states that the magnitude of emf induced in the coil is equal to the rate of change of flux that linkages with the coil. The flux linkage of the coil is the product of the number of turns in the coil and flux associated with the coil.

But according to Faraday's law of electromagnetic induction, the rate of change of flux linkage is equal to induced emf.

$$E = -N \frac{d\phi}{dt}$$



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School of Electrical Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 1st Semester,

2nd In-Sem. Examination

Course Code: ELE1104

Time: 1 Hour

Course Name: Maintenance Technician Electrical

Max. Marks: 20

Instruction: Answer all questions from section A, each question carries one mark. Answer all questions from section B, each question carries two marks. Answer all questions from section C, each question carries three marks. Scientific calculator is allowed.

Section – A

05x01 = 05 Marks

1. Maintenance consist of the following actions:

(a) Replace of component	(b) Repair of component
(c) Service of component	(d) All of the above
2. The following are scheduled maintenance:

(a) Overhauling of machine	(b) Cleaning of tank
(c) Whitewashing of building	(d) All of the above
3. By doing preventive maintenance timely, the breakdown maintenance cost is being:

(a) Increases	(b) Decreases	(c) Remain same	(d) Any of the above
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4. Do not use appliances, if they are:

(a) damaged	(b) wires damaged	(c) working properly	(d) both a and b
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5. The specialized tool required for removing the insulation of wire is:

(a) Combination Plier	(b) Knife	(c) Wire Stripper	(d) all of these
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Section – B

03x02 = 06 Marks

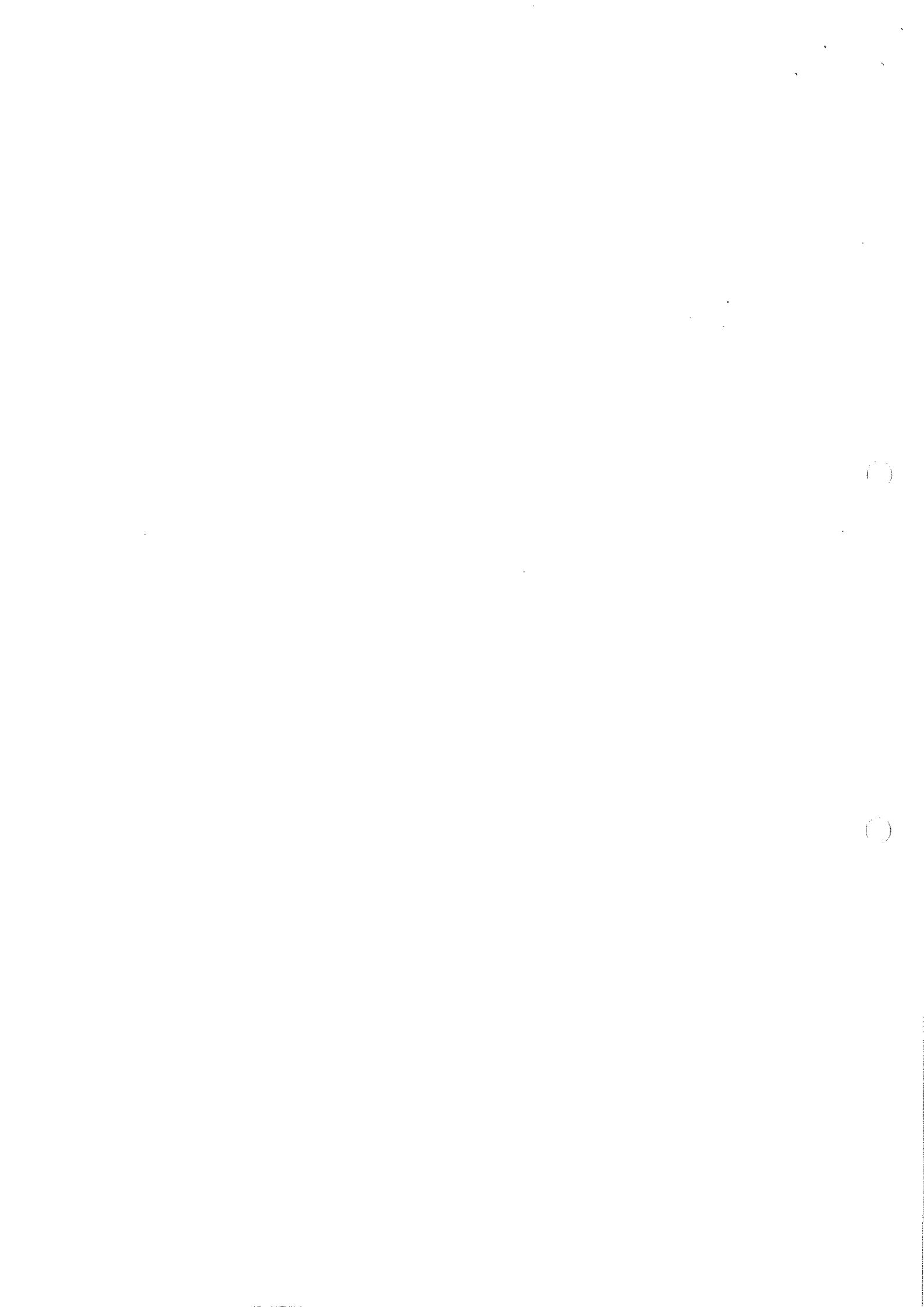
1. What is Preventive maintenance?
2. What is environment Hazards?
3. Define PPE (Personal Protective equipment).

Section – C

03x03 = 09 Marks

1. What is corrective Maintenance?
2. Write a short note on Maintenance.
3. Draw the block diagram of organization structure of maintenance department.

Handwritten signature
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BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Electrical Skills

Session: 2019-20 (Summer Semester)

B. Voc. 1st Semester,

2nd In-Sem. Examination

Course Code: ELE1104

Course Name: Maintenance Technician

Time: 1 Hour

Max. Marks: 20

Answer Sheet

Section – A

05X01 = 05 Marks

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

Section – B

03X02 = 06 Marks

Ans. 1.

Preventive maintenance can be described as maintenance of equipment or systems before fault occurs. Preventive maintenance is conduct to keep equipment working or extend the life of equipment. Preventive maintenance is applied by technician's teams and managers before any breakdown or failure occurs. Its aim is to reduce the probability of breakdown or degradation of a piece of equipment, component or spare part. In order to implement such maintenance, teams have to take the part's history into consideration and keep track of the past failures. They are therefore able to identify the time ranges during which a piece of equipment might break down.

Ans. 2.

An environmental hazard is a substance, a state or an event which has the potential to threaten the surrounding natural environment / or adversely affect people's health, including pollution and natural disasters such as storms and earthquakes.

Ans. 3.

Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.

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Section – C

03X03 = 09 Marks

Ans. 1.

Ans: This type of maintenance is described as planned because it's based on well-established maintenance programs and hard facts. It is possible to apply preventive maintenance thanks to a computerized maintenance management system (CMMS), an essential tool for any company wishing to organize its maintenance department and therefore to ensure long-lasting productivity. A CMMS is a truly useful tool for maintenance teams as they enter every detail of their interventions and exchange with colleagues in order to keep track of all the operations, maintenance plans, etc. Technicians, thanks to their work and the information they give in, progressively build a whole history of past breakdowns and failures.

Ans. 2.

It is essentially important to carry out electrical maintenance on a regular basis; maintaining all the electrical material fittings, appliances and devices in and around your home. Maintenance enhances the smooth running of all the electricity powered items in your home, while creating a safe environment that will be free from all sorts of hazards. Maintenance involves fixing any sort of mechanical or electrical device which has become out of order or broken. It also includes performing routine actions which keep device in working order or prevent trouble from arising.

The maintenance department is responsible and accountable for maintenance. It is responsible for the way equipment run and looks and for the coasts to achieve the queried level of performance. The maintenance function responsible for the frequency and level of maintenance

Ans. 3.

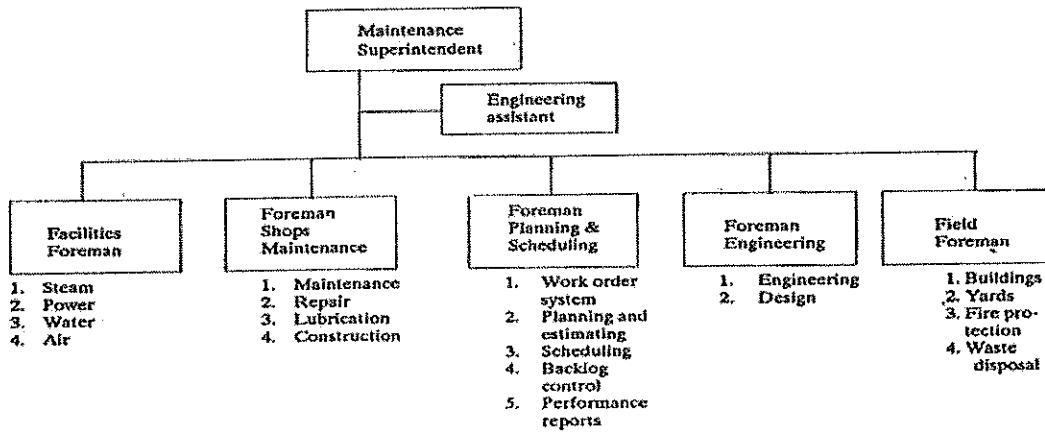


Fig. 13.1. Organization structure of maintenance department.

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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
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Course Code: ELE 1105**Course Name: Electrical Safety****Time: 1 Hour****Max. Marks: 20**

Instruction: Answer all questions from section A, each question carries one mark. Answer all questions from section B, each question carries two marks. Answer all questions from section C, each question carries three marks. Scientific calculator is allowed.

Section – A

05X01 = 05 Marks

- Code of practice for fire safety of building are:
(a) IS 1641 to IS 1646 (b) IS 3034 to IS 3040
(c) IS 3079 to IS 3084 (d) IS 11457
- IS 3034 is the IS code of practice for fire safety of:
(a) Electrical generating stations and distribution stations
(b) Buildings
(c) Cotton textile mills
(d) Rubber and Plastic
- First CO₂ extinguisher was invented in year:
(a) 1924 (b) 1928 (c) 1910 (d) 1904
- Class F fire extinguisher are used only to extinguish the fires of:
(a) Cooking oils and fats (b) Electrical system (c) Wood (d) Cotton
- Which of the following is the fire emergency numbers of Rajasthan state?
(a) 101 (b) 100 (c) 102 (d) 108

Section – B

03X02 = 06 Marks

- What are three primary emergency service that can be summoned directly by the public?
- Why PM 2.5 is so harmful?
- What do you understand by passive and active fire safety system?

Section – C

03X03 = 09 Marks

- What is the importance of fire prevention week?
- What is PM 2.5 in air quality?
- What requirements are mandatory for certifying the fire-fighting readiness at the plant?

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School of Electrical Skills
Session: 2019-20 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: ELE 1105
Course Name: Electrical Safety

Time: 1 Hour
Max. Marks: 20

Section – A

05X01 = 05 Marks

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

Section – B

03X02 = 06 Marks

1. What are three primary emergency service that can be summoned directly by the public?

Ans. Police: maintenance of public order – 100
Fire: Firefighting – 101
Medical: Emergency medical service – 102/108

2. Why PM 2.5 is so harmful?

Ans. Since they are so small and light fire particles tend to stay longer in the air than heavier particles. This increases the chances of humans and animals in haling them in to bodies.

3. What do you understand by passive and active fire safety system?

Ans. Passive fire safety systems are fire barriers, fire seals, fire detectors and fire retardant paints.

Active fire safety systems are pumps, fire hydrants sprinkles and extinguishers.

Section – C

03X03 = 09 Marks

1. What is the importance of fire prevention week?

Ans. . Fire prevention week helps to raise awareness about the fire and home safety: ensure your home and family are prepared and safe in case of emergency. Fire prevention week is being observed each year during the week of October 9th in commemoration of great Chicago fire which began on 8th October, 1871.

2. What is PM 2.5 in air quality?

Ans. The most common measurable are PM 2.5 and PM 10, measured in micro grams per cubic meter. PM 2.5 is the concertation & microscopic particle less than 2.5 microns in diameter. PM 10 refers 10 the concertation of particles less than 10 microns in diameter.

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3. What requirements are mandatory for certifying the fire-fighting readiness at the plant?

Ans. The following requirements are mandatory for certifying the fire-fighting readiness at the plant.

- (i) Premises are safe
- (ii) Escape routes, stair cases,
- (iii) Portable fire extinguishers, sand buckets have been placed as required.
- (iv) Fire prevention boards have been displayed.
- (v) Personnel have been trained.
- (vi) Rehearsals of activities (in the event of fire) are carries out.
- (vii) Fixed type fire-fighting systems have been installed, tested and commissioned.
- (viii) Insurance team has inspected the Plant and conveyed approval of fire-fighting facilities and safety provisions.

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