The Brigade School@ G and W

Total points 13/20

Class 10 Physics Marks 20

Name (Write your full name -- First name and Surname- Capitalize the first alphabet of both) *

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School *

TBSG

✗ 1. What do you mean by earthing of an appliance ? * 0/1

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Feedback

To connect the metallic case of the appliance to the earth connection (grounding)

✗ 2. In the transmission of power, the voltage of power generator at the generating station is stepped up from 11 kV to 132 kV. Why? * 0/2

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Feedback

P= VI and H = I^2Rt (explanation based on formula to be given)
To minimise the loss of energy in the form of heat in the live wire used for transmission.

✗ 3. (i) A fuse wire is rated 8 A. Can it be used with an electrical appliance rated 5 kW-200V? Give reason. (ii)Name two safety devices which are connected to the live wire of a household electric circuit. * 0/3

(i) I = P/V = 5000/200 = 25A, since the safe current(8A) is less than 25A it cant be used with the electrical appliance.
(ii) Fuse and MCB

Feedback

(i) P= 5kW = 5000 W; V= 200 V
I= P/V = 5000/200 = 25 A (1 mark)
The appliance will draw 25 A current and so the fuse rated 8 A cannot be used as it will blow off/melt when current exceeds 8 A and the circuit will break. (1/2 + 1/2)
(ii) Fuse and switch (1/2 + 1/2 +

✗ 4. (i) Name the colour code of the wire which is connected to the metallic body of an appliance. (ii) to which wire of a cable in a power circuit should the metal case of a geyser be connected? "9iii) to which wire should a fuse be connected? * 2/3

(i) Live wire is coded with Brown, neutral with light blue and earth with green/yellow.
(ii) It must be connected to the earth(green) wire.
(iii)It must be connected to live(brown)wire.

Feedback

(i) Colour code of the earth wire is green or yellow
(ii) Earth wire
(iii) Live wire

✓ 5. State the characteristics required in a material to be used as an effective fuse wire. * 2/2

Its should be short and thin with a uniform area of cross section. The material should have low melting point and high resistance.

Feedback

High resistivity and Low melting point

✓ 6. (i) Name the type of transformer used in the power transmitting station of a power plant. (ii) What type of current is transmitted from the power station? (iii) At what voltage is this current available to our household? * 3/3

(i) Step-up transformer.
(ii) Alternating current is transmitted.
(iii) 220V, the current will be available to our household.

Feedback

(i) Step-up transformer
(ii) Alternating current
(iii) 220 V

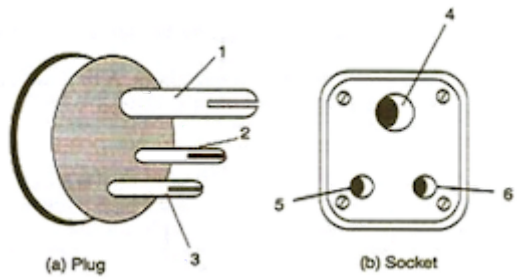
✓ 7. (i) An electric gadget can give an electric shock to its user under certain circumstances. Mention any two of them. (ii) What preventive measure provided in a gadget can protect the user from an electric shock? * 3/3

(ii) ~The appliance should not be operated with wet hands.
~Each appliance must have its metallic case earthed.
(i) ~ Due to touching the appliance with wet hands.
~ Due to no earthing of the appliance.

Feedback

(i) When the live wire comes in contact with wet hands, when there is a short circuit in the appliance
(ii) Earthing the appliance can prevent the person from getting a shock.

✓ 8. In the diagram below the plug and socket have been numbered. Identify the live, neutral and earth connections. * 3/3



Live connection is 3 and 6, neutral is 2 and 5 and 1 and 4 is for earth connection.

Feedback

1 and 4 earth
2 and 5 neutral
3 and 6 live