

Paper: PhysicsMonth Test: 3rd TermTheme/Unit: 13

Objective/Subjective:

Name: _____



ID: _____

class: 12thTotal Marks: 75

Obt. Marks: _____

Grand Total: 75

Time: _____

Section: _____

Q No 1: Encircle the correct answer (15×1=15)

1: Current flows in a gas due to:

a: electrons only b: electrons and ions c: Positive ions d: holes

2: A battery made a charge of 40 C around a circuit at constant rate in 20 sec. The current will be

a: 2 A b: 0.5 A c: 80 A d: 60 A

3: The charge carrier in electrolytes are:

a: Protons b: Positive and negative ions c: electrons d: holes

4: The graphical representation of Ohm's law is:

a: Hyperbola b: Ellipse c: Parabola d: straight line

5: Power of an electric generator of voltage (V) and driving current (I) through an appliance is:

a: $P=VI$ b: $P=I^2 R$ c: $P=\frac{V^2}{R}$ d: All of these

6: Electrical energy is measured in:

a: watt b: horse power c: kilowatt d: kilowatt hour

7: The unit of electromotive force is:

a: Newton b: Pascal c: Volt d: Ampere

8: The value of maximum power output is:

a: $\frac{E}{4r}$ b: $\frac{E^2}{4r}$ c: $\frac{E}{4r^2}$ d: $\frac{E^2}{4r^2}$

9: Which equation represent the maximum output power?

a: $P=\frac{E^2}{4R}$ b: $P=\frac{E^2}{4r}$ c: $P=\frac{E^2}{4r^2}$ d: $\frac{E^2}{4R^2}$

10: The 'emf' is always _____ even when no current is drawn through the battery or cell.

a: zero b: present c: absent d: maximum

11: When the internal resistance of source is equal to the load, the maximum power dissipated is:

a: $\frac{E^2}{R}$ b: $\frac{E^2}{4r}$ c: $4E^2$ d: $E^2 4r$

12: For a closed circuit:

a: $E=V_t$ b: $E>V_t$ c: $E<V_t$ d: $E=V_t-Ir$

13: Kirchhoff's first rule is the manifestation of the law of conservation of:

a: Mass b: Charge c: Energy d: Momentum

14: Potentiometer can be used as:

a: Ohm meter b: Ammeter c: Galvanometer

d: potential divider

15: In case of metallic conductors, the charge carriers are:

a: Protons b: Electrons c: Neutrons d: none

Q No 2: Short Questions (7×2=14)

1: Do bends in a wire affect its electrical resistance? Explain.

2: Why does the resistance of a conductor rise with temperature?

3: Define electric current and its unit?

4: State the Ohm's law?

5: What is Rheostat?

6: Describe a circuit which will give a continuously varying potential.

7: Explain why the terminal potential difference of a battery decreases when the current drawn from it is increased?

Q No:3 Long Questions (6+5)

a: What is electromotive force(emf) and terminal potential difference? Explain.

b: A rectangular bar of iron is 2.0 cm by 2.0 cm in cross section and 40 cm long. Calculate its resistance if the resistivity of iron is $11 \times 10^{-8} \Omega \text{m}$.