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**GRAND
TEST**

**SSC EXAMINATION
SCIENCE & TECHNOLOGY (72)
PAPER - I (SET-A)**

**Marks : 40
Duration : 2 Hrs.**

- Note:-** i. All questions are Compulsory.
ii. Students should write the answers of question in sequence.
iii. Draw well - labelled diagram wherever necessary.

Q.1A Answer the following sub-questions :

1. Fill in the blanks:

[3M]

- 1 milli ampere = _____ micro ampere.
- In _____ mechanical energy is converted into electric energy.
- Relation between resistance and resistivity is expressed as _____

2. Write the co-relation and fill in the blanks:

[2M]

1. Combination with hydrogen : reduction :: combination with oxygen : _____
2. Density : gm / cc :: Volume : _____

B Choose the correct alternative:

[5M]

1. The colour of the universal indicator is _____
(a) red (b) blue (c) green (d) greenish yellow
2. When the resistance of a conductor increases, the current will _____
(a) increase (b) decrease (c) remain same (d) none of above
3. Which of the following converges rays of light falling on it? _____
(a) concave mirror (b) convex mirror
(c) plane mirror (d) concave lens
4. _____ day is celebrated as National Science Day.
(a) 28th Feb (b) 8th March (c) 14th Nov (d) 5th May
5. Which type of mirror is used by dentist?
(a) Plane (b) Convex (c) Concave (d) Parabolic

Q. 2 Solve any five questions:

[10M]

1. What is meant by Dobereiner's triads? Explain with example.
2. Give scientific reason - stars twinkle at night.

3. Find the expression for the resistors connected in series.
4. What is meant by pH Value? What is its use?
5. 'X' is an element belong to 2^{nd} group and 'Y' is an element belongs to 15^{th} group. Then find the valence electron of an element 'X' and valency of an element 'Y'.
6. Refractive index of water is $4/3$ and speed of light in air is $3 \times 10^8 \text{ m/s}$. Find the speed of light in water.

Q.3 Answer any five questions of the following:

[15M]

1. Give reason - Calcium floats over water during the reaction with water.
2. What is meant by ionisation? Explain with suitable example.
3. What is refraction of light? Explain with suitable example.
4. State the rules for drawing ray diagrams of spherical mirrors.
5. Write any four uses of heating effect of electric current.
6. Draw the figure of human eye and write the function of iris.

Q.4 Attempt any one of the following:

[5M]

1. Explain the electric generator with the help of the following points:
 - (a) Diagram of A.C. generator with labelling.
 - (b) Principle of electric generator
 - (c) Function of slip rings.
 - (d) Any two uses of generator.
2. Explain the occurrence of advanced sunrise and delayed sunset on the basis of atmospheric refraction.