

MT

2017 ___ ___ 1100

Seat No.

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MT - SCIENCE & TECHNOLOGY -I (72) - SEMI PRELIM - I : PAPER - 1

Time : 2 Hours

(Pages 3)

Max. Marks : 40

Note :

- (i) All questions are compulsory.
- (ii) All questions carry equal marks.
- (iii) Draw neat and labelled diagrams wherever necessary.

Q.1. (A) Fill in the blanks :

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- (1) Sodium or potassium salts of higher fatty acids are termed as _____ .
- (2) The phenomenon of change in the _____ of light when it passes from one transparent medium to another is called refraction.
- (3) In India, the frequency of A.C is _____ cycles per second.

Q.1. (B) True or False :

2

- (1) Methyl orange turns yellow in acid.
- (2) Magnetic lines of force always cross each other.

Q.2. Rewrite the following statements by selecting the correct alternative :

5

- (1) pH values of some aqueous solutions are given below. Which of these solution is acidic ?
 - (a) pH = 6
 - (b) pH = 7
 - (c) pH = 10
 - (d) pH = 14
- (2) Which gas when passed through fresh lime water turns it milky ?
 - (a) H₂
 - (b) CO
 - (c) CO₂
 - (d) SO₂

- (3) When a ray of light travels from air to glass and strikes the surface of separation at 90° , then it
- (a) bends towards the normal
 - (b) bends away from the normal
 - (c) passes without bending
 - (d) reflects to air
- (4) A ray of light strikes the glass slab at an angle of 50° . What is the angle of incidence ?
- (a) 50°
 - (b) 25°
 - (c) 40°
 - (d) 100°
- (5) At the time of short circuit, the current in the circuit
- (a) increases
 - (b) decreases
 - (c) remains same
 - (d) increases in steps

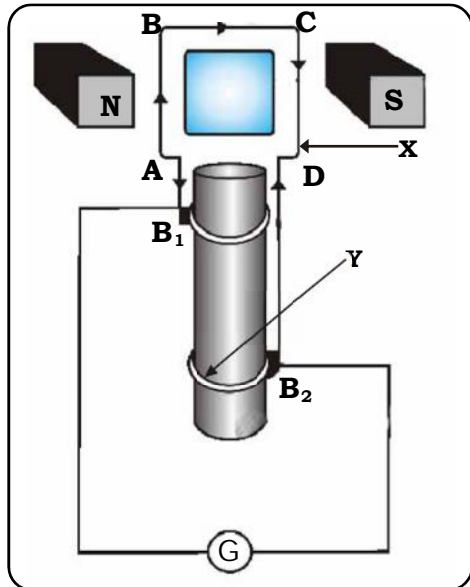
Q.3. Answer the following in short : (Any 5)**10**

- (1) Distinguish between : Washing soda and Baking soda
- (2) Give scientific reason : Jaggery is used with tamarind while cooking.
- (3) Explain the following chemical reaction with the help of balanced equation :
Bleaching powder is exposed to air.
- (4) Wires carrying electricity should not be touched bare footed.
- (5) Give scientific reasons :
The sky appears dark instead of blue to a person located in space.
- (6) State Flemming's Right Hand Rule
- (7) Draw a neat labelled diagram : Dispersion of light through prism.

Q.4. Answer the following in brief : (Any 5)**15**

- (1) Write a short note on : Water of crystallization (with proper examples)
- (2) What is a universal indicator? Does $Mg(OH)_2$ react with sodium hydroxide? If not, why?
- (3) State the uses of bleaching powder.
- (4) Explain how formation of a rainbow occurs.
- (5) State the characteristics of magnetic lines of force.

- (6) What do you mean by dispersion? Name the different colours of light in the proper sequence in the spectrum of light.
- (7) Answer the following from the given diagram.



- (a) State the principle on which generator works.
- (b) Label X and Y in the diagram.
- (c) Which type of current is generated in the above figure?

Q.5. Answer in detail: (Any 1)

5

- (1) (a) Define Electric motor.
 (b) Explain the working of electric motor.
- (2) (a) Take 2 gm of Aluminium carbonate in boiling test tube, add dil. HCl to it. Do not allow the gas to escape. Through the delivery tube allow the gas to pass through decanted solution of chalk with H_2O . What are your observations?
 (b) Take a small amount of red oxide (primer used before paint). Add to it a few drops of dil. HCl. What do you observe? What is chemical formula of red oxide?
 (c) Define the following : Weak bases

Best Of Luck 🍀