

# MT

2017 \_\_\_\_ 1100

Seat No. 

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**MT - SCIENCE & TECHNOLOGY - II (72) - SEMI PRELIM - I : PAPER - 4**

**Time : 2 Hours**

**(Pages 3)**

**Max. Marks : 40**

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**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 : 3**

- (1) A basic process in reproduction is the creation of a ..... copy.
- (2) Dominant character masks the ..... character.
- (3) Anodizing is a process of forming a thick oxide layer of .....

**Q.1. (B) State whether the following statements are true or false and if 2 false, write the correct statement:**

- (1) All children inherit 'X' chromosome from their father.
- (2) Copper reacts vigorously with dilute HCl.

**Q.2. Rewrite the following statements by selecting the correct alternative: 5**

- (1) For binary fission, amoeba requires ..... parent cells .
  - (a) Three (b) Two
  - (c) One (d) Zero
  
- (2) Mammals have evolved from .....
  - (a) Amphibians (b) Arthropod
  - (c) Reptiles (d) Aves

- (3) To show that zinc is more reactive than copper, the correct procedure is to .....
- (a) prepare copper sulphate solution and dip zinc strip in it.
  - (b) prepare zinc sulphate solution and dip copper strip in it.
  - (c) heat together zinc and copper strip in it.
  - (d) add dilute nitric acid to both the strips.
- (4) What is the formula of ethanoic acid ?
- (a) HCOOH
  - (b) CH<sub>3</sub>COOH
  - (c) C<sub>2</sub>H<sub>5</sub>COOH
  - (d) C<sub>3</sub>H<sub>7</sub>COOH
- (5) What is a redox reaction ?
- (a) Reaction in which oxidation takes place.
  - (b) Reaction in which reduction takes place.
  - (c) Reaction in which neither oxidation nor reduction takes place.
  - (d) Reaction in which oxidation and reduction takes place simultaneously.

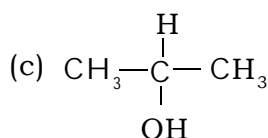
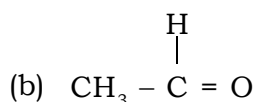
**Q.3. Answer the following in short : (Any 5)**

**10**

- (1) Give scientific reason :  
Some flowers have attractive colours while some have fragrance.
- (2) Give scientific reason :  
Tarnished copper utensils are cleaned with lime juice or tamarind.
- (3) Draw neat and labelled diagram of Budding in Hydra.
- (4) Distinguish between : Toilet soap and Laundry soap.
- (5) Distinguish between : Analogous organs and Homologous organs.
- (6) Explain the following chemical reaction with the help of balanced equation :  
Magnesium reacts with hot water.
- (7) Define the following :
  - (a) Metallurgy
  - (b) Catenation.

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

- (1) (a) Define Fossils.  
(b) Give scientific reason :  
Palaentological evidence suggests that invertebrates came into existence before the vertebrates.
- (2) What is action of chlorine, sodium metal and ethanol with ethanoic acid ?
- (3) What are the advantages of sexual reproduction over asexual reproduction ?
- (4) Explain extraction of metals with high reactivity.
- (5) What is thermit reaction?
- (6) Distinguish between : Mitosis and Meiosis.
- (7) Give the IUPAC name of the following compounds :  
(a)  $\text{CH}_3 - \text{C} \equiv \text{CH}$

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

- (1) Describe the structure of the reproductive parts of a flower.
- (2) Explain the formation of an ionic compound between metal and a non-metal by transfer of electrons with Mg as the metal and Cl as a non-metal to illustrate the answer with neat labelled diagram.

*Best Of Luck* 🍀