

# MT

2017 \_\_\_\_ 1100

Seat No. 

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**MT - SCIENCE & TECHNOLOGY - II (72) - SEMI PRELIM - I : PAPER - 6**

**Time : 2 Hours**

**(Pages 4)**

**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) When the transfer of pollen from an anther to stigma occurs in the same flower, the process is called .....
- (2) In ..... mode of reproduction the off-springs are with minor differences.
- (3) Copper reacts with moist carbon dioxide in air and slowly loses its shine to gain a green coat of .....

**Q.1. (B) 2**

- (1) **Give examples of :**  
Some contraceptives.
- (2) **Write the correlated terms :**  
Ethane :  $\text{CH}_3 - \text{CH}_3$  :: Ethene : .....

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

- (1) To observe the Hydra bud clearly, Raju should see it first under the low power lens and then under the high power lens in order to .....
  - (a) Lessen the area
  - (b) Wide area
  - (c) More buds
  - (d) All of these

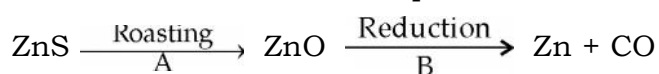
- (2) Inheritance of acquired characteristics is also called ..... inheritance.
- (a) hard (b) soft  
(c) acquired (d) crisscross
- (3) Iron is ..... .
- (a) more reactive than zinc  
(b) more reactive than aluminium  
(c) less reactive than copper  
(d) less reactive than aluminium
- (4) What is ethanoic acid which solidifies below 290K known as ?
- (a) Ice (b) Solid acetic acid  
(c) Glacial acetic acid (d) Ethyl acetate
- (5) Which of the following solutions in water is green in colour ?
- (a)  $\text{CuSO}_4$  (b)  $\text{FeSO}_4$   
(c)  $\text{ZnSO}_4$  (d)  $\text{Al}_2(\text{SO}_4)_3$

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

- (1) Give scientific reason :  
In humans male testes are located outside the abdominal cavity in the scrotum.
- (2) Give scientific reason :  
The graphite (carbon) anodes are periodically replaced during the electrolysis of fused alumina.
- (3) Draw neat and labelled diagram of Longitudinal section of flower.
- (4) Distinguish between Diamond and Graphite.
- (5) Give the embryological evidence to support the theory of evolution.
- (6) Explain the following chemical reaction with the help of balanced equation :  
Calcium reacts with cold water.
- (7) Define the following :  
(a) Tinning (b) Saturated hydrocarbon.

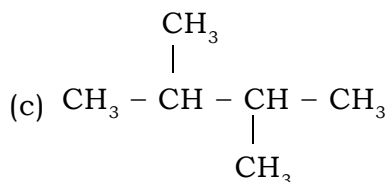
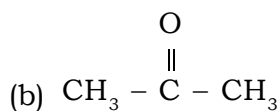
**Q.4. Answer the following in brief : (Any 5)****15**

- (1) How is sex determined in human beings?
- (2) How is nitrogen molecule ( $N_2$ ) formed ? Show its electron dot and cross structure.
- (3) (a) Write the functions of the following organ in reproduction :  
Vagina  
(b) Why does menstruation occur?
- (4) Explain the extraction of copper.
- (5) To obtain Zn from zinc sulphide two chemical reactions are involved



Write the equations for A and B.

- (6) Distinguish between Binary fission and Multiple fission.
- (7) Give the IUPAC name of the following compounds.  
(a)  $HCOOH$

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

- (1) Dolly was the first cloned sheep. She had three mothers but no father. From first mother diploid cell having  $2n$  chromosomes was selected. This cell was from udders of this sheep. From second mother egg was taken out. The haploid nucleus of the egg was removed by microsurgery. Now in this enucleated egg, diploid nucleus from udder's cell was inserted. This egg was then implanted in the uterus of a third sheep which was called the surrogate mother. Then one day Dolly was born. Later calf, monkey, cat, mice, etc. were also cloned.  
(a) Who can be called the real mother of Dolly? Why?  
(b) What is the meaning of surrogate mother?

- (c) Why had Dolly no father?
  - (d) Which cell nucleus was used in cloning Dolly?
  - (e) Which other animals have been cloned?
- (2) Explain the formation of sodium chloride with neat labelled diagram.

*Best Of Luck* 👍