

MT

2017 ____ 1100

Seat No.

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MT - SCIENCE & TECHNOLOGY - II (72) - SEMI PRELIM - I : PAPER - 5

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 : 3

- (1) gives rise to variety and diversity.
- (2) Mendel's experiments were based on a number of visible contrasting characters of the garden peas
- (3), a greenish coloured gas was used as a weapon in World War I.

Q.1. (B) Find the odd man out : 2

- (1) Syphilis, Gonorrhoea, Malaria, AIDS
- (2) Brass, Bronze, Steel, Antimony

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) The theory of natural selection was proposed by
 - (a) Mendel
 - (b) Lamarck
 - (c) Charles Darwin
 - (d) Robert Hooke

- (3) Which of the following solutions in water is blue in colour ?
(a) CuSO_4 (b) FeSO_4
(c) ZnSO_4 (d) $\text{Al}_2(\text{SO}_4)_3$
- (4) Ethanoic acid
(a) is odourless
(b) has a smell of ammonia
(c) has smell of rotten eggs
(d) has a vinegar like odour
- (5) Which of the following options is correct according to the reactivity of metals ?
(a) $\text{Zn} < \text{Al} < \text{Fe} < \text{Cu}$
(b) $\text{Zn} > \text{Al} > \text{Fe} > \text{Cu}$
(c) $\text{Cu} < \text{Fe} < \text{Zn} < \text{Al}$
(d) $\text{Cu} < \text{Fe} < \text{Al} < \text{Zn}$

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

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- (1) Give scientific reason :
Sexual reproduction brings about variation in species.
- (2) Give scientific reason :
Soaps are not effective in hard water.
- (3) Draw neat and labelled diagram of Human female reproductive system.
- (4) Distinguish between : Cations and Anions.
- (5) Define the following:
(a) Heredity (b) Phenotype
- (6) Explain the following chemical reaction with the help of balanced equation :
Aluminium reacts with steam.
- (7) Define the following:
(a) Galvanising (b) Unsaturated hydrocarbons

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

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- (1) Write short note on Lamarckism (Lamarckian inheritance).
- (2) Explain the reaction of sodium metal and PCl_3 on ethanol.

- (3) (a) Define Reproduction.
(b) Distinguish between Asexual reproduction and Sexual reproduction
- (4) Describe the Bayer's process for concentration of bauxite.
- (5) What is an alloy and give two examples.
- (6) Write short note on Budding in Hydra.
- (7) Give the IUPAC name of the following compounds :
- (a) $\text{CH}_3 - \text{CH} = \text{CH} - \text{CH}_3$
- (b) $\text{H} - \text{C} \equiv \text{C} - \text{H}$
- (c) $\begin{array}{cc} \text{H}_2\text{C} & - & \text{CH}_2 \\ | & & | \\ \text{Br} & & \text{Br} \end{array}$

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

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- (1) Write short note on Darwin's theory of evolution.
- (2) Explain the electrolytic reduction of alumina with neat labelled diagram.

Best Of Luck 🍀