

Four alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet.

10 × 1 = 10

1. The solar device used for seasoning of wood and desalination of sea water is
  - (A) solar cell
  - (B) solar collector
  - (C) solar heater
  - (D) solar lamp.
  
2. Which of the following elements has Octet Electronic Configuration ?
  - (A) Sodium ( atomic number is 11 )
  - (B) Argon ( atomic number is 18 )
  - (C) Calcium ( atomic number is 20 )
  - (D) Lithium ( atomic number is 3 ).
  
3. The disease caused by *Treponema pallidum* is
  - (A) Gonorrhoea
  - (B) Genital herpes
  - (C) Syphilis
  - (D) Hepatitis-B.



4. The component in Sonar, that converts ultrasonic waves into electrical signals is
- (A) detector
  - (B) transmitter
  - (C) converter
  - (D) analyser.
5. In the preparation of Jaggery, the compound used to slightly eliminate the dark colour of Jaggery is
- (A) norit
  - (B) hydrosol
  - (C) celotex
  - (D) cellulose.
6. The hormone that inhibits the growth of plant is
- (A) auxin
  - (B) gibberellin
  - (C) cytokinin
  - (D) abscisic acid.



7. The device which works on the principle of mutual induction is
- (A) motor (B) dynamo  
(C) transistor (D) transformer.
8. Parenchyma tissue filled with air in its intercellular spaces is
- (A) Chlorenchyma  
(B) Aerenchyma  
(C) Sclerenchyma  
(D) Collenchyma.
9. The compound that has greater rate of diffusion among  $C_2H_6$ ,  $C_3H_6$ ,  $CH_4$  and  $C_4H_{10}$  at normal temperature and pressure is
- (A)  $C_2H_6$  (B)  $C_3H_6$   
(C)  $C_4H_{10}$  (D)  $CH_4$ .
10. The types of plants in genotypic ratio of Mendel's monohybrid cross experiment are
- (A) 3 hybrid tall, 1 dwarf  
(B) 1 pure tall, 2 hybrid tall, 1 pure dwarf  
(C) 1 hybrid tall, 2 pure tall, 1 pure dwarf  
(D) 1 hybrid tall, 3 pure dwarf.



11. Match the names of organic compounds given in **Column-A** with their molecular formula given in **Column-B** and write the answer along with its letters :

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**Column - A**

- (A) Butyne  
(B) Methane  
(C) Propene  
(D) Benzene

**Column - B**

- (i) C<sub>6</sub>H<sub>6</sub>  
(ii) C<sub>4</sub>H<sub>8</sub>  
(iii) C<sub>4</sub>H<sub>6</sub>  
(iv) CH<sub>4</sub>  
(v) C<sub>3</sub>H<sub>8</sub>  
(vi) C<sub>6</sub>H<sub>12</sub>  
(vii) C<sub>3</sub>H<sub>6</sub>

**Answer the following questions.**

7 × 1 = 7

12. What is the function of bone marrow ?
13. State Boyle's law.
14. Tidal energy is more reliable than wind energy. Why ?
15. Write the ground state electronic configuration of carbon atom.
16. What is the effect of radioactive materials, when they react with biological molecules ?
17. Name the type of current produced when slip rings are replaced by split rings in a dynamo.
18. *n*-butane and iso-butane are called isomers. Why ?



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1. The number of groups and periods in the modern periodic table respectively, are  
(A) 7 and 9 (B) 18 and 7  
(C) 7 and 18 (D) 9 and 7.
2. The group of organisms that reproduce through fission only is  
(A) Amoeba, Hydra, Spyrogyra  
(B) Leishmania, Amoeba, Yeast  
(C) Amoeba, Plasmodium, Planaria  
(D) Plasmodium, Amoeba, Leishmania.
3. The correct statement related to digestion in small intestine is  
(A) acidic food is made alkaline by bile juice  
(B) food is made acidic by hydrochloric acid  
(C) starch is digested due to the action of amylase  
(D) protein is digested due to the action of pepsin.
4. Which of the following is ecofriendly ?  
(A) Thermal power plant  
(B) Hydropower plant  
(C) Biogas plant  
(D) Nuclear power station.



5. Observe the food chain given below :

Grass  $\rightarrow$  Grass hopper  $\rightarrow$  Frog  $\rightarrow$  Snake  $\rightarrow$  Eagle.

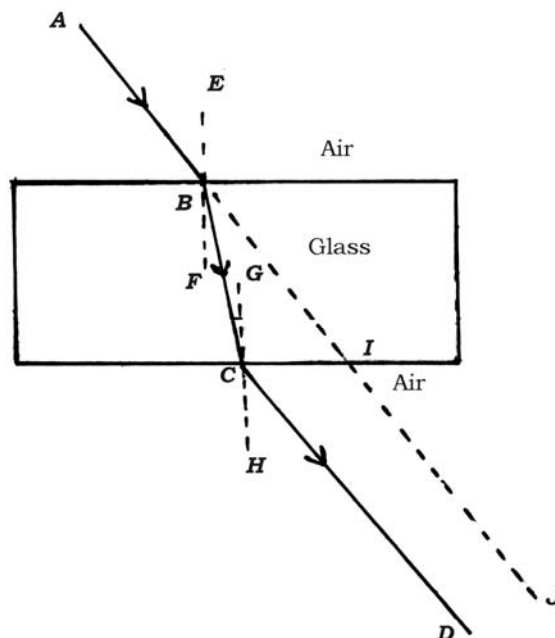
If the energy available at first trophic level is 5000 J, then the amount of energy available for snake is

- (A) 500 J (B) 5 J  
(C) 0.5 J (D) 50 J.

6. The possible chemical reaction among the following is

- (A)  $\text{FeSO}_4 + \text{Pb} \rightarrow \text{PbSO}_4 + \text{Fe}$   
(B)  $\text{ZnSO}_4 + \text{Fe} \rightarrow \text{FeSO}_4 + \text{Zn}$   
(C)  $2 \text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{Ag}$   
(D)  $\text{PbCl}_2 + \text{Cu} \rightarrow \text{CuCl}_2 + \text{Pb}$ .

7. Identify the emergent ray in the given figure.



- (A) CD (B) BC  
(C) AB (D) IJ.





11. The names of devices are given in **Column-A** and corresponding functions are given in **Column-B**. Match them and write the answer along with its letters :

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**Column - A**

**Column - B**

- |                        |   |
|------------------------|---|
| (A) Commutator         | (i) detects the presence of electric current in a circuit |
| (B) Fuse               | (ii) converts mechanical energy into electrical energy    |
| (C) Galvanometer       | (iii) measures the potential difference                   |
| (D) Electric generator | (iv) shows the direction of the motion of the conductor   |
|                        | (v) protects the electrical appliances                    |
|                        | (vi) reverses the direction of current                    |
|                        | (vii) converts electrical energy into mechanical energy   |

**Answer the following questions.**

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12. What is the centre of curvature of a spherical mirror ?
13. Name the products of anaerobic respiration.
14. What is a covalent bond ?
15. What is the function of pupil of the human eye ?
16. Micro-organisms like bacteria are called decomposers. Why ?
17. Name the first member of alkynes and write its molecular formula.
18. Name the factors responsible for speciation.

