

2SM

SECOND MIDTERM TEST - 2019**10 - Std****SCIENCE****PART - I**

Marks : 50

Time : 1.30 Hrs.

Note : i) Answer all the questions. ii) Choose the most suitable answer and write the code with corresponding answer. $10 \times 1 = 10$

1. Velocity of sound in solids, liquids and gases is as follows
 a) $V_s < V_l > V_g$ b) $V_g > V_l > V_g$
 c) $V_s > V_l > V_g$ d) $V_s < V_l < V_g$
2. The velocity of sound in air at a particular temperature is 330 mS^{-1} . What will be its when temperature is doubled and the pressure is halved?
 a) 330 mS^{-1} b) 165 mS^{-1} c) $330 \times \sqrt{2} \text{ mS}^{-1}$ d) $320 \times 2 \text{ mS}^{-1}$
3. In the nuclear reaction $_6X^{12} \xrightarrow{\alpha \text{ decay}}$ the value of A and Z
 a) 8, 6 b) 8, 4 c) 4, 8 d) Cannot be determined with the given data
4. Which of the following is not coming under Element + Element \rightarrow Compound
 a) $C_{(s)} + O_2(g) \rightarrow CO_{2(a)}$ b) $2K_{(s)} + Br_2 \rightarrow 2KBr_{(s)}$
 c) $2CO_{(g)} + O_2(g) \rightarrow 2C$ d) $4Fe_{(s)} + 3O_2(g) \rightarrow 2Fe_2O_3(s)$
5. The chemical equation $H_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) \downarrow + 2NaCl(aq)$ represents which of the following types of reaction
 a) Neutralisation b) combustion
 c) precipitation d) single displacement
6. Among the following homologs, which are successive member in any series
 a) C_3H_8 and C_4H_{10} b) C_2H_2 and C_2H_4
 c) CH_4 and C_3H_6 d) C_2H_5OH and C_4H_8OH
7. The term ethnobotany was coined by
 a) Khorana b) J.W. Harsberger c) Ronald Ross d) Hugo de Vries
8. The miracle rice which saved million of lives and celebrated its 50th birthday is
 a) IR8 b) IR24 c) Atomita d) Ponni
9. World 'No Tobacco Day' is observed on
 a) May 31 b) June 6 c) April 22 d) October 2
10. Where does alcohol affect immediately after drinking
 a) Eyes b) auditory region c) liver d) central nervous system

PART - II

- II Note : Answer any five questions. (Q.No. 17 is compulsory). $5 \times 2 = 10$**
11. Explain, why the ceilings of concert halls are curved.
 12. Define : one roentgen.
 13. How does pH play an important role in everyday life?
 14. Classify the following compounds based on the pattern of carbon chain and give their structural formula i) Propane ii) Benzene iii) Cyclobutane iv) Furan
 15. Why is Archaeopteryx considered to be connecting link?
 16. Differentiate between outbreeding and inbreeding.
 17. The hydroxide ion concentration of a solution is 1×10^{-11} M. What is the pH of the solution?

PART - III

- III Note : Answer any 4 questions. (Q.No. 23 is compulsory). $4 \times 4 = 16$**
18. What are the factors that affect the speed of sound in gases?
 19. Compare the properties of alpha, beta and gamma radiations.
 20. Explain the types of double displacement action with example.
 21. How is ethanol manufactured from cane?
 22. Explain gene cloning technique with diagram.
 23. A radon specimen emits a radiation of 3.7×10^3 GBq per second. Convert this disintegration infen curie.

PART - IV

Note : i) Each question carries 7 marks. ii) Draw diagram wherever necessary. $2 \times 7 = 14$

24. What is a nuclear reactor? Explain the essential parts with their functions.

(OR)

Explain the factors influencing the rate of a reaction.

25. Natural selection is a driving force for evolution. How?

(OR)

- a) Define : genetic engineering.
- b) What are the achievements of mutation breeding?
- c) What are the achievements of polyploidy breeding?

