

2SM

SECOND MIDTERM TEST - 2019

10 - Std

SCIENCE

Time : 1.30 Hrs

PART - I

Marks : 50

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

- Velocity of sound in solids, liquids and gases is as follows
 - $V_s < V_l > V_g$
 - $V_g > V_l > V_g$
 - $V_s > V_l > V_g$
 - $V_s < V_l < V_g$
- The velocity of sound in air at a particular temperature is 330 m s^{-1} . What will be its when temperature is doubled and the pressure is halved?
 - 330 m s^{-1}
 - 165 m s^{-1}
 - $330 \times \sqrt{2} \text{ m s}^{-1}$
 - $320 \times 2 \text{ m s}^{-1}$
- In the nuclear reaction ${}_6\text{X}^{12} \xrightarrow{\alpha \text{ decay}} {}_Z\text{Y}^A$ the value of A and Z
 - 8, 6
 - 8, 4
 - 4, 8
 - Cannot be determined with the given data
- Which of the following is not coming under Element + Element \rightarrow Compound
 - $\text{C}_{(s)} + \text{O}_{2(g)} \rightarrow \text{CO}_{2(g)}$
 - $2\text{K}_{(s)} + \text{Br}_2 \rightarrow 2\text{KBr}_{(s)}$
 - $2\text{CO}_{(g)} + \text{O}_{2(g)} \rightarrow 2\text{CO}_{2(g)}$
 - $4\text{Fe}_{(s)} + 3\text{O}_{2(g)} \rightarrow 2\text{Fe}_2\text{O}_{3(s)}$
- The chemical equation $\text{Na}_2\text{SO}_{4(aq)} + \text{BaCl}_{2(aq)} \rightarrow \text{BaSO}_{4(s)} \downarrow + 2\text{NaCl}_{(aq)}$ represents which of the following types of reaction
 - Neutralisation
 - combustion
 - precipitation
 - single displacement
- Among the following homologs, which are successive member in any series
 - C_3H_8 and C_4H_{10}
 - C_2H_2 and C_2H_4
 - CH_4 and C_3H_6
 - $\text{C}_2\text{H}_5\text{OH}$ and $\text{C}_4\text{H}_8\text{OH}$
- The term ethnobotany was coined by
 - Khorana
 - J.W. Harsbberger
 - Ronald Ross
 - Hugo de Vries
- The miracle rice which saved million of lives and celebrated its 50th birthday is
 - IR8
 - IR24
 - Atomita
 - Ponni
- World 'No Tobacco Day' is observed on
 - May 31
 - June 6
 - April 22
 - October 2
- Where does alcohol affect immediately after drinking
 - Eyes
 - auditory region
 - liver
 - 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} is. 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 reaction with example.
21. How is ethanol manufactured from sugarcane?
22. Explain gene cloning technology with diagram.
23. A radon specimen emits radiation of 3.7×10^3 GBq per second. Convert this disintegration into Curie.

PART - IV

Note : i) Each questions 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?