

Class : 10

Register Number  **C H E N N A I**

**SECOND MID TERM TEST -2022-23**  
**SCIENCE**

Time Allowed : 1.30 Hours

PART - I

[Max. Marks : 50]

I. Choose the correct answer and write the code with the corresponding answer. 9x1= 9

1. The frequency, which is audible to the human ear is  
(a) 50 KHz (b) 20 KHz (c) 1500 KHz (d) 1000 KHz
2. Kamini reactor is located at  
(a) Rajasthan (b) Kalpakkam (c) Koodankulam (d) Mumbai
3. Which of the following statements are correct about a chemical equilibrium?  
i) It is dynamic in nature  
ii) The rate of the forward and backward reactions are equal at equilibrium.  
iii) Irreversible reactions do not attain chemical equilibrium.  
iv) The concentration of reactions and products may be different.  
(a) (i), (ii) and (iii) (b) (i), (ii) and (iv) (c) (ii), (iii) and (iv) (d) (i), (iii) and (iv)
4. The molecular formula of an open chain organic compound is  $C_3H_6$ . The class of the compound is  
(a) Alkane (b) Alkyne (c) Alkene (d) Alcohol
5. TFM in soaps represents -----content in soap  
(a) Carbohydrate (b) Mineral (c) Vitamin (d) Fatty Acid
6. The "use and disuse theory" was proposed by  
(a) Charles Darwin (b) Ernst Haeckel  
(c) Jean Baptiste Lamarck (d) Gregor Mendel
7. We can cut the DNA with the help of  
(a) Knife (b) Restriction endonucleases  
(c) Scissors (d) RNAase
8. World 'No Tobacco Day' is observed on  
(a) May 31 (b) June 6 (c) April 22 (d) October 2
9. Where does alcohol effect immediately after drinking?  
(a) Eyes (b) Auditory region  
(c) Liver (d) Central Nervous System

PART - II

Answer any four of the following questions. (Q.No.15 is compulsory)

4x2=8

10. Mention two cases in which there is no Doppler effect in sound?
11. Fill in the blanks:  
i) A reaction between an acid and a base is called -----  
ii) The normal  $P^H$  of human blood is -----

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12. Why is Archaeopteryx considered to be a connecting link?
13. Distinguish between:  
Somatic gene therapy and germ line gene therapy.
14. What is metastasis?
15. The hydroxide ion concentration of a solution is  $1 \times 10^{-11}$  M. What is the  $P^H$  of the solution?

## PART - III

Answer any three of the following. (Q.No.20 is compulsory)

3x4=12

16. Explain why, the ceilings of concert halls are curved.
17. Differentiate reversible and irreversible reactions.
18. How is ethanoic acid prepared from ethanol? Give the chemical equation.
19. i) State the application of DNA finger printing technique.  
ii) How does insulin deficiency occur?
20. (i) A Cobalt specimen emits induced radiation of 75.6 millicurie per second. Convert this disintegration into becquerel [one curie =  $3.7 \times 10^{10}$  Bq]  
(ii) The degenerated wing of a Kiwi is an acquired character. Why is it an acquired character?

## PART - IV

Answer all the questions.

Draw the diagram wherever necessary.

3x7=21

21. a) i) What do you understand by the term "ultrasonic vibration"?  
ii) State the uses of ultrasonic vibrations.  
iii) Name two animals which can hear ultrasonic vibrations. (OR)
- b) i) What is a nuclear reactor? Explain its essential parts with their functions.  
ii) When and where was the first nuclear reactor built?
22. a) i) What is a chemical equilibrium?  
ii) Explain the factors influencing the rate of a reaction. (OR)
- b) i) How do detergents cause water pollution? Suggest remedial measures to prevent its pollution.  
ii) What is called homologous series? Give any three of its characteristics.
23. a) i) Natural selection is a driving force for evolution - How?  
ii) Define: Ethnobotany. (OR)
- b) i) Suggest measures to overcome the problems of an alcoholic.  
ii) Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes, suggest measures for prevention.