KOMARASAMY GOUNDER MAT.HR.SEC.SCHOOL – KURUMANDUR

FIRST 20 % PORTION TEST – OCT – 2023

X – STANDARD

TIME : 1.30 HOURS SCIENCE MARKS : 50

PART – A

I.CHOOSE THE CORRECT ANSWER : 10 X 1 = 10

1. If a sound wave travels with a frequency of 1.25×10^4 Hz at 344 ms^{-1}, the wavelength will be ____.

a) 27.52 m b) 275.2 m c) 0.02752 m d) 2.752 m.

2. When sound travels from air to water, which parameter does not change?

a) Wavelength b) Frequency c) Velocity d) Temperature.

3. The sound waves are reflected from an obstacle into the same medium from which they were incident. Which of the following changes?

a) speed b) frequency c) wavelength d) none of these.

4. Photolysis is a decomposition reaction caused by:

a) heat b) electricity c) light d) mechanical energy

5.The chemical equation

$Na_2SO_{4(aq)} + BaCl_{2(aq)} \rightarrow BaSO_{4(s)}\downarrow + 2NaCl_{(aq)}$ represents which of the following types of reaction?

a) Neutralisation b) Combustion

c) Precipitation d) Single displacement

6. The 'use and disuse theory' was proposed by ____.

a) Charles Darwin b) Ernst Haeckel

c) Jean Baptiste Lamarck d) Gregor Mendel.

7. The term Ethnobotany was coined by ____.

a) Khorana b) J.W. Harshberger

c) Ronald Ross d) Hugo de Vries.

8. Book 'Philosophic Zoologique' published in the year 1809 was written by:

a) Darwin b) Lamarck c) Wallace d) Mendel

9. Pusa Komai is a disease resistant variety of:

a) sugarcane b) rice c) cow pea d) maize

10. In hexaploid wheat (2n = 6x = 42) the haploid (n) and the basic(x) number of chromosomes are:

a) n = 7 and x = 21 b) n = 21 and x = 21

c) n = 1 and x = 1 d) n = 21 and x = 7

PART – B

II.ANSWER ANY "5" OF THE FOLLOWING : **5 X 2 = 10**

QUESTION NUMBER "13" IS COMPULSORY.

11. State the laws of reflection of sound.

12. MATCH THE FOLLOWING :

1. Infrasonic	**-**	**a) Compressions**
2. Echo	**-**	**b) 22 kHz**
3. Ultrasonic	**-**	**c) 10 Hz**
4. High-pressure region	**-**	**d) Ultrasonography**

13. A source producing a sound of frequency 500 Hz is moving towards a listener with a velocity of 30 ms^{-1}. The speed of the sound is 330 ms^{-1}. What will be the frequency heard by the listener?

14. When an aqueous solution of potassium chloride is added to an aqueous solution of silver nitrate, a white precipitate is formed. Give the chemical equation of this reaction.

15. How can you determine the age of the fossils?

16. Define genetic engineering.

17. Name two maize hybrids rich in amino acid lysine.

PART – C

III.ANSWER ANY "4" OF THE FOLLOWING : **4 X 4 = 16**

QUESTION NUMBER "23" IS COMPULSORY.

18. Mention two cases in which there is no Doppler effect in sound?

19. What is chemical equilibrium? What are its characteristics?

20. Define Ethnobotany and write its importance.

21. How do you differentiate homologous organs from analogous organs?

22. Distinguish between

a) Somatic gene therapy and germline gene therapy.

b) Undifferentiated cells and differentiated cells.

23. A source of sound is moving with a velocity of 50 ms^{-1} towards a stationary listener. The listener measures the frequency of the source as 1000 Hz. what will be the apparent frequency of the source when it is moving away from the listener after crossing him? (velocity of sound in the medium is 330 ms^{-1}).

PART – D

IV.ANSWER THE FOLLOWING : **2 X 7 = 14**

24. What is mean by the reflection of sound? Explain.

Or

i) Explain the types of double displacement reactions with examples.

ii) What is chemical equilibrium?

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

Or

i) Describe mutation breeding with an example.

ii) What are the effects of hybrid vigour in animals.