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 Melacauvery, Kumbakonam - Thanjavur District (02.12.24)

SECOND MIDTERM EXAMINATION NOVEMBER-2024

CLASS :10

SCIENCE

MARKS : 50

TIME :1.30

10 X 1 = 10

I. Choose the best answer

1. The frequency, which is audible to the human ear is
 a) 50 kHz b) 20 kHz c) 15000 kHz d) 10000 kHz
 2. Gamma radiations are dangerous because
 a. it affects eyes & bones b. it affects tissues c. it produces genetic disorder
 d. it produces enormous amount of heat
 3. In the nuclear reaction ${}^6X^{12} \xrightarrow{\alpha \text{ decay}} {}^ZY^A$, the value of A & Z.
 a. 8, 6 b. 8, 4 c. 4, 8 d. cannot be determined with the given data
 4. Reaction between carbon and oxygen is represented by $C(s) + O_2(g) \rightarrow CO_2(g) + \text{Heat}$.
 In which of the type(s), the above reaction can be classified?
 (i) Combination Reaction (ii) Combustion Reaction
 (iii) Decomposition Reaction (iv) Irreversible Reaction
 a. i and ii b. i and iv c. i, ii and iii d. i, ii and iv
 5. TFM in soaps represents _____ content in soap
 a. mineral b. vitamin c. fatty acid d. carbohydrate
 6. The 'use and disuse theory' was proposed by _____
 a. Charles Darwin b. Ernst Haeckel c. Jean Baptiste Lamarck d. Gregor Mendel
 7. Organisms with modified endogenous gene or a foreign gene are also known as
 (a) transgenic organisms (b) genetically modified (c) mutated (d) both a and b
 8. Which type of cancer affects lymph nodes and spleen?
 a) Carcinoma b) Sarcoma c) Leukaemia d) Lymphoma
 9. A renewable source of energy is
 a) petroleum b) coal c) nuclear fuel d) trees
 10. Green house effect refers to
 a) cooling of earth b) trapping of UV rays c) cultivation of plants d) warming of earth
- II. Write any 5 questions (question no 18th is compulsory).** **5 X 2 = 10**
11. Why does sound travel faster on a rainy day than on a dry day? **TTK-10-SCI-EM-1**

12. Define one Roentgen.
13. Differentiate soaps and detergents.
14. Why is Archaeopteryx considered to be a connecting link?
15. State the applications of DNA fingerprinting technique.
16. What are psychotropic drugs?
17. What is the environmental effect caused by sewage?
18. Calculate the amount of energy released when a radioactive substance undergoes fusion and results in a mass defect of 2 kg.

III. Write any four questions (25th question is compulsory). 4 X 4 = 16

19. Compare any four properties of alpha, beta and gamma radiations
20. What is a chemical equilibrium? What are its characteristics?
21. Define Ethno botany and write its importance.
22. Discuss the importance of biotechnology in the field of medicine.
23. a) How is a cancer cell different from a normal cell ?
b) Differentiate between Type-1 and Type-2 diabetes mellitus.
24. How do rainwater harvesting structures recharge ground water?
25. a) Calculate the pH of 0.001 molar solution of HCl.
b) The hydroxide ion concentration of a solution is 1×10^{-11} M. What is the pH of the solution?

IV. Write all the question

7 x 2 = 14

26. a) What do you understand by the term 'ultrasonic vibration'?
b) State three uses of ultrasonic vibrations.
c) Name three animals which can hear ultrasonic vibrations. (OR)
27. Give the balanced chemical equation of the following reactions:
(i) Neutralization of NaOH with ethanoic acid.
(ii) Evolution of carbon dioxide by the action of ethanoic acid with NaHCO_3 .
(iii) Oxidation of ethanol by acidified potassium dichromate.
(iv) Combustion of ethanol.
28. a) Natural selection is a driving force for evolution-How?
b) Differentiate between out breeding and inbreeding.
(OR)
29. a) Suggest measures to overcome the problems of an alcoholic.
b) What are the consequences of deforestation?

TTK-10-SCI-EM-2