COMMON SECOND MID-TERM TEST - 2019

K

Standard X   Reg. No. : | 10 | R | 3 | 1 | 1 | 4 |

Time: 1.30 hours.   **SCIENCE**   Marks: 50

I. Choose the correct answer: 6 x 1 = 6

1. If a sound wave travels with a frequency of 1.25×10^4 Hz at 344 ms^{-1} the wavelength will be _____.
   a) 27.25 m   b) 275.2 m   c) 0.02752 m   d) 2.752 m

2. The energy released in a nuclear fission process is about _____.
   a) 20 MeV   b) 2000 MeV   c) 200 MeV   d) 2 MeV

3. Which of the following is not an "element + element → compound" type reaction?
   a) $C_{(s)} + O_{(g)} \rightarrow CO_{2(g)}$ b) $2K_{(s)} + Br_{2(l)} \rightarrow 2KBr_{(s)}$
   c) $2CO_{(g)} + O_{2(g)} \rightarrow 2CO_{2(g)}$ d) $4Fe_{(s)} + 3O_{2(g)} \rightarrow 2FeO_{3(s)}$

4. TFM in soaps represents _____ contents in soap.
   a) mineral   b) vitamin   c) fatty acid   d) carbohydrate

5. _____ is called the father of palaeontology.
   a) leonardo da Vinci   b) Charles Darwin
   c) Lamarck   d) H.M.S.Beagle

6. World "No Tobacco Day" is observed on
   a) May 31   b) June 6   c) April 22   d) October 2

II. Answer any 5 questions: (Ques.No.9 is compulsory)   5 x 2 = 10

7. Mention two cases to which there is no Doppler effect in sound.

8. Match the following:
   a) Soddy Fajan   -   Natural radio activity
   b) Irene Curie   -   Displacement law
   c) Henry Bequerel   -   Mass energy equivalence
   d) Albert Einstein   -   Artificial Radio activity

9. What would be the pH of an aqueous solution of sulphuric acid which is 5×10^{-5} mol li^{-1} in concentration?

10. Classify the following compounds based in the pattern of carbon chain and give their structural formula.
    a) propane   b) benzene   c) cyclobutane   d) furan

11. Answer in a word or sentence:
    a) Which organism is considered to be the fossil bird?
    b) What is the study of fossils called?

12. State whether true or false. If false, write the correct statement.
    a) Molecular scissors refers to DNA ligases.
    b) Golden rice is a hybrid.

13. Fill in the blanks:
    a) Blood cancer is called _____.
    b) Insulin resistance is a condition in _____ diabetes mellitus.

14. How is a cancer cell different from a normal cell?

III. Answer any 5 questions: (Ques.No.16 is compulsory) $5 \times 4 = 20$

15. What is mean by reflection of sound? Explain .
    a) Reflection at the boundary of a rarer medium.
    b) Reflection at curved surfaces.

16. a) $_{92}U^{235}$ experiences one α-decay and one β-decay. Find number of neutrons in the final daughter nucleus that is formed.
    b) Use the analogy to fill in the blanks:
       i) Increasing crops : Radio phosphorous
          Effective functioning of heart : _____ .
       ii) Deflected by electric field : α ray,
          Null deflected : _____ .

17. What is a chemical equilibrium? What are its characteristics?

18. Differentiate soaps and detergents.

19. a) Why is Archaeopteryx considered to be a connecting link?
    b) How can you determine the age of the fossils?

20. With a neat labelled diagram explain the techniques involved in gene cloning.

21. Suggest measures to overcome the problems of an alcoholic.

22. What is the role of fat in the cause of atherosclerosis?

IV. Answer any 2 questions: $2 \times 7 = 14$

23. a) State two conditions necessary for hearing an echo.
    b) What is a nuclear reactor? Explain its essential parts with their functions.

(or)

24. a) A solid compound "A" decomposes on heating into "B" and a gas "C". On passing the gas "C" through water, it becomes acidic. Identify A,B and C.
    b) The molecular formula of an alcohol is $C_4H_{10}O$. the locant number of its –OH group is 2.
       i) Draw its structural formula
       ii) Give its IUPAC name.

25. a) Define Ethnobotany.
    b) How do you differentiate homologous organs from analogous organs.

(or)

26. a) Discuss the importance of biotechnology in the field of medicine.
    b) Organic farming is better than Green Revolution. Give reasons.

******