HALF YEARLY EXAMINATION -2025

CLASS:10

SCIENCE

Reg.No

Time : 3.00 Hours

MARKS : 75

Instructions :

❖ Write clearly and legibly without mistakes and overwriting utilising the maximum time allotted for the exam.

❖ Answer should be in your own style without changing the main core concept.

❖ Use only black or blue ink pen to write the exam.

❖ Draw clear diagrams wherever necessary.

I   Choose the correct answer.   12x1=12

1. The eye defect presbyopia can be corrected by ....
   a) Convex lens   b) Concave lens   c) Convex mirror   d) Bifocal lenses

2. If a substance is heated or cooled the change in mass of that substance is ....
   a) positive   b) negative   c) zero   d) none of the above

3. The frequency which is audible to the human ear is ....
   a) 50 Hz   b) 35 kHz   c) 55 kHz   d) 1000kHz

4. Mass of one mole of Nitrogen atom is ....
   a) 14 g   b) 14 amu   c) 28 amu   d) 28 g

5. Which of the following is the universal solvent?
   a) acetone   b) benzene   c) water   d) alcohol

6. The organic compound which can be used as painkiller is ....
   a) alcohols   b) ethers   c) ketones   d) esters

7. Kreb's cycle takes place in ....
   a) Chloroplast   b) Mitochondrial matrix
   c) Stomata   d) Inner mitochondrial membrane

8. The brain of leech lies above the ....
   a) mouth   b) pharynx   c) crop   d) buccal cavity

9. LH is secreted by ....
   a) Adrenal gland   b) Anterior pituitary   c) Thyroid gland   d) Hypothalamus

10. Anemophilous flowers have ....
    a) Sessile stigma   b) Small smooth stigma   c) Coloured flower   d) Large feathery stigma

11. The use and disuse theory was proposed by ....
    a) Charles Darwin   b) Ernst Haeckel   c) Jean Babtiste Lamarck   d) Gregor Mendel

12. Cancer of the epithilial cells is called ....
    a) Leukemia   b) Sarcoma   c) Carcinoma   d) Lipoma

II   Answer any seven of the following. (Q.No.22 is Compulsory)   7x2=14

13. State Boyle's law.

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

15. What is rust? Give the chemical equation.

16. What is chemical equillibrium?

17. List out parasitic adaptations in Leech.

18. Draw a neat labelled diagram of a neuron.

19. How can you calculate the age of fossils?

20. Define reflex arc.

21. **Match the following :**

   a) Script area   -   animation software

   b) folder   -   type notes

   c) scratch   :   store files

   d) note pap   -   build script

22. Calculate the resistance of a conductor through which a current of 2A passes, when the potential difference between its ends is 30V.

III Answer any seven of the following. (Q.No. 32 is compulsory)   7x4=28

23. i) Why are traffic signals red in colour?

   ii) State Rayleigh's law of scattering.

24. i) Define critical mass.

   ii) Give any two uses of radio isotopes in the field of agriculture.

25. Give the salient features of modern atomic theory

26. What is the pH of 1.0×10^{-5} molar solution of KOH?

27. i) Name the hormones secreted during emergency situation in man.

   ii) Why are thyroid hormones referred as personality hormone?

28. i) What are allosomes?

   ii) What do you understand by the term phenotype and genotype?

29. Differentiate aerobic and unaerobic respiration.

30. i) What are the agents of soil erosion?

   ii) How are e-waste generated?

31. State the applications of DNA finger printing technique.

32. A is reddish brown metal which combine with O_2 at <1370K gives B a black coloured compound, at a temperature >1370K A gives C which is red in colour. Find A, B and C.

IV Answer the following in detail :-   3x7=21

33. a) State and prove law of conservation of linear momentum   **[OR]**

   b) i) What connection is used in domestic appliances and why?

   ii) An alloy of Nickel chromium is used as heating element, why?

   iii) How does a fuse wire protect electrical appliances?

34. a) i) Define solubility.

   ii) Write a note on various factors affecting solubility.   **[OR]**

   b) Give the balanced chemical equation of the following.

   i) Neutralization of NaOH with ethanoic acid.

   ii) Oxidation of ethanol by acidified potassium dichromate .

   iii) Combustion of ethanol.

35. a) With a neat labelled diagram describe an angiospermic ovule. **[OR]**

   b) i) What are the contributing factors for obesity?

   ii) Differentiate type - 1 and type - 2 diabetes mellitus.