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Reg. No.: | | | | | | |

COMMON HALF YEARLY EXAMINATION - 2025

Std - X

SCIENCE

Time : 3.00 Hours | Marks:75

Part - I

12 x 1 = 12

I. Answer all the questions:

1. Inertia of a body depends on
   a) weight of the object b) acceleration due to gravity of the planet
   c) mass of the object d) both a and b
2. The value of universal gas constant
   a) 3.81 $Jmol^{-1} K^{-1}$ b) 8.03$Jmol^{-1} K^{-1}$ c) 1.38 $Jmol^{-1} K^{-1}$ d) 8.31$Jmol^{-1} K^{-1}$
3. Kilowatt hour is the unit of
   a) resistivity b) conductivity c) electrical energy
   d) electrical power
4. Match the following
   1) Fe-59 - Age of fossil
   2) I - 131 - function of heart
   3) Na-24 - Leukemia
   4) C-14 - Thyroid disease
   a) 1-iii 2-iv 3-ii 4-i b) 1-iv 2-ii 3-i 4-iii
   c) 1-iv 2-iii 3-i 4-iv d) 1-i 2-ii 3-iv 4-iii
5. Which of the following is a triatomic molecule?
   a) Glucose b) Helium c) Carbondoxide d) hydrogen
6. A 25% alcohol solution means
   a) 25ml alcohol in 100 ml of water b) 25ml alcohol in 25 ml of water
   c) 25 ml alcohol in 75 ml of water d) 75 ml of alcohol in 25ml of water
7. The pH value for human blood is .....
   a) 6.5 b) 7.4 c) 4.5 d) 2.5
8. TFM in soaps represents ..... content in soap.
   a) mineral b) vitamin c) fatty acid d) carbohydrate
9. In leech locomotion is performed by
   a) Anterior sucker b) Posterior sucker c) Setal
   d) looping or crawling movement
10. Identify the exocrine gland
    a) Pituitary gland b) Adrenal gland c) Salivary gland d) Thyroid gland
11. Which among the following e-waste causes chronic damage to brain and respiratory system
    a) mercury b) lead c) chromium d) cadmium
12. Where you will create category of blocks?
    a) block palette b) blockmenu c) script area d) sprite

Part - II

II. Answer any 7 of the following questions. (Question No. 22 is compulsory) 7 x 2 = 14

13. Differentiate convex lens and concave lens.
14. Why does sound travel faster on a rainy day than on a dry day.
15. What is molar volume of a gas.
16. Give an example each.
    i) Gas in liquid ii) solid in liquid iii) solid in solid iv) gas in gas
17. Name the simplest ketone and give its structural formula.
18. What is respiratory quotient?
19. What is the importance of values in the heart?

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20. Draw the following diagram, mention its parts.

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

Part - III

III. Answer any 7 of the following questions (Q. No. 32 compulsory): **7 x 4 = 28**

23. a) Define moment of a couple (2)
    b) State the principle of moments. (2)
24. a) What is co-efficient of cubical expansion? (2)
    b) State Boyle's law. (2)
25. List the merits of LED bulb.
26. Calculate the % of oxygen in $Al_2(SO_4)_3$
    (Atomic mass; Al=12, O=16, S=32)
27. Differentiate reversible and irreversible reactions.
28. Our body contains a large number of cells "L" which are the longest cells in the body. "L" has long and short branch called as "M" and "N" respectively. There is a gap "O" between two "L" cells, through which nerve impulse transfer by release of chemical substance "P".
    i) Name the cells "L" . ii) What are "M" and "N"?
    iii) Wha is the gap "O". iv) Name the chemical substance "P".
29. a) What is colostrum? How is milk production hormonally regulated? (2)
    b) What are allosomes? (2)
30. a) How can you determine the age of the fossils? (2)
    b) State the applications of DNA finger printing technique. (2)
31. What are the consequences of deforestation?
32. An organic compound 'A' is widely used as a preservative and has the molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'.
    a) Identify the compound A.
    b) Write the chemical equation for its reaction with ethanol to form compound B.
    c) Name the process.

Part - IV

IV. Answer all the questions. **3 x 7 = 21**

33. a) i) What is meant by electric current? (2)
    ii) Name and define its unit. (2)
    iii) Which instrument is used to measure the electric current? How should it be connected in a circuit? (2)
    iv) Name any two devices, which are working on the heating effect of the electric current? (1)
    (OR)
    b) i) What is stellar energy? (2)
    ii) Compare the properties of alpha, beta and gamma radiations. (5)
34. a) i) State the reason for addition of caustic alkali to bauxite ore during purification of bauxite. (2)
    ii) Along with cryolite and alumina, another substance is added to the electrolyte mixture. Name the substance and give one reason for the addition. (2)
    iii) Write 3 uses of an aluminium? (3)
    (OR)
    b) How is ethanol manufactured from sugarcane? (7)
35. a) i) Biofortification may help in removing hidden hunger. How? (5)
    ii) Bring out any two physiological activities of abscisic acid. (2) **(OR)**
    b) i) Suggest measures to overcome the problems of an alcoholic. (5)
    ii) Mention the diseases caused by tobacco smoke. (2)
