HTJ

HALF YEARLY EXAMINATION - 2025

10 - Std

SCIENCE

Time : 3.00 Hrs

Marks : 75

PART-I

I Note: i) **Answer all the questions. Ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.** **12 X 1 = 12**

1. The value of universal gas constant
   a) 3.81 J $mol^{-1}K^{-1}$ b) 8.03 J $mol^{-1}K^{-1}$
   c) 1.38 J $mol^{-1}K^{-1}$ d) 8.31 J $mol^{-1}K^{-1}$
2. _____ aprons are used to protect us from gamma radiations
   a) Lead oxide b) Iron c) Lead d) Aluminium
3. A charge of 12 coulomb flows through a bulb in 5 second. What is the current through the bulb?
   a) 60A b) 17A c) 2.4A d) 24A
4. Arrange the following media in descending order on the basis of speed of sound.
   a) air > glass> water b) water >air> glass
   c) glass <water <air d) glass> water> air
5. The number of periods and groups in the periodic table are———
   a) 6, 16 b) 7, 17 c) 8, 18 d) 7, 18
6. When the pressure is increased at constant temperature, the solubility of gases in liquid———
   a) No change b) increases c) decreases d) no reaction
7. The secondary suffix used in IUPAC nomenclature of an aldehyde is—————
   a)-ol b) -oic acid c)-al d)-one
8. The endarch condition is the characteristic feature of
   a) root b) stem c) leaves d) flowers
9. There are ———pairs of Cranial nerves and —————pairs of Spinal nerves.
   a) 2,31 b) 31,12 c) 12,13 d) 12,21
10. Pancreas acts as ———gland.
    a) Exocrine b) endocrine c) both (a) and (b) d) flying
11. Blood cancer is called———————
    a) Leukemia b) Sarcoma c) Carcinoma d) Lipoma
12. **Find the correct pair:**
    a) Gregor Johan Mendel - Theory of Natural Selection
    b) Waldeyer - Chromosomes
    c) Watson and Crick - Theory of Evolution
    d) Jean Baptiste Lamarck - Law of Heredity

PART-II

Note: Answer any seven questions. Question No.22 is compulsory. 7 X 2= 14

13. Define inertia. Give its classification.
14. Define: Atomicity. Give an example.
15. Classify the following substances into deliquescent, hygroscopic.
    a) Conc.sulphuric acid b) Copper Sulphate Pentahydrate c) Siliga gel
    d) Calcium Chloride e) Gypsum salt
16. Draw and Label the structure of "Oxysomes".
17. Differentiate Voluntary and Involuntary actions .
18. Define Triple fusion.
19. The degenerated wing of a Kiwi is an acquired character. Whyis it an acquired character?
20. What are psychotropic drugs?
21. What is Scratch?
22. In the nuclear reaction given below, the nucleus X changes to nucleus Y.
    ${}_{88}X^{226}$ —-> Y+ ${}_{2}He^{4}$+ energy. What are the atomic number and mass number of Y?

PART - III

Note: Answer any seven questions. Question No.32 is compulsory.

23. Describe Rocket Propulsion . **7 X 4 =28**
24. List any four properties of Light.
25. a) Write any two advantages of LED TV over the normal TV.
    b)What is Stellar energy?
26. How is metal corrosion prevented?
27. Differentiate reversible and irreversible reaction.
28. a)How does leach respire? b)How does leach suck blood from the host?
29. Write the physiological effects of Gibberellins.
30. a)What are the consequences of soil erosion? b)How will you prevent soil erosion?
31. Enumerate the functions of blood.
32. Calculate the number of moles in (i) 27g Al (ii) $1.51X10^{23}$ molecules of NH_4Cl.

PART - IV

Note. Answer all the questions.Draw diagram wherever necessary. 3 X 7 = 21

33 a) (i) State Jule's law of Heating. (ii) What is meant by electric current?
(iii) Name and define its unit. (iv) Kilowatt hour is the unit of———— **(OR)**

b) (i) Write any four medical applications of radio activity.

(ii) X-rays should not be taken often-Give reason.

34. a) Give the Salient features of 'Modern Atomic Theory'. ***(OR)***

    b) Explain the mechanism of cleansing action of Soap.

35. a) Differentiate the following: (i) Monocot root and Dicot root

    (ii) Aerobic and Anaerobic respiration. **(OR)**

    b) (i) With a neat labelled diagram , describe the parts of the typical angiospermicOvule.
    (ii) Name the secondary sex Organs in male.