

**Class : 10**

Register Number						
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**COMMON HALF YEARLY EXAMINATION, 2025 - 26**

Time Allowed : 3.00 Hours]

**SCIENCE**

[Max. 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. **12x1=12**

1. One Kilogram force equal to
  - a) 9.8 dyne
  - b)  $9.8 \times 10^4$  N
  - c)  $98 \times 10^4$  dyne
  - d) 980 dyne
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. Velocity of sound in a gaseous medium is  $330 \text{ ms}^{-1}$ . If the pressure is increased by 4 times without causing a change in the temperature, the velocity of sound in the gas
  - a)  $330 \text{ ms}^{-1}$
  - b)  $660 \text{ ms}^{-1}$
  - c)  $156 \text{ ms}^{-1}$
  - d)  $990 \text{ ms}^{-1}$
4. Which of the following is a monoatomic molecule?
  - a) Glucose
  - b) Helium
  - c) Carbon dioxide
  - d) Hydrogen
5. The molecular formula of green vitriol is a.
  - a)  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$
  - b)  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
  - c)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
  - d)  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
6. Rectified spirit is an aqueous solution which contains about \_\_\_\_\_ of ethanol.
  - a) 95.5%
  - b) 75.5%
  - c) 55.5%
  - d) 45.5%
7. The endarch condition is the characteristic feature of
  - a) Root
  - b) Stem
  - c) Leaves
  - d) Flower
8. During transpiration there is a loss of
  - a) Carbon dioxide
  - b) Oxygen
  - c) Water
  - d) None of the above
9. LH is secreted by
  - a) Adrenal Gland
  - b) Thyroid Gland
  - c) Anterior Pituitary
  - d) Hypothalamus
10. Down's syndrome is a case of
  - a) Euploidy
  - b) Deletion
  - c) Translocation
  - d) Aneuploidy
11. Pusa Komal is a disease resistant variety of
  - a) Sugarcane
  - b) Rice
  - c) Cow pea
  - d) Maize
12. Choose the non - renewable energy / resources
  - a) Solar energy
  - b) Water
  - c) Minerals
  - d) Wind

**Part - II****II. Note:** (i) Answer any seven questions.

(ii) Q.No.22 is compulsory.

**7x2=14**

13. State Rayleigh's law of scattering.
14. Name any two devices, which are working on the heating effect of electric current.
15. In Japan, some of the new born children are having congenital diseases. Why?
16. Fill in
  - a) The chief ore of Aluminium is \_\_\_\_\_
  - b) \_\_\_\_\_ is the longest period in the periodic table.

17. Why does the reaction rate of a reaction increase on raising the temperature?
18. Write the reaction for Photosynthesis.
19. **Say True or False.**
  - a) The phloem is responsible for the translocation of food.
  - b) White blood corpuscles are found in the lymph.
20. What is Bolting? how can it be induced artificially?
21. What do you understand by the term Phenotype and Genotype.
22. A charge of 12 Coulomb flows through a Bulb in 5 second. What is the Current through the Bulb?

### PART - III

**III. Note: Answer any seven questions. Q.No: 32 is compulsory.**

**7x4 = 28**

23. What are the types of Inertia? Explain with an example for each type.
24. Distinguish between ideal gas and Real gas.
25. a) What is the audible range of Frequency?  
b) Mention two cases in which there is no Doppler effect in sound.
26. Write any four Applications of Avogadro's Law.
27. Differentiate Soaps and Detergents?
28. a) Write the dental formula of Rabbit?  
b) How is Diastema formed in rabbit?
29. Classify neurons based on their Structure.
30. Write the importance of Ethnobotany.
31. State the Importance of Biofertilizer.
32. a) Calculate the number of moles in  $1.51 \times 10^{23}$  molecules of  $\text{NH}_4\text{Cl}$   
b) 3.5 Litres of Ethanol is present in 15 litres of aqueous solution of ethanol. Calculate volume Percentage of Ethanol solution.

### PART - IV

**IV. Note: Answer all the questions.**

**3x7=21**

**Draw diagram wherever necessary.**

33. a) (i) What is power of Accommodation of eye?  
(ii) Write any five differences between Myopia and Hypermetropia.

(OR)

- b) (i) Compare the Properties of Alpha, Beta and Gamma rays.

34. a) (i) Calculate the pH of  $1.0 \times 10^{-4}$  molar solution of  $\text{HNO}_3$   
(ii) How does pH play an important role in Everyday Life?

(OR)

- b) How is Ethanol manufactured from Sugarcane?

35. a) With a neat labelled diagram, describe the parts of a Typical Angiospermic Ovule.

(OR)

- b) (i) Suggest measures to overcome the problems of an alcoholic.  
(ii) Mention the Disease caused by Tobacco smoke.