

**Class : 10**Register  
Number**COMMON HALF YEARLY EXAMINATION - 2023-24**

Time Allowed : 3.00 Hours]

**SCIENCE**

[Max. Marks : 75

**PART - 1**

12x1=12

Choose the correct answer.

- In the Earth shrinks to 50% of its real radius its mass remaining the same, the weight of body on the Earth will  
a) decrease by 50%    b) increase by 50%    c) decrease by 25%    d) increase by 300%
- 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
- If a sound wave travels with a frequency of  $1.25 \times 10^4$  Hz at  $344 \text{ ms}^{-1}$ , the wavelength will be  
a) 27.52m    b) 275.2m    c) 0.02752m    d) 2.752m
- The gram molecular mass of  $\text{NH}_3$  is  
a) 17 g    b) 44 g    c) 18 g    d) 36 g
- Solubility of NaCl in 100 ml water is 36 g. If 20 g of salt is dissolved in 100 ml of water how much more salt is required for saturation.  
a) 12 g    b) 11 g    c) 16 g    d) 20 g
- Which of the following are used as anaesthetics?  
a) Carboxylic acid    b) Ethers    c) Esters    d) Aldehydes
- The membrane that is present around the lungs is  
a) Pleura    b) Capsule    c) Pericardium    d) None of the above
- A person who met with an accident lost control of body temperature, water balance and hunger, which of the following part of brain is supposed to be damaged?  
a) Medulla oblongata    b) Cerebrum    c) Pons    d) Hypothalamus
- Which one of the following is an IUCD?  
a) Copper T    b) Oral pills    c) Diaphragm    d) Tubectomy
- The best way of direct dating fossils of recent origin is by  
a) Radio - carbon method    b) Uranium lead method  
c) Potassium - Argon method    d) Both (a) and (c)
- Excessive consumption of alcohol leads to  
a) Loss of memory    b) Cirrhosis of liver  
c) State of hallucination    d) Suppression of brain function
- Which software is used to create animation?  
a) Paint    b) PDF    c) Ms word    d) Scratch

**Part - II**

Answer any seven questions. Q.No. 22 is compulsory.

7x2=14

- Why are traffic signals red in colour.
- Name any two devices, which are working on the heating effect of the electric current?
- State two conditions necessary for rusting of iron.
- Write any two differences between reversible and irreversible reactions.
- Write the reaction for photosynthesis.

CH / 10 / Sci / 1

**8. Match.**

- |                   |   |                           |
|-------------------|---|---------------------------|
| 1. Leukaemia      | - | a) Absence of antibody    |
| 2. Leucopenia     | - | b) Absence of antigen     |
| 3. AB blood group | - | c) Blood cancer           |
| 4. O blood group  | - | d) Decrease in leucocytes |

19. Which hormone requires Iodine for its formation? What will happen if intake of Iodine in our diet is low?
20. What do you understand by the term phenotype and genotype?
21. State the application of DNA finger printing technique.
22.  ${}_{88}\text{Ra}^{226}$  experiences three  $\alpha$ -decay. Find the number of neutrons in the daughter element.

**PART – III**

Answer any seven questions. Q.No: 32 is compulsory.

7x4 = 28

23. a) State Boyle's law.  
b) Distinguish between ideal gas and real gas.
24. a) What do you understand by the term "ultrasonic vibration"?  
b) Name three animals which can hear Ultrasonic Vibrations?
25. a) Give any two salient features of Modern atomic theory.  
b) Calculate the number of moles in 27g of Al.
26. a) What happens when  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  is Heated?  
b) In what way hygroscopic substances differ from deliquescent substances. (any two)
27. List the parasitic adaptations in leech.
28. Describe the structure of spinal cord.
29. i) State whether the following statements are true or false. If false correct the statement.  
a) Stalk of the ovule is called pedicle.  
b) LH is secreted by the posterior pituitary.  
ii) Why are family planning methods not adopted by all the people of our country?
30. a) Why is Archaeopteryx considered to be a connecting link?  
b) Define Ethno botany.
31. a) How does Insulin deficiency occur?  
b) Mention the diseases caused by tobacco smoke.
32. The molecular formula of an alcohol is  $\text{C}_4\text{H}_{10}\text{O}$ . The locant number of its OH group is 2.  
i) Draw its structural formula  
ii) Give its IUPAC name  
iii) It is saturated or unsaturated?

**PART-IV**

Answer all the questions in detail.

3x7=21

33. a) i) List any two properties of light.  
ii) Explain the rules for obtaining images formed by a convex lens with the help of ray diagram.  
(OR)
- b) i) Compare the properties of alpha, beta and gamma radiations.  
ii) In Japan, some of the new born children are having congenital diseases. why?
34. a) Explain smelting process.  
(OR)
- b) i) Calculate the  $\text{pH}$  of  $1.0 \times 10^{-4}$  molar solution of  $\text{HNO}_3$ .  
ii) How does  $\text{pH}$  play an important role in everyday life.
35. a) i) What is bolting?  
ii) Where are estrogens produced? What is the role of estrogens in the human body.  
(OR)
- b) i) What is the importance of rainwater harvesting?  
ii) What are the environmental effects caused by sewage?

CH / 10 / Sci / 2