First Terminal Examination – 2080
Model Question

Class : 10   F.M.: 50

Subject : Science and Technology   Time : 2 Hours

Group A (Multiple Choice Questions)   7×1=7

Tick the best answer from given alternatives.

1. **Identify the unit analysis for v = u + at.**

    i. $ms^{-2} = ms^{-2} + ms^{-2}$ ii. $ms^{-1} = ms^{-1} + ms^{-1}$

    iii. $ms^{-2} = m^2s^{-2}$ iv. $ms^{-1} = ms^{-1} + ms^{-2}$

2. **Why does pine belong to the gymnosperm?**

    i.   needle like leaf, naked seed, rough bark

    ii.   needle like leaf, enclosed seed, rough bark

    iii.   flat and broad leaf, enclosed seed

    iv.   narrow leaf, parallel venation, spongy stem

3. **How many chromosomes are present in a drone bee?**

    i. 32 chromosomes ii. 16 pairs chromosomes ii. 16 chromosomes iv.
    32 pairs chromosomes

4. **The value of acceleration due to gravity on the surface of moon:**

    i.   is the same as on the earth   ii. is less than that of the earth

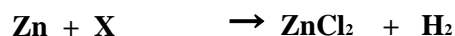   ii.is more than that of the earth iv. keeps changing day by day

5. **The phenomenon due to which a body when partially or wholly immersed in a liquid experiences an upward thrust is called:**

    i.   Archimedes' Principle   ii. buoyancy

    ii.   flotation   iv. anti-gravity

6. **According to the Modern periodic law, the elements were arranged in the periodic table in the order of:**

    i.   increasing atomic number   ii. decreasing atomic number

    ii.   increasing atomic mass   iv. decreasing atomic number

7. **What is X in the given chemical reaction?** $Zn + X \longrightarrow ZnCl_2 + H_2$

    i. H_2SO_4 ii. HCl

    ii. H_2O iv. HNO_3

Group B (Very Short Questions)   5×1=5

Answer the questions in very short.

8. Give the name and Phylum of the animal having flattened body, sucker but segmented body and hermaphrodites.

9. What is nuptial flight?

10. Write the value and unit of Gravitational Constant (G).

11. State Archimedes' principle.

12. Molecular formula of certain ionic compound is XY_2 and X is a metal. State group to which elements X and Y belong to in the periodic table.

Answer the questions in short.

13. Mohan has a cow farm. He increased the food to one group of cow and kept constant for others. The group that ate more food gave more milk than the others. Enlist dependent and independent variables in this experiment along with their reason.

14. Write any two differences between class crustacea and class insecta.

15. Why is spirogyra kept in the division algae? Give any two suitable reasons.

16. Honey bee plays a vital role in pollination, how?

17. The probability of getting hurt is more when jumped from a significant height, why?

18. The mass of the moon is 7.2×10^{22} kg and its radius is 1.7×10^3 km. Calculate the value of acceleration due to gravity on the surface of the moon.

19. Why does the reactivity of elements increase on moving from top to bottom in group IA of modern periodic table?

20. A reaction between sodium hydroxide and hydrochloric acid is called a neutralization reaction. Show chemical equations along with the reasons.

21. Write any two limitations of the balanced chemical equations.

Group D (Long Questions)   **5×4=20**
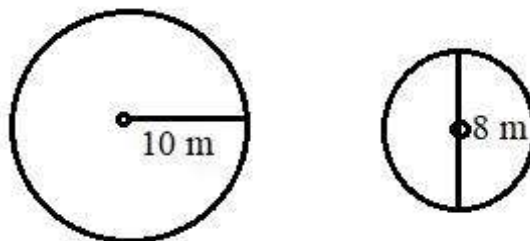
Answer the questions in detail.

22. Based on units, check whether the following equations are correct or not?
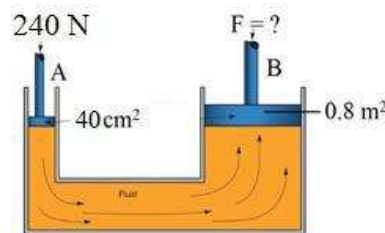   i. $V^2 = \underline{u}^2 + 2as$ ii. $S^2 = ut + at^2$

23. Make a table and compare gymnosperm and angiosperm based on their habitat, structure, leaf, flower, fruits and seeds.

24. Mass of large object is 50 kg and that of small object is 20 kg are shown in the diagram. The gravitational force between them is 5×10^{-5} N. If they are separated by 14 m between their surface, what force will be exerted between them?

25. Study the given diagram and answer the following questions.
    i.   What is the name of this instrument?
    ii. The cross sectional area of piston A and B is $40cm^2$ and $0.8cm^2$ respectively. Then how much load can be balanced on piston B if 240 N force is applied on Piston A?

26. Study the given tables and answer the following questions.

Li	Be	B	C	N	O	F	Ne
Na	Mg	Al	Si	P	S	Cl	Ar

i.   On what basis, elements are arranged from left to right?
ii.   Which one is more active in between Li and Na and why?
iii.   Write a formula of a compound made from Mg and Cl.

The End