

## Class 9 science sample paper term 2

**Section A**

**Question 1** A horse of mass 210 Kg and a dog of mass 25 Kg are running at the same speed. Which of the two possess more Kinetic energy? How? (2)

**Question 2** Define ozone hole ? (2)

**Question 3** Seema tried to push a heavy rock of 100 Kg for 200 s but could not move it. Find the work done by Seema at the end of 200 s. (2)

**Question 4** Which group of plants has nitrogen fixing bacteria in the root nodules? (2)

**Question 5** (3)

- Name the fundamental particle not present in the nucleus of hydrogen atom.
- Give one important application of isotopes of cobalt and uranium.

**Question 6** What is notochord? Mention its functions. (3)

**Question 7** (3)

- Why does a block of wood held under water rise to the surface when released?
- An object of weight 200 N is floating in the liquid. What is the magnitude of buoyant force acting on it?

**Question 8** (3)

- Three persons A, B and C are made to hear a sound travelling through different media as given below. Who will hear the sound first and why?

Person	Medium
A	Iron rod
B	Air
C	water

- Sound of explosion taking place on other planets is not heard by a person on earth. Give reason.

**Question 9** What is soil erosion? List two activities which cause soil erosion. (3)

**Question 10** (4)

- Write chemical formulae of the following compound
  - Aluminium nitride
  - Ammonium phosphate
- Name the metal which shows variable Valency. Write the formulae of two of its chlorides.

**Question 11** Thallophyta, bryophyte and pteridophyte are classified as cryptogamiae whereas gymnosperms are classified a phanerogamiae, why? (3)

**Question 12** Define relative density of a substance. Relative density of silver is 10.8. The density of water is  $1000 \text{ kg/m}^3$ . What is the density of silver in SI units. (3)

**Question 13** Define air pollution. Write two methods to prevent it. (3)

**Question 14** Write the most striking features of the following phya/class? (6)

- Arthropoda
- Amphibia
- Porifera

**Question 15** (3)

- Calculate the number of moles in 5.75 gm of sodium. (Na=23u)
- Define law of constant composition.
- What is atomicity of chloroform and methane.

**Question 16** (3)

- What are infectious diseases? Give two examples.
- Name two infectious agents.

**Question 17** (5)

- A gold sample contains 90% of gold and rest copper. How many atoms of gold are present in one gram of this sample of gold. (Au=197u)
- Which has more number of atoms, 100 g of calcium or 100 g of oxygen gas. (Ca=40 u, O=16u)

**Question 18** A mass of 100 Kg is dropped from a height of 50 cm. Find its (5)

- Potential energy just before dropping
- Kinetic energy on touching the ground.

**Question 19** (5)

- State a condition for an echo to be heard.
- Bats cannot see, then how do they catch their pray?

**Question 20** (5)

- Name two diseases against which infants below one year are vaccinated.
- Why are antibiotics effective against bacteria but not against viruses.

**Question 21 (5)**

- A sound wave travels at a speed of 339 m/s. If the wavelength is 1.2 cm, what is the frequency of the wave?
- If 20 waves are produced per second, what is the frequency in hertz?

**Question 22 (5)**

- Distinguish between acute and chronic diseases.
- What will be the symptom of a disease if the target organs are
  - Lungs
  - liver

**Question 23** Drive an expression to calculate energy for an object in motion and calculate the work required to stop a car of mass 1500 Kg moving at a velocity of 60 KM/hr

**OR**

Name and define the physical quantity whose SI unit is watt. Write the relation between kWh and joule.

A pump delivers 1000 L of water in a tank at a height of 15 m in 120 sec. Calculate work done by the pump and its power. (Take  $g=9.8 \text{ m/s}^2$ ) (5)

**Question 24 (5)**

- Describe briefly the Rutherford's alpha particle scattering experiment. Write the important observations and conclusions drawn from the experiment.
- If the bromine atom is available in the form of two isotopes  ${}^{79}_{35}\text{Br}$  and  ${}^{81}_{35}\text{Br}$  in 49.7% and 50.3% abundance respectively. Calculate the average atomic mass of bromine.

**OR**

- Define the atomic number and atomic mass number of element.
- One atom of an element contains 8 protons and 9 neutrons. Predict
  - Number of electrons
  - Atomic number
  - Atomic mass
  - An isotope for this element
- Write the main postulates of Bohr's atomic model.

**Question 25 (5)**

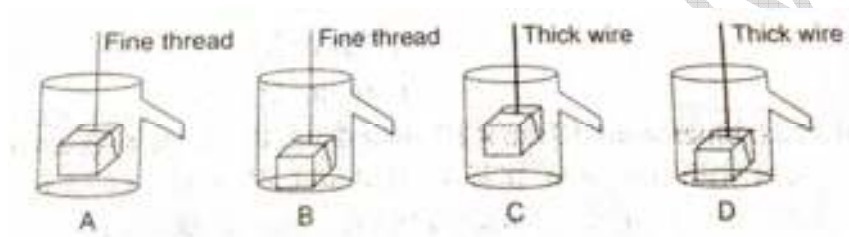
Describe the steps and process involved in the nitrogen cycle. Also show cycling of various nutrients in this cycle diagrammatically.

OR

- a. How do forests influence the following
  - i. Air
  - ii. Soil
  - iii. Water
- b. How are CFC's harmful for the environment and living beings?

**Section B**

**Question 26** The correct step shown for an experiment to establish relationship between loss in weight of an immersed solid with the weight of water displaced by it is:

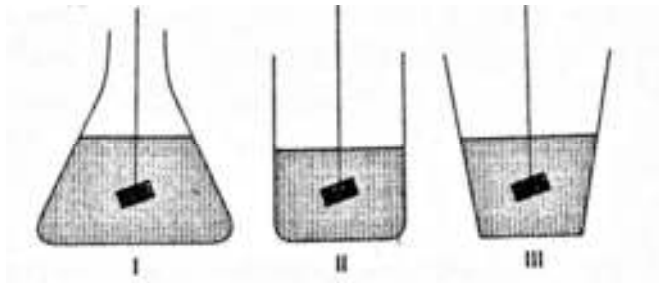


- a. A
- b. B
- c. C
- d. D

**Question 27** The mass of a solid iron cube of side 4 cm is to be determined using a spring balance. If the density of iron is approximately  $8.5 \text{ gcm}^{-3}$ , the best suited spring balance for determining weight of the solid would be of:

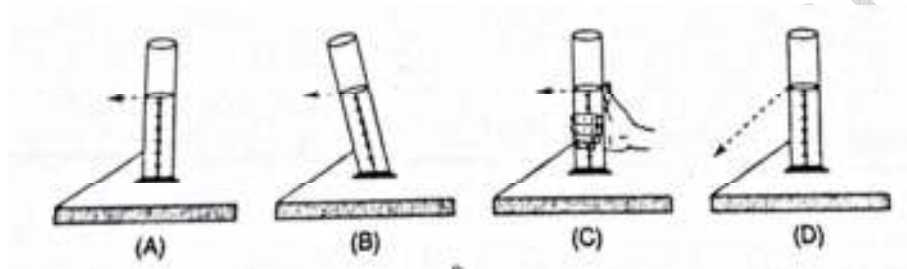
- a. Range 0-250 gwt ; least count 1 gwt
- b. Range 0-250 gwt ; least count 5 gwt
- c. Range 0-1000 gwt ; least count 5 gwt
- d. Range 0-1000 gwt ; least count 10 gwt

**Question 28** A body is weighted in liquid by immersing it fully in each of the three containers shown below. The apparent weight of the solid will be



- Least in I
- Least in II
- Least in III
- Equal in all

**Question 29** The correct way of reading a liquid level is shown in:



- Figure A
- Figure B
- Figure C
- Figure D

**Question 30** A glass cuboid has dimensions  $10\text{cm} \times 10\text{cm} \times 4\text{cm}$ . It is kept with its face  $10\text{cm} \times 10\text{cm}$ . If it is lifted and allowed to rest on the table with its smaller surface  $10\text{cm} \times 4\text{cm}$  in contact with the table the pressure exerted will

- Increase
- Decrease
- Remain unchanged
- May increase or decrease depending on the shape of the table

**Question 31** An iron cuboid and a wooden cuboid of the same dimensions are placed on sand on the face having the same area, then

- Iron cuboid applies greater pressure
- Both cuboid applies same pressure
- Wooden cuboid applies greater pressure
- They exert no pressure