

# Model Question Paper -01

**CLASS—IX****SUBJECT—SCIENCE****TERM—II****Time Allowed : 3 Hours****Max. Marks : 90****General Instructions : Same as in Model Question Paper—1.**

## SECTION—A

1. State law of conservation of mass.
2. What are oviparous animals ?
3. Ovary ripens into which structure.
4. Give two conditions under which cathode rays are produced. Also give their two properties.
5. The mass of one steel screw is 4.11 g. Find the mass of one mole of these steel screws. Compare this value with the mass of earth ( $5.98 \times 10^{24}$  kg). Which one of the two is heavier and by how many times ?
6. What are greenhouse gases ? Name the man-made component responsible for depletion of ozone layer.
7. What are two forms of oxygen found in atmosphere ? Discuss their role.
8. Differentiate gymnosperms and angiosperms.
9. Write a note on how forest influence the quality of our air, soil and water resources.
10. Name two diseases caused by protozoans. What are their causal organisms ?
11. Why are antibiotic not effective against viral diseases ?
12. List any three conditions a baby is likely to fall sick.
13. (i) Analyse the data and write which district of Uttarakhand had maximum damage in case of infrastructure. (ii) What is the official number of casualties during devastation caused by heavy rains and cloud burst?
14. What is relation between K.E. and momentum ?
15. Mass of Mohan is 30 kg and that of Sohan is 25 kg. Both are moving in the same train with a velocity of  $72 \text{ km h}^{-1}$  towards east. What is the ratio of kinetic energies and momenta ?
16. How does the sound produced by a vibrating object in a medium reach your ear ?
17. Define wavelength and frequency. How are they related to each other ?
18. How is echo produced? What are its conditions?
19. (a) Define isotopes and isobars.  
(b) Give the main points of Bohr's model of the atom.
20. Give the main points of Dalton's atomic theory and give its drawbacks.
21. (a) Write five distinct characters of phylum Arthropoda.  
(b) Give three examples.
22. Why is AIDS considered to be a syndrome and not a disease?
23. What are characteristics of musical sound ? Explain each briefly.
24. You have seen weather reports on television and in newspapers. How do you think that we are able to predict the weather ? Discuss.

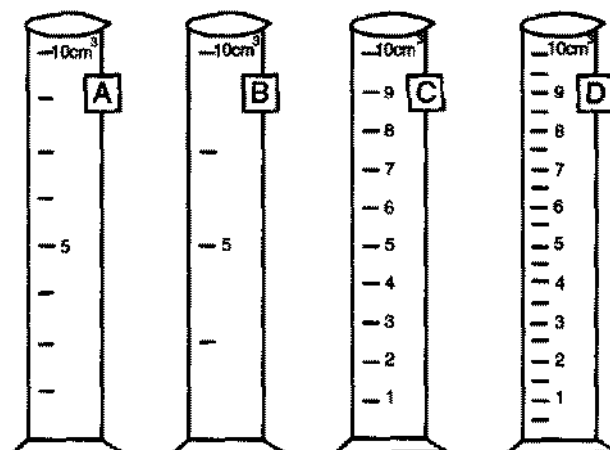
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**SECTION—B**

**1 Mark Questions**

25. In nuclear reactions some mass disappears, why ?
26. When ice is heated it melts to give liquid water, the mass of water produced will be ?
27. Write two distinct features of class amphibia.
28. Name the locomotory organs of Echinodermata. Give one example.
29. Number of eggs a female mosquito lays is :  
(A) 8—16 (B) 25—50  
(C) 51—100 (D) 200—300
30. Velocity of sound on the moon is:  
(A)  $350 \text{ ms}^{-1}$  (B)  $1500 \text{ ms}^{-1}$   
(C)  $5000 \text{ ms}^{-1}$  (D) Zero
31. A piece of gold falls in a cup of mercury; it will :  
(A) float at top of mercury (B) sink in mercury  
(C) partly float in mercury (D) None of these.
32. Another way of writing a litre is :  
(A)  $\text{m}^3$  (B)  $\text{dm}^3$   
(C)  $\text{cm}^3$  (D)  $\text{mm}^3$ .
33. Pressure of brick is maximum on sand when :  
(A) face of brick with maximum area is downward  
(B) face of the brick with maximum area is upwards  
(C) face with least area touches sand  
(D) None of three is correct.

**2 Marks Questions**

34. Organisms without nucleus and cell organelles belong to which kingdom. Write two example.
35. Four measuring cylinders with different least counts are shown in figs. A, B, C and D. The most suitable cylinder for determining the volume of a cube of side nearly 1 cm side is :



- (A) A (B) B  
(C) C (D) D

36. Which one is not true of the following ?

- (A) Pressure exerted depends upon area of contact  
(B) Pressure exerted depends upon the weight  
(C) For the same area and weight of the body, the pressure exerted depends upon nature of the material of the body  
(D) None of three.
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# Model Question paper - 02

**CLASS—IX**  
**SUBJECT—SCIENCE**  
**TERM—II**

**Time Allowed : 3 Hours**

**Max. Marks : 90**

**General Instructions : Same as in Model Question Paper—1.**

## SECTION—A

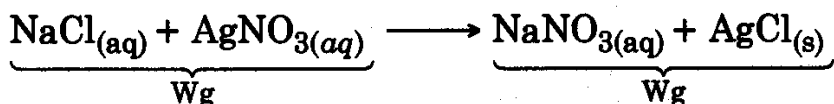
1. Write down the formulae of sodium oxide and aluminium chloride.
2. Give two examples of class amphibia.
3. What are coelenterate animals?
4. Define atom, electron, proton, neutron, isobars and isotopes.
5. He and Mg have two electrons in their valence shells, why is He an inert gas element while Mg is not ?
6. What are lichens ? What do they indicate?
7. Name two biologically important compounds that contain both nitrogen and oxygen. Write their importance.
8. Differentiate acute diseases and chronic diseases.
9. What are two types of diseases on the basis of duration ?
10. What are the differences between animals belonging to aves group and those in the mammalia group ?
11. Why is AIDS considered a syndrome and not a disease ?
12. Explain a few disorders arising from improper functioning of immune system.
13. Define energy and power. Give their SI units.
14. What is potential energy ? How many types energy is there ?
15. A man drops 10 kg rock from the top of a 5 m vertical ladder. What is the kinetic energy when it reaches the ground ? What is its speed when it just hits the ground ? Where does this energy go when the rock is stopped ?
16. How are we able to hear the sound with the help of ear ? Describe briefly action of different parts.
17. Sound produced by a thunderstorm is heard 10 s after the lightning is seen. Calculate approximately the distance of thunder cloud. Given speed of sound in air is =  $340 \text{ m s}^{-1}$ .
18. What are the different forms of mechanical energies ? Explain them.
19. (a) Calculate number of molecules in 1.8 g of  $\text{H}_2\text{O}$ .  
(b) Calculate weight of 0.5 mole of  $\text{CO}_2$ .
20. (a) Give the main points of Dalton's atomic theory.  
(b) What are its drawbacks ?
21. List six general characters of gymnosperms.
22. Irrational human actions and unscientific approach in the name of so called development result in great tragedy in Uttarakhand. List the basic natural causes and human actions which caused large scale devastation.

23. What is the law of conservation of energy ? Show that the sum of K.E. and P.E. of a freely falling body is conserved.
24. What are causes of ozone depletion ? What are effect, of ozone depletion? List measures for depletion of ozone.

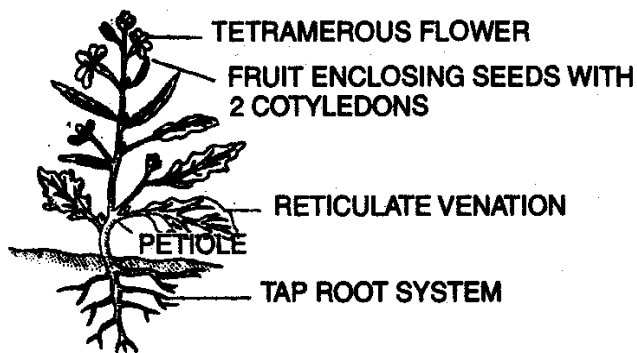
## SECTION—B

### 1 Mark Questions

25. Which law of chemical combination is shown by the following equation?



26. In the reaction  $\text{CaCO}_3 + 2\text{HCl} \longrightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$ , find the mass of products.
27. What is the number of teeth in the beaks of birds ? Write one other distinct feature of birds.
28. An angiospermic plant is shown below. Observe the features and state the kind of plant it is :

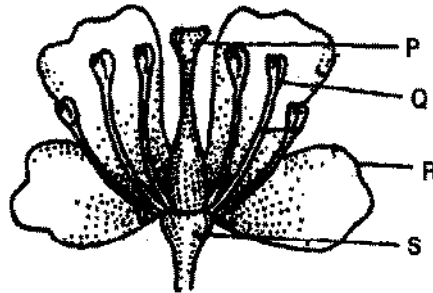


- (A) Dicot    (B) Monocot  
 (C) Cycas    (D) Pinus.
29. How are eggs of mosquitoes glued together ?  
 (A) image    (B) egg raft  
 (C) wriggler    (D) None of above.
30. Mass of unit volume of a substance is called:  
 (A) mass    (B) specific gravity  
 (C) density    (D) relative density.
31. Mass of solid iron cube of side 4 cm is to be determined. Of four spring balances available, the one best suited for the purpose would have :  
 (A) Range 0 to 1,000 kg and least count 10 g  
 (B) Range 0 to 100 g, least count 5 g  
 (C) Range 0 to 1,000 g and least count 25 g  
 (D) Range 0 to 100 g and least count 1 g.

32. SI unit of action and reaction is :  
 (A)  $\text{kg m s}^{-2}$  (B)  $\text{Nm}^{-1}$   
 (C)  $\text{N s}^{-1}$  (D) None of these.
33. Two boys of equal weight walk on snow. First boy is wearing wide base shoes and second boy wears narrow base shoes. Who will walk more comfortably ?  
 (A) Only first boy (B) Only second boy  
 (C) Both (D) None of three.

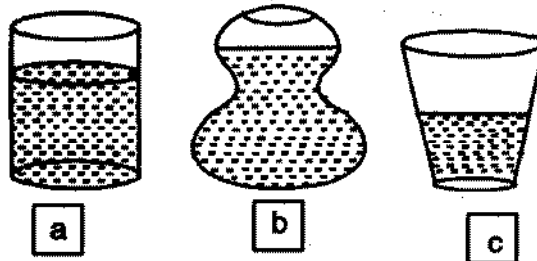
**2 Marks Questions**

34. The following figure shows the yellow coloured flower of mustard. The parts have been labelled as P, Q, R, S :  
 Which is the correct labelling of parts ?



Also name the group to which mustard plant belong.

35. A given solid is weighed in air using a spring balance. It is then weighed by immersing it fully, in each of the three vessels containing kerosene. Its weight when immersed will be :



- (A) equal in all three vessels  
 (B) least in (a)  
 (C) least in (b)  
 (D) least in (c).
36. You are given solid cubes of aluminium and iron each of side 4 cm and 2 spring balances. Balance A has a range of 0 to 250 g f and least count of 2.5 g f while balance B has a range of 0 to 1,000 g f and least count of 10 g f. The preferred option for weight measurement would be to use balance :  
 (A) A for iron and B for aluminium cube  
 (B) A for both cubes  
 (C) A for aluminium cube and B for iron cube  
 (D) B for both cubes.

# Model Question paper - 03

**CLASS—IX**  
**SUBJECT—SCIENCE**  
**TERM—II**

**Time Allowed : 3 Hours**

**Max. Marks : 90**

**General Instructions : Same as in Model Question Paper—1.**

## SECTION—A

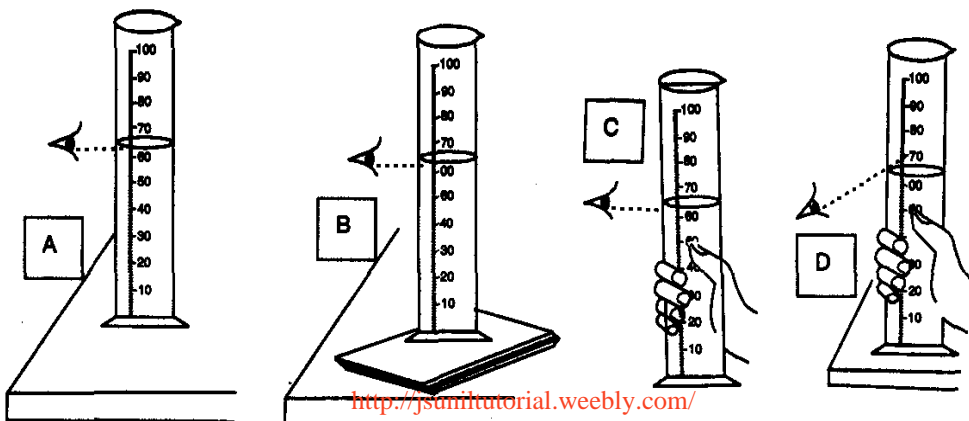
1. Define atomic mass unit.
2. What are bryophytes ?
3. Name the causative agent of malaria and typhoid.
4. Distinguish between isotopes and isobars with suitable examples.
5. Define law of conservation of mass and law of definite proportions with suitable examples.
6. What is greenhouse effect ? List its effect on environment.
7. How can we prevent the loss of top soil ?
8. Which bacterium causes peptic ulcers ? Who discovered above pathogen for the first time ? How is it prevented?
9. Why is water essential for life ?
10. Differentiate poriferan animals and coelenterate animals. Give examples.
11. We know that many human activities lead to increasing levels of pollution of air, water-bodies and soil.
  - (i) Do you think that isolating these activities to specific and limited areas would help in reducing pollution.
  - (ii) Name any two air pollutants.
- NBQ** 12. What precautions can you take in your school to reduce the incidence of infectious diseases ?
13. What is an echo ? What is the basic condition for echo to be heard ?
14. Which characteristic of sound helps you to identify your friend by voice who is sitting in a dark room ?
15. What is the work done by the force of gravity on a satellite moving around the earth ? Justify the answer.
16. Define watt. Express kilowatt in terms of joule per second.  
A 150 kg engine develops 500 W for each kg. What force does it exert in moving the car at a speed of  $20 \text{ m s}^{-1}$  ?
17. What are different types of wave motion ? Define them. Give one example of each.
18. Show by experiment that material medium is necessary for production of sound.
19. (a) Distinguish between mole and molecule.  
(b) Calculate number of molecules in 0.1 mole of  $\text{H}_2\text{O}$ . Also calculate number of H- atoms in it.

20. (a) Give Rutherford's model of atom.  
 (b) What are its drawbacks?
21. How will you determine composition of soil ?
22. How are criteria for deciding division in plants different from the criteria for deciding the subgroups among animals ?
23. Give five applications of ultrasounds.
24. Define K.E. and P.E. Show that sum of K.E. and P.E of a freely falling body also remain conserved.

## SECTION—B

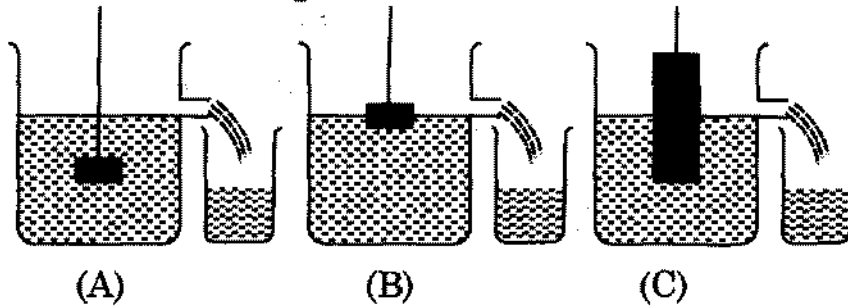
### 1 Mark Questions

25. Law of conservation of mass was given by :  
 (A) Antoine Lavoisier (B) Proust  
 (C) Einstein (D) None.
26. Can we apply law of conservation of mass chemical or nuclear reaction?
27. A student found the posterior part of a male cockroach in the laboratory. The following sketch was made. The missing part in the sketch is :  
 (A) Anal cerci  
 (B) Anal style  
 (C) Brood pouch  
 (D) Antennae.
- 
28. Spirogyra belongs to which class ? How does it differ from dicot plant.
29. Mosquito lays eggs during which period of the day.
30. Pressure exerted is given by the ratio of :  
 (A) Force and volume (B) Force and area  
 (C) Area and force (D) None of these
31. Density  $d$ , mass  $m$  and volume  $v$  are related as :  
 (A)  $d = mv$  (B)  $m = \frac{v}{d}$   
 (C)  $m = vd$  (D) None of three.
32. Correct way of reading the liquid level is shown in :





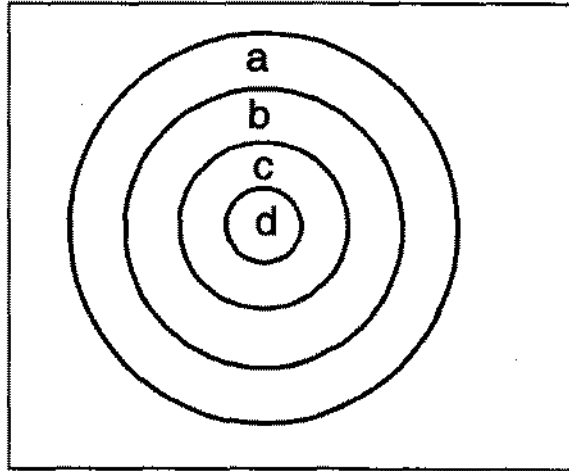
33. Which represents correct arrangement ?



**2 Marks Questions**

34. In the Venn-diagram shown below :

- represents kingdom
- represents sub-kingdom
- represents division
- represents class.



The correct matching of these classifying categories with spirogyra is :

- (A) (a) plantae (b) Thallophyta, (c) Phanerogamae, (d) Fungi
  - (B) (a) plantae ; (b) Phanerogamae, (c) Bryophyta, (d) Algae
  - (C) (a) plantae ; (b) Phanerogamae, (c) Thallophyta, (d) Fungi
  - (D) (a) plantae ; (b) Cryptogamae, (c) Thallophyta, (d) Algae.
35. Which one is not true of the following ?
- (A) Pressure exerted depends upon area of contact
  - (B) Pressure exerted depends upon the weight of the body
  - (C) For the same area and weight of the body, the pressure exerted depends upon nature of the material of the body
  - (D) None of three.
36. While determining the density of a copper piece using a spring balance and a measuring cylinder, Seema carried out the following procedure.
- (i) noted the water level in the measuring cylinder without copper piece.
  - (ii) immersed the copper piece in water.
  - (iii) noted the water level in the measuring cylinder with copper piece inside it
  - (iv) removed the copper piece from water and immediately weighed it using a spring balance.
- The wrong step in the procedure is :
- (A) step (i)
  - (B) step (ii)
  - (C) step (iii)
  - (D) step (iv).

# Model Question paper - 04

**CLASS—IX**  
**SUBJECT—SCIENCE**  
**TERM—II**

**Time Allowed : 3 Hours**

**Max. Marks : 90**

**General Instructions : Same as in Model Question Paper—1.**

## SECTION—A

1. Define one mole.
2. 'Dust is a pollutant'. Comment.
3. Name any two edible fishes.
4. What are cathode rays ? How are they produced ?
5. Which has more number of atoms and why, out of 100 g of sodium and 100 g of iron ? (Atomic masses are : Na = 23 u, Fe = 56 u)
6. What is 'Ozone hole' ? Name two chemicals which destroy ozone layer.
7. Name two factors which lead to soil formation.
8. Will advanced organisms be the same as complex organisms ?
9. What is an antibiotic ? Give two examples.
10. How is life of an organism living in water gets affected by polluted water ?
11. Conduct a survey in your neighbourhood to find out what the three most common diseases are. Suggest three steps that could be taken by your local authorities to bring down the incidence of these diseases.
- OR** 12. A baby is not able to tell her/his caretaker that she/he is sick. What would help us to find out :
  - (a) that the baby is sick ?
  - (b) what is the sickness ?
13. What is potential energy ? What is it equal to ?
14. Can work done be negative ? Give an example.
15. Derive a relation between frequency, wavelength and velocity of wave.
16. What are whispering galleries ? What are good reflectors and good absorber of sound?
17. If momentum of two bodies is equal, will their K.E.'s will be equal ? Justify.
18. What is an echo ? When is it heard ?
19. Describe Bohr's model of an atom and give its two limitations.
20. (a) Define law of conservation of mass.  
(b) Give the names of elements present in potassium sulphate.
21. How will you control water pollution ?
22. Classify Rohu, Scoliodon, Frog, Salamander, Ostrich, Pigeon, Bat and Crocodile into cold blooded and warm blooded animals.

23. What SONAR stands for? Explain the working of SONAR and give its use.  
 24. Describe briefly the construction and working of human ear.

## SECTION—B

### 1 Mark Questions

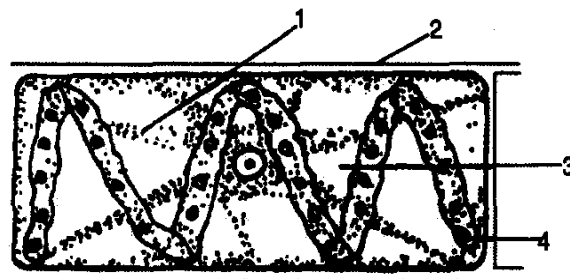
25. Law of conservation of mass holds good for :  
 Physical changes or Chemical changes or both, give your choice.
26. Which law of chemical combination is shown by following equation?
- $$\underbrace{\text{NaCl}_{(aq)} + \text{AgNO}_{3(aq)}}_{W_g} \longrightarrow \underbrace{\text{NaNO}_{3(aq)} + \text{AgCl}_{(s)}}_{W_g}$$
27. Spirogyra belongs to kingdom Plantae. What are the three cellular features that confirm this fact ?
28. Observe the pictures of a fish and a bird. What is the feature that places them in the same phylum ? Give any two examples of each group.



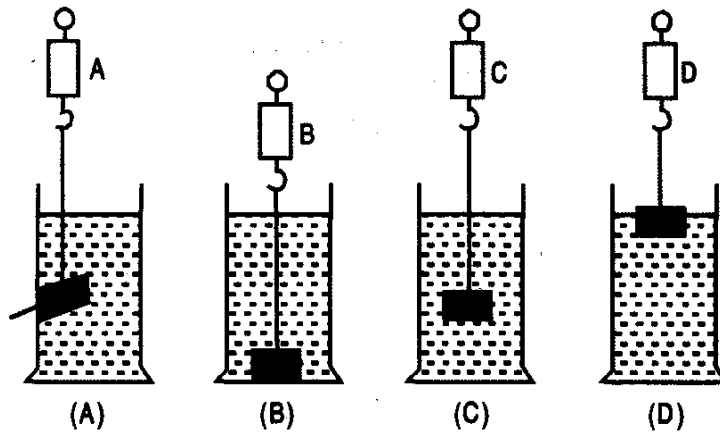
29. Name the mosquito which spread malaria.
30. A person is able to swim in sea water because density of sea water is :  
 (A) equal to ordinary water  
 (B) greater than ordinary water  
 (C) less than ordinary water.
31. Mass of a unit volume of a substance is called :  
 (A) mass (B) specific gravity  
 (C) density (D) relative density.
32. SI unit of pressure is:  
 (A) pascal (B) Nm<sup>2</sup>  
 (C) Nm<sup>-1</sup> (D) Dyne
33. Velocity of sound on moon is nearly ..... ms<sup>-1</sup>.  
 (A) 350 (B) 1,500  
 (C) 5000 (D) zero.

### 2 Marks Questions

34. The following figure shows slide of spirogyra. Write the correct labelling of the parts 1, 2, 3, 4.



35. Correct way of finding weight of a sinker in water is :



36. A student places a cuboid first on loose sand and then on hard board of table. In which case pressure exerted by cuboid will be clearly observable :

- (A) In first case i.e., on loose sand
- (B) In second case i.e. on table
- (C) In both cases since pressure in the same
- (D) Nothing can be said with surety.

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# Model Question paper - 05

**CLASS—IX**  
**SUBJECT—SCIENCE**  
**TERM—II**

**Time Allowed : 3 Hours**

**Max. Marks : 90**

**General Instructions : Same as in Model Question Paper—1.**

## SECTION—A

1. Define molecule.
2. Who is regarded as father of taxonomy ?
3. BCG vaccine is effective against which disease ?
4. How do electrons and protons differ ?
5. An element has atomic number 17. What is its valency ?
6. What are two effects of global warming ?
7. List the green house gases.
8. Expand HIV and AIDS. Write two symptoms of AIDS.
9. Why is step farming common in hills? Explain.
10. What is atmosphere? Name different layers.
11. List any six common features of cat, rat and bat.
12. What characters of seed plants make them special adapted to life on land.
13. An object thrown at a certain angle to the ground moves in a curved path and falls back to the ground. The initial and the final points of the path the object lie on the same horizontal line.
14. An object of mass 40 kg is raised to a height of 5 m above the ground. What is its potential energy? If the object is allowed to fall, find its kinetic energy when it is half-way down.
15. Discuss an experiment to show that sound needs a material medium for its propagation.
16. Ram places a piece of iron on the surface of water. What will happen? Give reason.
17. (a) Define relative density. Give its mathematical form.  
(b) The mass of an iron cube having an edge length 1.5 cm is 50 g. Find its density.  
(c) The volume of a 250 g sealed tin is 400 cubic cm. Find the density of the tin in  $\text{g cm}^{-3}$ . State if the object would sink or float in water.
18. Illustrate the law of conservation of energy by discussing the energy changes which occur when we draw a pendulum bob to one side and allow it to oscillate. Why does the bob eventually come to rest? What happens to its energy eventually? Is it a violation of the law of conservation of energy ?

19. (a) Calculate the mass of 0.1 mole of water.  
 (b) What are isotopes and isobars ? Give two examples of each.
20. (a) Give the main points of Rutherford's model of atom.  
 (b) Give two drawbacks of Rutherford's model of atom.
21. (i) Discuss advantages of classification.
22. (i) Give any four factors necessary for healthy person.  
 (ii) Why are antibiotics not effective against virus ?
23. (a) State law of conservation energy. Explain it with one example.  
 (b) Two girls each of weight 400 N climb up a rope through a height of 8 metres. Girl A takes 20 seconds while girl B takes 50 seconds to accomplish the task. What is the power expended by each girl?  
 (c) An electric heater is rated 1500 watt. How much energy does it use in 10 hours ?
24. (a) Define the following characteristics of sound:  
 (i) Pitch (ii) Loudness (iii) Quality or Timbre  
 (b) A boy receives his echo 3 s later. Find the distance of the reflecting surface from the boy. Speed of sound in air is  $342 \text{ m s}^{-1}$ .

## SECTION—B

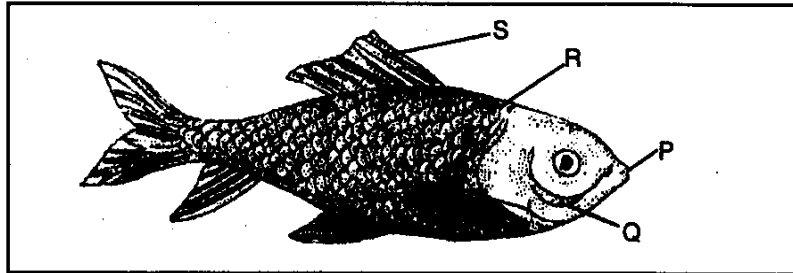
### 1 Mark Questions

25. Define law of conservation of mass.
26. Can we apply law of conservation of mass to nuclear reactions?
27. Write classification of *Spirogyra* and a fern plant.
28. What is common between silver fish, scorpion, crab and honey bee?
29. How many eggs a female mosquito lays at a time ?
30. The work done by a force on a body will be positive if the:  
 (A) body does not move  
 (B) body moves perpendicular to the direction of motion  
 (C) body moves along the direction of the applied force  
 (D) body moves opposite to the direction of the applied force.
31. An object weighs 10 N in air. When immersed fully in water, it weighs only 8 N. The weight of the liquid displaced by the object will be  
 (A) 2 N            (B) 8 N            (C) 10 N            (D) 12 N
32. A girl stands on a box having 60 m length, 40 cm breadth and 20 cm width in three ways. In which of the following cases, pressure exerted by the brick will be  
 (A) maximum when length and breadth form the base  
 (B) maximum when breadth and width form the base  
 (C) maximum when width and length form the base  
 (D) the same in all the above three cases

- 33.** Two balls, one of iron and other of aluminium experience same upthrust when dipped in water.
- (A) both have equal volume                      (B) both have equal weight in air  
 (C) both have equal density                    (D) nothing definite can be said

**2 Marks Questions**

- 34.** In the diagram given below prominent and identifying features of bony fish are labelled as P, Q, R, S. Write the correct identification of P, Q, R, S.



- 35.** A key of a mechanical piano struck gently and then struck again but much harder this time. In the second case
- (A) sound will be louder but pitch will not be different  
 (B) sound will be louder and pitch will also be higher  
 (C) sound will be louder but pitch will be lower  
 (D) both loudness and pitch will remain unaffected
- 36.** Before playing the orchestra in a musical concert, a sitarist tries to adjust the tension and pluck the string suitably. By doing so, he is adjusting
- (A) intensity of sound only  
 (B) amplitude of sound only  
 (C) frequency of the sitar string with the frequency of other musical instruments  
 (D) loudness of sound