

# Model Paper -01

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

**Time Allowed : 3 Hours**

**Max. Marks : 90**

**General Instructions :**

- (i) The question paper comprises two sections, A and B. You are to attempt both sections.
- (ii) All questions are compulsory.
- (iii) There is no overall choice. However internal choice has been provided in all the three questions of five marks category. Only one option in each question is to be attempted.
- (iv) All questions of **Section A** and all questions of **Section B** are to be attempted separately.
- (v) Question numbers **1 to 3** A are **one mark** questions.
- (vi) Question numbers **4 to 6** are **two marks** questions, to be answered in about **30 words** each.
- (vii) Question numbers **7 to 18** are **three marks** questions, to be answered in about **50 words** each.
- (viii) Question numbers **19 to 24** are **five marks** questions, to be answered in about **70 words** each.
- (ix) Question numbers **25 to 36** in **Section B** are practical based questions.
- (x) Question numbers **25 to 33** are of **one mark** and **34 to 36** are of **two marks** each.

**SECTION—A**

1. Write the formula of Plaster of Paris and washing soda.
2. What is taxonomy ?
3. Expand HIV.
4. What do you mean by formula unit mass ? Calculate the formula unit mass of  $\text{Na}_2\text{S}_2\text{O}_3$  and  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ .
5. Write the main points of Rutherford's model of atom.
6. Expand AIDS. List three symptoms of AIDS.
7. Why does Matbura oil refinery pose problems to the Taj Mahal ?
8. How does atmosphere act as blanket ?
9. How is health at risk in a cyclone ?
10. What are specific ways of prevention of infectious diseases ?
11. Differentiate flying lizard and birds.
12. Enlist the peculiar features of arthropods.

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13. Power of a motor pump is 2 kW. How much water per minute the pump can raise to a height of 10 m ? Given  $g = 10 \text{ m s}^{-2}$ .
14. A girl having a mass of 35 kg sits on a trolley of mass 50 kg. The trolley is given an initial velocity of  $4 \text{ m s}^{-1}$  by applying a force.  
The trolley comes to rest after travelling a distance of 16 m. (a). How much work is done on trolley ? (b) How much work is done by girl ?
15. What is potential energy ? What are different types of potential energies ? Determine the potential energy due to position.
16. What are ultrasound and infrasound ? Give two uses of ultrasounds.
17. A submarine emits a sonar pulse, which returns from under water cliff in 1.02 s. If the speed of sound in salt water is  $1,531 \text{ m s}^{-1}$ , how far away is the cliff ?
18. How are power and work related ?
19. (a) Calculate number of atoms in 52 g of He and 52 moles of He.  
(b) Give the name of the elements present in
  - (a) Quick lime
  - (b) Hydrogen bromide
  - (c) Baking powder
  - (d) Potassium sulphate
20. (a) Give the main points of the Bohr model of atom.  
(b) What are its drawbacks ?
21. How microorganisms can enter our body and cause damage ?
22. What is global warming? What are green house gases? List a few effects of global warming.
23. A SONAR installed on a submarine sends out signal and receive an echo 5 s later. Calculate the speed of sound in water if the distance of object from submarine is 3,625 m.
24. What is normal range of hearing ? Give structure of ear to explain as to how sound is conveyed to brain ?

### SECTION—B

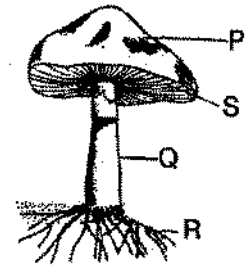
#### 1 Mark Questions

25. Does law of conservation of mass applicable to chemical or nuclear reactions? Give your choice.
26. Which law of chemical combination is shown by the data ?  
$$\underbrace{\text{NaCl}_{(aq)} + \text{AgNO}_{3(aq)}}_{\text{Wg}} \longrightarrow \underbrace{\text{NaNO}_{3(aq)} + \text{AgCl}_{(s)}}_{\text{Wg}}$$
27. List any two identifying features of class fungi.
28. Gizzard is a special organ in the digestive system of bird. What is its function ?
29. The egg stage of mosquito lasts for how many days ?
30. Relative density of a liquid is 0.8 its density in SI units is :
  - (A)  $0.8 \text{ kg m}^{-3}$
  - (B)  $800 \text{ kg m}^{-3}$
  - (C)  $0.8 \times 10^{-3} \text{ kg m}^{-3}$
  - (D) None of three.
31. Relative density is measured in :
  - (A)  $\text{Nm}^{-2}$
  - (B)  $\text{kg m}^{-3}$
  - (C)  $\text{g cm}^{-3}$
  - (D) None of these.

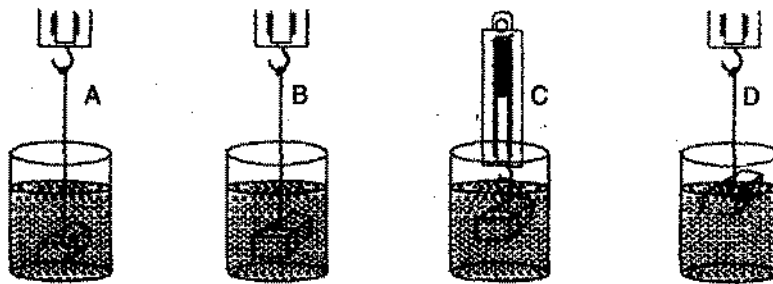
32. Sound can travel in :  
(A) solids only  
(B) liquids only  
(C) gases only  
(D) solids, liquids as well in gases.
33. For reflection of sound, we need .....  
(A) A highly polished mirror  
(B) A concave mirror painted blue  
(C) A large size opaque reflecting surface  
(D) A glass plate.

## 2 Marks Questions

34. The adjacent diagram illustrates a specimen of *Agaricus* :  
Its parts have been labelled as P, Q, R, S.  
Write the correct matching of the parts with their function.



35. The correct experimental set up for determining the weight of solid in water is shown in the figure :



36. Faces of cuboid are marked 1 to 6 and depression on sand caused by each face is recorded. Record showed that :  
(A) opposite parallel faces of cuboid caused the same depression in sand  
(B) adjacent faces caused equal depression in sand  
(C) all faces caused the same depression  
(D) opposite parallel faces caused unequal depressions.

# 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. Name the elements present in blue vitriol.
2. What is the smallest unit of classification ?
3. Name any two vector borne diseases.
4. Give an experiment to prove law of conservation of mass.
5. What are cathode rays ? How are they produced ?
6. How can soil fertility be increased?
7. (i) List two major sources of minerals in the soil.  
(ii) What do you mean by soil fertility ?
8. Why do not lichens occur in Delhi whereas they commonly grow in Manali and Darjeeling ? Explain.
9. Differentiate exoskeleton and endoskeleton.
10. Give three examples of range of variations that you see in the life forms around you.
11. Give reason : Balanced diet is necessary for maintaining healthy body.
- NBQ** 12. What is ultrasound? How is it used for medical investigation purposes ?
13. A rocket is moving up with a velocity  $v$ . If the velocity of this rocket is suddenly tripled, what will be the ratio of two kinetic energies ?
14. Velocity of a body moving in a straight line is increased by applying constant force  $F$  for some distance in the direction of motion. Prove that increase in kinetic energy of the body is equal to the work done by the force on the body.
15. A girl is sitting in the middle of a park of dimensions  $15\text{ m} \times 10\text{ m}$ . On the left side of park there is a building adjoining the park and on the right hand of the park there is a road adjoining the park. A sound is produced on the road by a cracker. Is it possible for girl to hear echo of this sound ? Explain.
16. Illustrate the laws 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 ? Is it violation of the law of conservation of energy ?
17. What is density and relative density of a substance?
18. Can any work be done without motion, ? Explain giving examples.
19. (a) Which out of 100 g of sodium and 100 g of iron has more number of atoms and why ? (Atomic masses are :  $\text{Na} = 23\text{ u}$ ,  $\text{Fe} = 56\text{ u}$ )  
(b) Give the main points of Dalton's atomic theory.

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20. (a) Compare the properties of electrons, protons and neutrons.  
(b) Write the electronic configurations of the elements (i)  ${}_{17}^{35}\text{Cl}$  and (ii)  ${}_{12}^{24}\text{Mg}$ .
21. The gaseous and particulate pollutants cause damage to life.  
(i) What is smog ? Where does this phenomenon occur ?  
(ii) What were the effects of smog ?
22. Differentiate monocot plants and dicot plants.
23. If momentum of two bodies are equal, will their K.E. be also equal ?
24. An object of mass  $m$  is moving with velocity  $v$ . How much work should be done on the object in order to bring it to rest ?

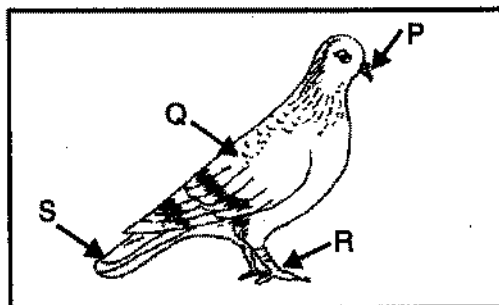
## SECTION—B

### 1 Mark Questions

25. Law of conservation of mass holds good for: physical changes or chemical changes or both. Give your choice.
26.  $\text{NaHCO}_3 + \text{CH}_3\text{COOH} \longrightarrow \text{CH}_3\text{COONa} + \text{H}_2\text{O} + \text{CO}_2$   
 $\begin{array}{ccccccc} 4.2\text{g} & 10.0\text{g} & & 12.0\text{g} & & 2.2\text{g} & \end{array}$   
which law is shown by above data ?

27. The diagram given below illustrates parts of pigeon's body labelled as P, Q, R, S :  
The correct identification of P, Q, R, S is :

- (A) Beak, hindlimb, forelimb, tail  
(B) Beak, forelimb, hindlimb, tail  
(C) Beak, forelimb, digits, tail  
(D) Beak, tail, forelimb, hindlimb.



28. Write two characteristics that can be used to distinguish gymnosperms from angiosperms ?
29. The entire life history of mosquito from egg to adult stage takes about how many days ?
30. Spring balance is based upon :  
(A) Pascal's law  
(B) Hooke's law  
(C) Newton's law  
(D) Archimedes' principle.
31. Relative density of a substance is 2, its density in SI is :  
(A)  $2\text{ kg m}^{-3}$   
(B)  $200\text{ kg m}^{-3}$   
(C)  $2,000\text{ kg m}^{-3}$   
(D)  $20\text{ ton m}^{-3}$ .
32. A body loses its weight equal to weight of fluid displaced by it when immersed wholly or partially in fluid is stated by :  
(A) Pascal's law  
(B) Archimedes' principle  
(C) Boyle's law  
(D) Brahma's law.

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33. Depression in sand is directly proportional to :
- (A) area (B) 1/area  
(C) 1/weight (D) None of these.

## 2 Marks Questions

34. Which one of the following represents correct classification of *Brassica campestris* ?
- |                           |                           |
|---------------------------|---------------------------|
| (A) Kingdom : Plantae     | (B) Kingdom : Plantae     |
| Subkingdom : Phanerogamae | Subkingdom : Phanerogamae |
| Division : Gymnospermae   | Division : Gymnospermae   |
| Class : Coniferae         | Class : Cycadae           |
| (C) Kingdom : Plantae     | (D) Kingdom : Plantae     |
| Subkingdom : Phanerogamae | Subkingdom : Phanerogamae |
| Division : Angiospermae   | Division : Angiospermae   |
| Class : Monocotyledonae   | Class : Dicotyledonae.    |

Write its two identifying features.

35. 25 divisions on a measuring cylinder represent  $50 \text{ cm}^3$ , the least count of cylinder is :
- (A)  $2 \text{ cm}^3$  (B)  $0.5 \text{ cm}^3$   
(C)  $0.005 \text{ cm}^3$  (D)  $5 \text{ cm}^3$ .
36. A slinky is tied to a hook in a wall and other end is held tightly. It is then pulled and released suddenly :
- (A) Transverse waves (B) Longitudinal wave  
(C) Longitudinal pulse (D) Transverse pulse.

# 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. Which postulate of Dalton's atomic theory can explain law of conservation of mass ?
2. Write the distinct features of bony fish.
3. Name two diseases caused by virus.
4. (a) Distinguish between atom and molecule.  
(b) Define mole.
5. Give the main points of Rutherford's model of atom.
6. Name the factors on which pattern of rainfall depends.
7. There is a mass mortality of fishes in a pond. What may be the reason ?
8. Differentiate annelids and arthropods.
9. What is disease ? How many types of diseases have you studied ? Give examples.
10. List three factors which affect health.
11. Any condition which interferes with the normal functioning of the body is called disease. Many of these diseases are communicable.  
(i) You had fallen ill during last year. Think of one change you would wish for in your surrounding in order to avoid any of/most of the diseases.  
(ii) Name the common communicable diseases.
12. Write six characters of cephalochordates. Give examples.
13. What is an echo ? What is the basic condition for echo to be heard ?
14. What is the energy consumed in joule when 2 kW device is used for 2 hours?
15. Give three examples of zero work done even when an object moves by some distance.
16. 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, what is its kinetic and potential energy when it has fallen down by 1 m. Take  $g = 10 \text{ m s}^{-2}$ .
17. What are travelling waves? Can there be a contribution of longitudinal and transverse waves ?
18. How are we able to hear beats of the heart by stethoscope ?
19. (a) Calculate number of atoms in 52 g of helium and 52 moles of helium.  
(b) Explain the term 'mole concept'.

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20. (a) Compare the properties of electrons, protons and neutrons.  
(b) What are the electronic configurations of the elements (i)  ${}_{17}^{35}\text{Cl}$  and (ii)  ${}_{12}^{24}\text{Mg}$  ?
21. 'Human life-style in most developed countries is causing many serious environmental problems'. Name the sources and cause of problems. Write any two effects of on human body.
22. Draw an outline graphic representation of nitrogen cycle.
23. What is full form of SONAR ? What type of waves are used in it ? Describe it to know the depth of sea.
24. (a) Derive relation between velocity, wavelength and frequency.  
(b) Frequency of a radio station is 710 kHz. What is its wavelength if velocity of e.m. waves is  $3 \times 10^8 \text{ m s}^{-1}$  ?

## SECTION—B

### 1 Mark Questions

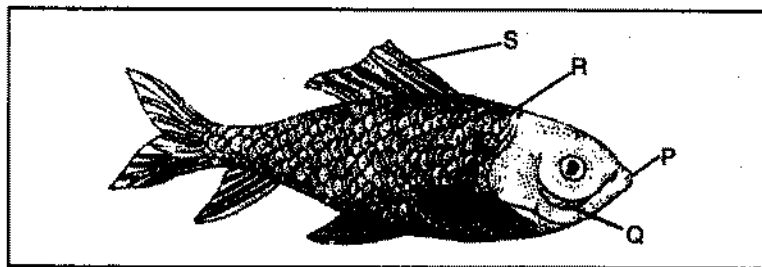
25. Law of conservation of mass is not applicable to reactions.
26. Which law of chemical combination is shown by the following data ?  
$$\underbrace{\text{NaCl}_{(aq)} + \text{AgNO}_{3(aq)}}_{x \text{ g}} \longrightarrow \underbrace{\text{NaNO}_{3(aq)} + \text{AgCl}_{(s)}}_{x \text{ g}}$$
27. What is the scientific name of blue rock pigeon ?
28. Wings in the birds are the modification of :  
(A) Hind limbs (B) Fore limbs  
(C) Both of these (D) None of these.
29. What is the common name of larva of mosquito is known as ?
30. Depression in sand produced when an object is placed over it is :  
(A) proportional to area of force of cuboid touching the sand  
(B) inversely proportional to area of cuboid touching the sand  
(C) None of these.
31. Sound cannot travel in :  
(A) vacuum (B) solids  
(C) liquids (D) gases.
32. 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 these.
33. Speed of sound at room temperature in air is  $345 \text{ m s}^{-1}$ . If a tuning fork produces a pure tone of 1 kHz, wavelength of sound produced in air is :  
(A) 345 m (B) 0.345 m  
(C) 3.45 m (D) 34.5 m.



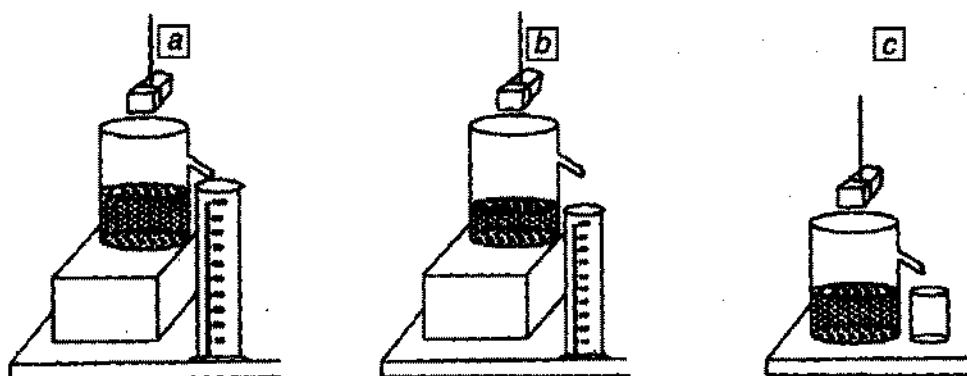
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## 2 Marks Questions

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.



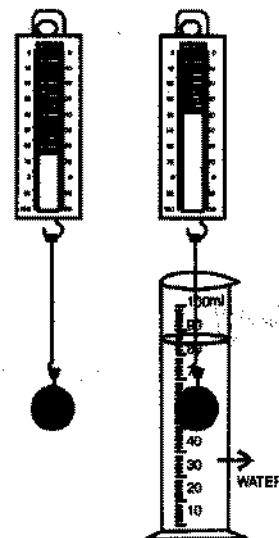
35. Three students *a*, *b*, and *c* determined the volume of a solid by immersing it in water in overflow can set up as shown in the figure.



The result obtained will be wrong for :

- (A) student *a*
  - (B) student *b*
  - (C) student *c*
  - (D) All the three students.
36. A student notes down the observations in two spring balances and measuring cylinder as shown in the figures.

- (A)  $36 \text{ cm}^3$
- (B)  $64 \text{ cm}^3$
- (C)  $28 \text{ cm}^3$
- (D)  $64 + 36 = 100 \text{ cm}^3$ .



# 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. Calculate the relative molecular mass of  $\text{HNO}_3$ .
2. How is pulmonary tuberculosis spread ?
3. How is oxygen returned to atmosphere ?
4. Give the main points of Bohr's model of atom.
5. Give the limitations of Rutherford's model of atom.
6. Fertile soil has a lot of humus. How?
7. What is soil erosion ? What are methods of preventing soil erosion ?
8. What do you mean by symptoms of disease ? Explain giving two examples.
9. Why are communicable diseases called infectious diseases ?
10. How do annelids differ from arthropods ?
11. List any three general ways of preventing infection.
12. Write four general characters of class pisces.
13. Give two practical applications of reflection of sound.
14. What is normal range of hearing of a normal man ?
15. A person holds a bundle of hay over his head for half an hour and gets tired. Has he done some work ? Justify your answer.
16. If the momentum of two bodies are equal, will their kinetic energy be also equal ? Justify.
17. Show that the sum of K.E. and P.E of a freely falling body is conserved.
18. A ball is dropped from a height of 10 m. If the energy of the ball reduces by 40% after striking the ground. How much can the ball bounce back ? Given  $g = 9.8 \text{ m s}^{-2}$ .
19. (a) A silver ornament of mass ' $m$ ' gram is electroplated with gold equivalent to 1% of the mass of silver. Compute the ratio of the number of atoms of gold and silver in the ornament.  
(b) Calculate the number of moles and number of molecules in 9g of  $\text{H}_2\text{O}$ .
20. Explain the following with suitable examples :  
(i) Atomic number (ii) Mass number (iii) Isotopes (iv) Isobars (v) Nucleons.
21. "Air pollution is the fifth largest killer in India which accounts for 6.2 lakh lives per year.  
Name the five most critically polluted regions in the country. What is acid rain? Explain effects of acid rains.

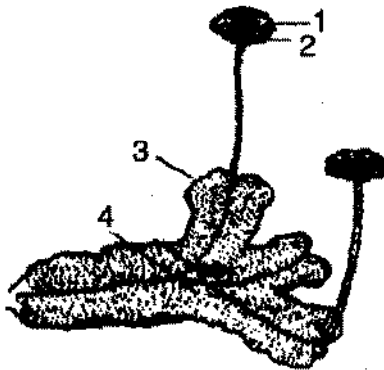
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22. (a) What are Whittaker bars of classification.  
(b) Write general character of phylum mollusca. Give examples.
23. What is an echo ? What are necessary conditions for its production ?
24. Define K.E. and momentum. Give their SI units. How are they related to each other ?

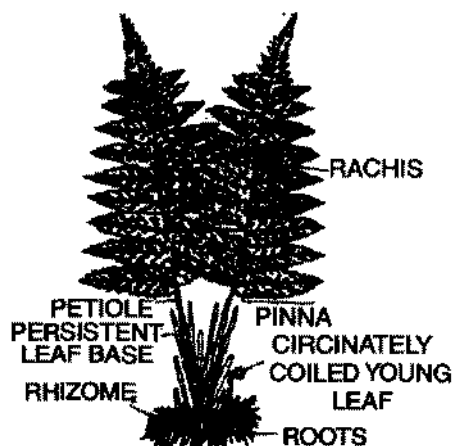
## SECTION—B

### 1 Mark Questions

25. Law of conservation of mass fails in case of reactions.
26. Law of conservation of mass holds good for :  
(A) Physical changes (B) Chemical changes  
(C) Both A and B (D) None.
27. Which part in the figure is labelled as thallus in plant body ?



28. Identify the plant in the figure and write the division to which it belongs.



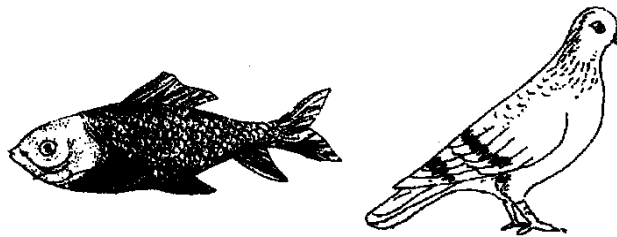
29. Which of the following is respiratory structure of larva of mosquito ?  
(A) Trachea (B) Lung  
(C) Malpighian tubule (D) Respiratory system.
30. A body is dipped first in water and then in kerosene, it will weigh:  
(A) more in water (B) more in kerosene oil  
(C) same in both cases.

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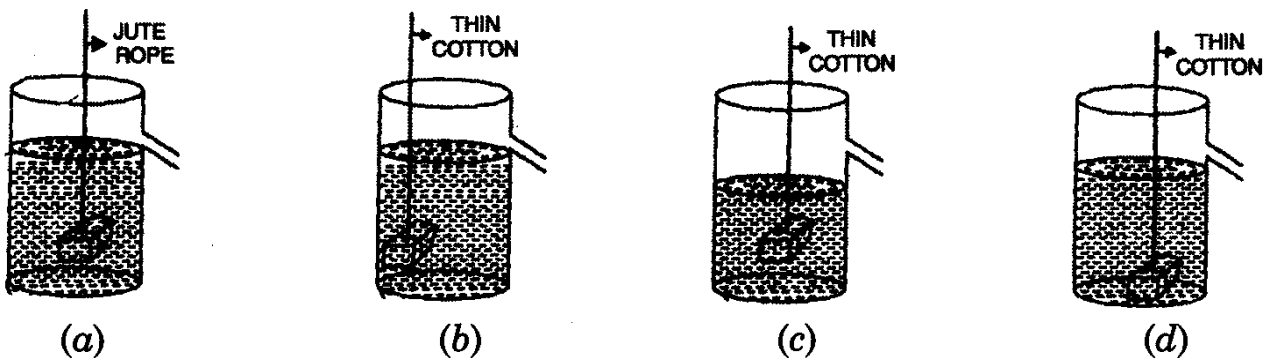
31. Frequency less than 20 Hz is called :
- (A) audible sound (B) ultrasonic  
(C) infrasonic (D) None of these.
32. A tub full of water upto brim has ice floating in water with part of it outside water. When ice melts,
- (A) no water will flow out from tub (B) water will partly flow out  
(C) level of water will fall in the tub (D) nothing can be said with certainty.
33. Density of water vapours is :
- (A) equal to that of dry air (B) less than that of dry air  
(C) more than that of dry air. (D) same as dry air.

## 2 Marks Questions

34. Observe the pictures of a bird and a bony fish. Write the feature that places them in the same phylum.  
Also write the names of their respective classes.



35. In an experiment to establish the relation between loss in weight of an immersed solid with weight of water displaced by it, the correct set up is shown in the figure:



- (A) (a) (B) (b)  
(C) (c) (D) (d)
36. Faces of a cuboid are marked 1 to 6 and depression on sand caused by each face is recorded. Record showed that :
- (A) opposite parallel faces of cuboid caused the same depression in sand  
(B) adjacent faces caused equal depression in sand  
(C) all faces caused the same depression  
(D) opposite parallel faces caused unequal depression.

# 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. Name the elements present in quick lime.
2. What is the percentage of nitrogen in the atmosphere ?
3. Expand CFCs.
4. Give the electronic configuration of elements with atomic number 2, and 9.
5. Compare the properties of electrons and protons.
6. What are different states in which water is found during water cycle ?
- 100** 7. What would happen if all the oxygen present in the environment is converted to ozone ?
8. How do pteridophytes differ from phanerogams ?
9. Why is rabies called a neurotrophic disease ? Discuss its prevention.
10. List three conditions when you are most likely to fall sick.
11. Define : Coelom, triploblastic and bilateral symmetry.
12. Differentiate infectious and non-infectious diseases. Write examples of each.
13. How does the speed of sound differ in different mediums ?
14. Define wavelength. What is SI unit of wavelength ?
15. Explain the working of SONAR.
16. A light body and a heavy body have equal kinetic energies. Find out the ratio of their momenta.
17. How is crack in a metal sheet detected?
18. If an electric iron of 1,200 W is used for 30 minutes every day, find the energy consumed in B.O.T. in month of April.
19. (a) Give main points of Bohr's model of atom.  
(b) What are isotopes and isobars? Give one example in each case.
20. (a) In photosynthesis, 6 molecules of carbon dioxide combine with an equal number of water molecules through a complex series of reactions to give a molecule of glucose having a molecular formula  $C_6H_{12}O_6$ . How many grams of water would be required to produce 18 g of glucose ? Compute the volume of water so consumed assuming the density of water to be  $1 \text{ g cm}^{-3}$ .  
(b) Define mole.
21. What is meant by hydrophobia. Write its four symptoms. Write preventive measures.
22. 'What else one does expect from mountains, if there is heavy tourist rush?' List the causes for recent destruction and loss of life due to heavy tourism.
23. What is power ? Give its SI unit. How do you differentiate kW from kWh ?  
The Jog falls in Karnataka are nearly 20 m high and 2,000 tons of water falls

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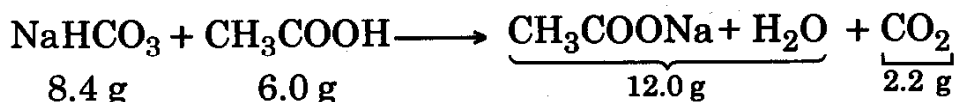
from it in a minute. Calculate the equivalent power if all this energy could be utilized ? Given  $g = 10 \text{ m s}^{-2}$ .

24. What is range of hearing of a normal ear ? Explain the working of human ear.

## SECTION—B

### 1 Mark Questions

25. Which law is shown by following equations?



26. In nuclear reactions some mass disappears, why?

27. Name two classes of animal kingdom which possess scales.

28. Find out the false statement :

- (A) Aves are warm blooded, egg laying and have four chambered heart.
- (B) Aves have feather covered body, fore limbs are modified as wing and breathe through lungs
- (C) Most of the mammals are viviparous
- (D) Fishes, amphibians and reptiles are oviparous.

29. Anopheles lays eggs on which material?

30. Pressure exerted by a body depends upon its:

- (A) mass only
- (B) area only
- (C) weight only
- (D) All of these.

31. Law of conservation of momentum can be deduced from Newton's:

- (A) first law of motion
- (B) second law of motion
- (C) third law of motion
- (D) None of three.

32. Cuboid is mounted on the top of an inverted pointed object, the pressure exerted by set up on sand :

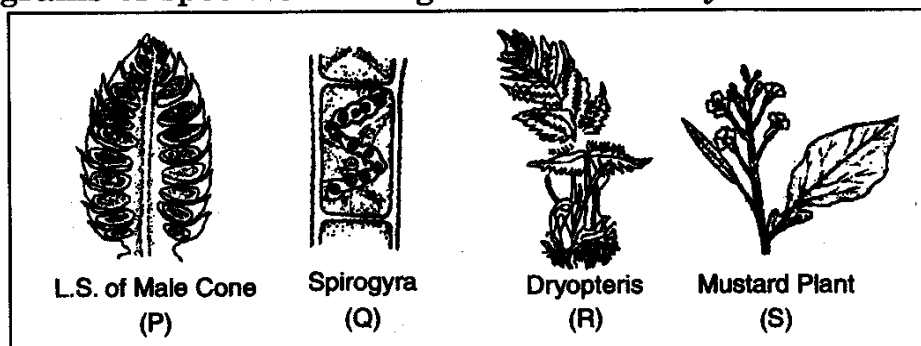
- (A) will increase
- (B) will decrease
- (C) will remain the same
- (D) cannot be predicted.

33. In wave motion in string, every particle :

- (A) oscillates
- (B) does not oscillate
- (C) displace from one end of the other
- (D) does not displace at all.

### 2 Marks Questions

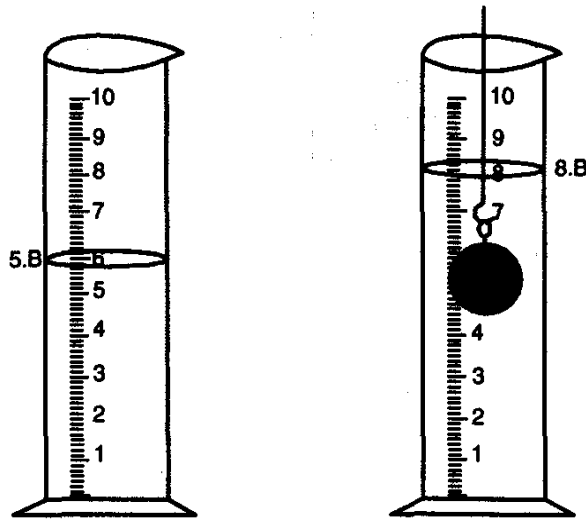
34. Four diagrams of specimens are given below. They are labelled as P, Q, R, S.



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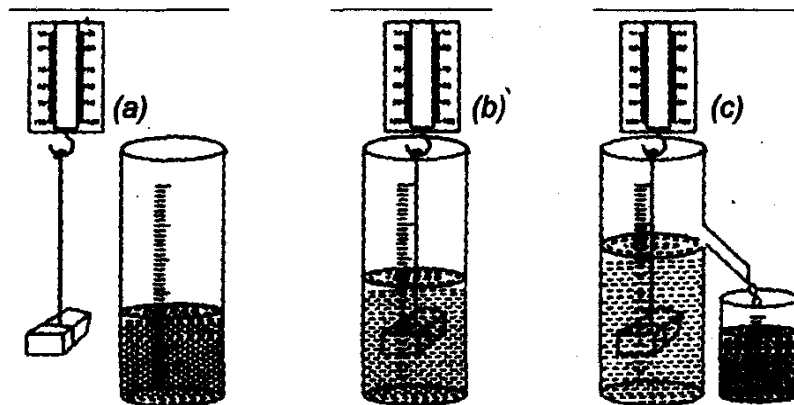
Which one of these reproduces by conjugation ? Name the division where it follows.

35. The water level in measuring cylinder, before and after immersing a solid in it, is shown in figure. The volume of given solid in  $\text{cm}^3$  is :



- (A)  $2.8 \text{ cm}^3$                       (B)  $2.2 \text{ cm}^3$   
(C)  $2.0 \text{ cm}^3$                       (D)  $1.8 \text{ cm}^3$ .

36. Reading of spring balance will be:



- (A) equal in  $a, b, c$ .                      (B) equal in  $a, b$  only  
(C) equal in  $b, c$  only                      (D) equal in  $a, c$  only