

NAAHAR PUBLIC SCHOOL CBSE SENIOR SECONDARY

TERM II EXAM

CLASS: VIII

SUBJECT: SCIENCE

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MARKS :80

I. FILL IN THE BLANKS (10x1=10)

1. A person 1 m in front of a plane mirror seems to be **2 m** away from his image.
2. The passage of an electric current through a solution causes **chemical** effects.
3. If you pass current through copper sulphate solution, copper gets deposited on the plate connected to the **negative** terminal of the battery.
4. The process of depositing a layer of any desired metal on another material by means of electricity is called **electroplating**.
5. Time taken by an object to complete one oscillation is called the **time period**.
6. The unit of frequency is **hertz**.
7. Unwanted sound is called **noise**.
8. Sprinkling of powder on the carrom board **reduces** friction.
- (e) Sliding friction is **lesser** than the static friction.
9. To move a loaded trolley, we have to **pull** or **push** it.
10. The north pole of a magnet **repels** the north pole of another magnet.

II. CHOOSE THE BEST ANSWER

(10x1=10)

1. The angle of incidence is _____ equal to the angle of reflection.
(a) Always (b) Sometimes (c) Under special conditions (d) Never
2. Image formed by a plane mirror is
(a) virtual, behind the mirror and enlarged. (b) virtual, behind the mirror and of the same size as the object. (c) real at the surface of the mirror and enlarged. (d) real, behind the mirror and of the same size as the object.
3. A tester is used to check the conduction of electricity through two liquids, labelled A and B. It is found that the bulb of the tester glows brightly for liquid A, while it glows very dimly for liquid B. You would conclude that
(i) liquid A is a better conductor than liquid B. (ii) liquid B is a better conductor than liquid A. (iii) both liquids are equally conducting. (iv) conducting properties of liquid cannot be compared in this manner.
4. Sound can travel through
(a) gases only (b) solids only (c) liquids only (d) solids, liquids and gases
5. Voice of which of the following is likely to have a minimum frequency?
(a) Baby girl (b) Baby boy (c) A man (d) A woman
6. Four children were asked to arrange forces due to rolling, static and sliding frictions in a decreasing order. Their arrangements are given below. Choose the correct arrangement.
(a) rolling, static, sliding (b) rolling, sliding, static (c) static, sliding, rolling (d) sliding, static, rolling
7. Alida runs her toy car on dry marble floor, wet marble floor, newspaper and towel spread on the floor. The force of friction acting on the car on different surfaces in increasing order will be
(a) wet marble floor, dry marble floor, newspaper and towel (b) newspaper, towel, dry marble floor, wet marble floor
(c) towel, newspaper, dry marble floor, wet marble floor (d) wet marble floor, dry marble floor, towel, newspaper

8. When we press the bulb of a dropper with its nozzle kept in water, the air in the dropper is seen to escape in the form of bubbles. Once we release the pressure on the bulb, water gets filled in the dropper. The rise of water in the dropper is due to

(a) **pressure of water** (b) gravity of the earth (c) shape of rubber bulb (d) atmospheric pressure

9. Adolescents should be careful about what they eat, because

(i) proper diet develops their brains. (ii) **proper diet is needed for the rapid growth taking place in their body.** (iii) adolescents feel hungry all the time. (iv) taste buds are well developed in teenagers.

10. Reproductive age in women starts when their

(i) **menstruation starts.** (ii) breasts start developing. (iii) body weight increases. (iv) height increases.

III. STATE TRUE OR FALSE

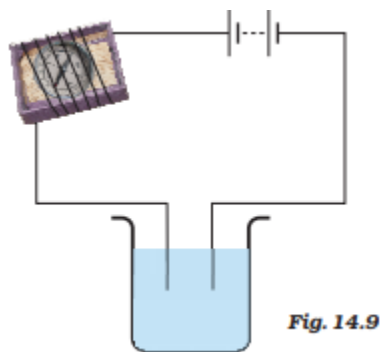
(12x1/2=6)

1. Noise pollution may cause partial hearing impairment. F
2. Oviparous animals give birth to young ones. F
3. External fertilisation takes place in the frog. T
4. Amoeba reproduces by budding. F
5. Fertilisation is necessary even in asexual reproduction. F
6. Binary fission is a method of asexual reproduction. T
7. A zygote is formed as a result of fertilisation. T
8. An embryo is made up of a single cell. F
9. The number of oscillations per second of a vibrating object is called its time period. F
10. If the amplitude of the vibration is large, the sound is feeble. F
11. For human ears, the audible range is 20 Hz to 20,000 Hz. T
12. The lower the frequency of vibration, the higher the pitch. F

IV. ANSWER THE FOLLOWING QUESTIONS (ANY SEVEN)

(7x2=14)

1. Name three liquids, which when tested in the manner shown in Fig. 14.9, may cause the magnetic needle to deflect.



Soln:

Saltwater

II. Lemon juice

III. Vegetable oil

These liquids can be taken in a beaker to show the passage of electricity, as they will show a deflection in the magnetic needle.

2. Does pure water conduct electricity? If not, what can we do to make it conduct?

Soln:

Pure water does not conduct electricity, as it does not contain any type of salt. Adding a small amount of Common salt (Sodium Chloride, i.e., NaCl) will turn the water into a conducting medium.

3. A child staying in a coastal region tests the drinking water and also seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?

Soln:

The amount of dissolved salts present in the seawater is more than that of the drinking water. So, seawater will be a better conductor than drinking water. That is the reason behind the increased deflection of the needle in the seawater when compared to the drinking water.

4. Lightning and thunder take place in the sky at the same time and at the same distance from us. Lightning is seen earlier, and thunder is heard later. Can you explain why?

Soln:

The speed of light is more than the speed of sound. Thus, lightning is seen first, which is accompanied by thunder later.

5. In which female reproductive organ does the embryo get embedded?

Soln:

In the female reproductive organ, the embryo gets attached to the uterus.

Once it gets attached, there occurs the formation of body parts like legs, hands, eyes etc.

The embryo is then called a foetus

6. Explain why sportsmen use shoes with spikes.

Soln:

Sportsmen use shoes with spikes because of the better grip given by spikes while running. This is because the force of friction between the shoes and the ground increases with the help of spikes.

7. State the effect of the force in each case.

(a) Squeezing a piece of lemon between the fingers to extract its juice.

(b) Taking out paste from a toothpaste tube.

a) We make a muscular force to extract the juice of the lemon by squeezing it. As a result, the shape of the lemon gets changed.

b) To take out paste from the toothpaste tube, we use our muscular force. This muscular force acting on the toothpaste tube leads to a change in its shape.

8. A rocket has been fired upwards to launch a satellite in its orbit. Name the two forces acting on the rocket immediately after leaving the launching pad.

Soln:

The force of gravity is the one which acts on the rocket to pull it towards the ground, and the other one is the force of friction due to the earth's atmosphere, which opposes its motion.

V. ANSWER THE FOLLOWING QUESTIONS (ANY FIVE)

(5x3=15)

1. Suppose you are in a dark room. Can you see objects in the room? Can you see objects outside the room? Explain.

Soln:

If a person is inside a room where there is no light, it is then impossible to see the object inside the room, but the object outside the room can be seen easily. When light falls on the eyes after reflecting from the object, it becomes visible. If the room is dark, then the object which is in the room reflects no light. Hence, the person is not able to see the objects in the room where there is no light.

2. State the laws of reflection.

Soln:

The law of reflection states that:

- a) The angle of reflection and the angle of incidence are always equal to one another.
 - b) The reflected ray, the incident ray, and the normal to the reflective surface at the point of incidence all come on the same plane.
3. Differentiate between regular and diffused reflection. Does diffused reflection mean the failure of the laws of reflection?

Soln:

Sl.No **Regular Reflection**

Diffused Reflection

1. It occurs when the surface is smooth.
 It occurs when the surface is rough.
2. Reflected rays move in a particular direction.

Reflected rays scatter in random directions.

Example: Reflection by the plane mirror

Example: Reflection by the road surface.

4. When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?

Soln:

The compass needle shows a deflection, which concludes that current is flowing through the wire. The circuit becomes complete as the free ends of the tester are immersed inside the solution. So, the solution is conducting solution; hence, deflection is obtained in the compass needle.

5. Differentiate between internal fertilisation and external fertilisation.

Soln:

Fertilisation, in general, is defined as the fusion of a male and a female gamete.

Internal fertilisation

It occurs inside the female body.

There are high chances of survival of the offspring.

Internal fertilisation protects the fertilised egg or embryo from harsh environments.

Examples are a cow, human, dog, monkey, etc.

External fertilisation

It occurs outside the female body.

There are low chances of survival of the offspring.

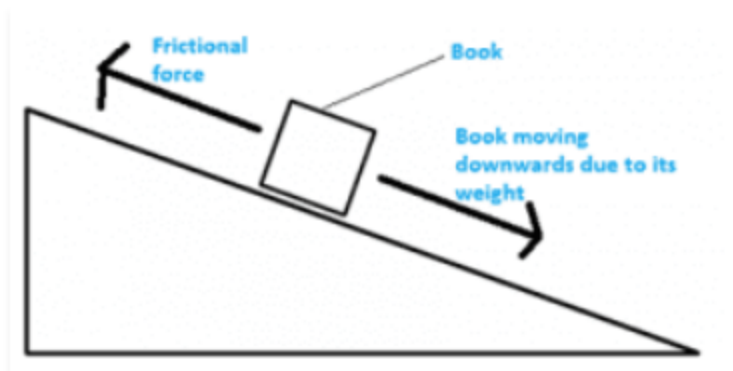
Most aquatic animals use this type of fertilisation, and the advantage of external fertilisation is that it produces a large number of offspring due to external hazards.

Examples are fish, frog, organisms etc.

6. Suppose your writing desk is tilted a little. A book kept on it starts sliding down. Show the direction of frictional force acting on it.

Soln:

When book slides down on the desk, a frictional force acts between the book and the surface of the desk. The direction of the friction force on the book is opposite to the direction of its motion and acts in an upward direction. It is shown in the diagram below.



7. The sound from a mosquito is produced when it vibrates its wings at an average rate of 500 vibrations per second. What is the time period of the vibration?

Soln:

The time period is defined as the time taken to complete one oscillation. It is also the inverse of frequency.

Time period = $\frac{1}{\text{frequency}}$

Oscillation frequency = 500 Hz

Oscillation frequency = 500 Hz

The time period of the vibration = $\frac{1}{500} = 0.002 \text{ s}$

VI. ANSWER IN BRIEF (ANY FOUR)

(4x5=20)

1) A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.

Soln:

The number of oscillations per second of the vibrating body is known as the frequency of oscillation.

Frequency = $\frac{\text{Total number of oscillations}}{\text{Total time taken}}$

Total time taken

= $\frac{40}{4}$

= 10 Hz

The time period is the time taken to complete one oscillation. It is also the inverse of frequency.

Time period = $\frac{1}{\text{Oscillating frequency}}$

= $\frac{1}{10}$

= 0.1 s

$\therefore$ frequency = 10 Hz

Time period = 0.1 s

2. Explain how you can take care of your eyes.

Soln:

The following points help a person to take care of his eyes:

a) Reading should not be done in bright light as well as in dim light.

b) We should visit an eye specialist at regular intervals of time.

c) If any small insects or dust particles enter our eyes, do not rub them but clean them immediately with cold water.

d) We should avoid direct exposure of our eyes to sunlight.

e) While reading, there should be a distance of at least 25 cm between the eyes and the book.

3. a) Prepare a list of objects around you that are electroplated.

Soln:

Chromium plating: This is done on exterior parts of automobiles in order to obtain a shiny appearance.

Gold Plating: Silver ornaments are coated with a thin layer of gold, and the product is called Gold-plated Ornaments.

Zinc Plating: Iron used for Construction is coated with a Zinc layer in order to protect them from corrosion and rusting.

b) In case of a fire, before the firemen use the water hoses, they shut off the main electrical supply for the area. Explain why they do this.

Soln:

In case of a fire, before the firemen use the water hoses, they shut off the main electrical supply for the area because water sprayed from the hose might conduct electricity which may come in contact with the electrical appliances, which increases the chance of electricity passing through the wire. This may hurt the firemen

4. a) Give examples to show that friction is both a friend and a foe.

Soln:

Advantages of friction

a) Due to friction, we are able to walk.

b) We are able to write because of the friction between the tip of the pen and the paper.

Disadvantages of friction

a) Because of friction, the tires and soles of shoes wear out.

b) Friction produces heat between different parts of the machines. This can damage the machines.

b). Explain why objects moving in fluids must have special shapes.

Soln:

When a body moves through a fluid, it experiences an opposing force which tries to oppose its motion through the fluid. This opposing force is known as the drag force, and the frictional force depends on the shape of the body. By giving the objects a special shape, the force of friction acting on it can be minimised. Hence, it becomes easier for a body to move through the fluid.

5. List changes in the body that take place at puberty.

Soln:

The changes that take place at the time of puberty are as follows:

a) The height and weight of the body will suddenly increase

b) The hair seems to appear in the areas such as legs, hands, face and underarms

c) In females, the enlargement of the ovary takes place and starts producing matured eggs, and on the other hand, in males, the testis grows and starts producing sperms

d) In males, the shoulder broadens, and the chest becomes wide, whereas in females, the region below the waist becomes wider.

e) Acne seems to appear because of the excessive secretion of oil from the skin.

f) In boys, the larynx becomes prominent under the influence of hormones, and the vocal cord becomes longer and thicker, resulting in a hoarse voice.

6. What are sex hormones? Why are they named so? State their function.

Soln:

The chemical substances produced by the sex organs are called sex hormones. For example, in females, the sex hormone produced by the ovary is called oestrogen and in males, the sex hormone produced by the testis is called testosterone.

Some of the functions performed by the sex hormones:

Oestrogen: This hormone is responsible for the development of secondary sexual characteristics in females, like enlargement of breasts, development of female reproductive organs, etc.

Testosterone: This hormone develops secondary sex characteristics in boys, such as the growth of beard, the voice becoming hoarse, the development of the reproductive organs, etc.

7. Define asexual reproduction. Describe two methods of asexual reproduction in hydra(with diagram).

Soln:

In this type of reproduction, the offspring arises from a single organism without the fusion of male and female gametes. It never changes the number of chromosomes.

Budding in hydra place.

Organisms, such as hydra, use regenerative cells for reproduction in the process of budding.

The first step is the formation of buds, which develops as a small outgrowth on the parent's body.

As the bud enlarges, it receives the characteristics of the parent organism.

Once it is developed, it may be detached from the parent body and develop into a new individual.

In some rare cases, the buds may not be detached, forming interconnected buds.

There are also methods like fragmentation, multiple fission etc.

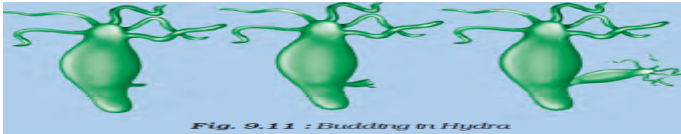


Fig. 9.11 : Budding in Hydra

VIII. Draw and label

(2x2 1/2=5)

1. Draw a labelled sketch of the human eye

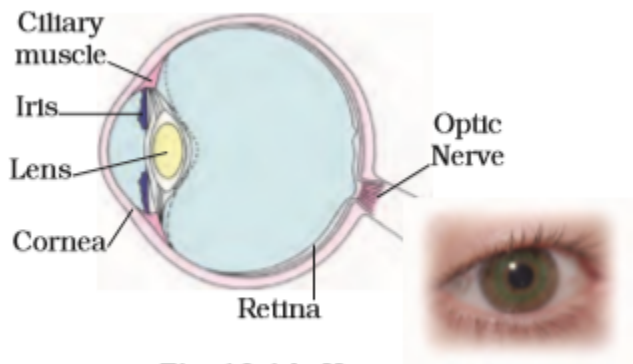


Fig. 16.14 : Human eye

2. Draw the binary fission in amoeba

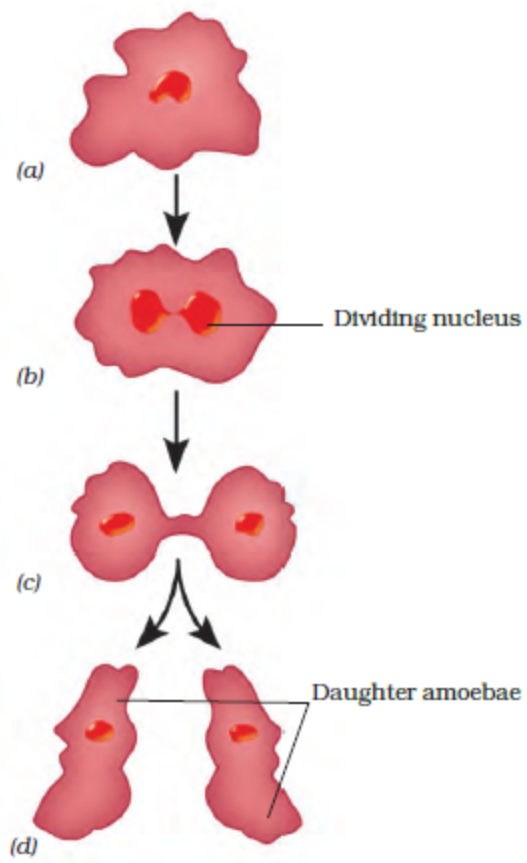


Fig. 9.12 : Binary fission in Amoeba