

**CBSE**  
**Class VIII - Science**

**Time: 2 ½ hrs**

**Total Marks: 80**

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**General Instructions:**

1. The question paper consists of 34 questions and is divided into four sections, A, B, C and D.
  2. All questions are compulsory.
  3. Section A comprises question numbers 1 to 15. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
  4. Section B comprises question numbers 16 to 22. These are SAQs carrying two marks each.
  5. Section C comprises question numbers 23 to 31. These are SAQs carrying four marks each.
  6. Section D comprises question numbers 32 to 34. These are SAQs carrying five marks each.
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**SECTION A**

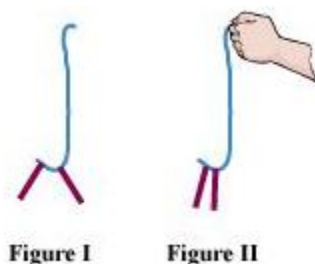
1. Snakes are killed in large numbers because (1)  
(a) They are poisonous.  
(b) They kill rats.  
(c) Their skin has a great demand in the market.  
(d) They damage the crops.
  
2. Mammary glands develop inside the [1]  
(a) Breast  
(b) Stomach  
(c) Throat  
(d) Intestine
  
3. External fertilisation takes place in which of the following animals [1]  
(a) Star fish  
(b) Fish  
(c) Frog  
(d) All of these

4. The Golgi body in plant cells is called [1]  
(a) Dictyosome  
(b) Centriole  
(c) Centromere  
(d) Plastid
5. Which of the following is not an endangered species? (1)  
(a) Dodo  
(b) Flying squirrel  
(c) Black buck  
(d) Snow leopard
6. Fire produced by oil cannot be controlled by [1]  
(a) Water  
(b) Fire Extinguisher  
(c) Sand  
(d) Woolen Blanket
7. Select the incorrect statement: (1)  
(a) Synthetic fibres are wrinkle resistant.  
(b) Synthetic fibres are not attacked by moths.  
(c) Synthetic fibres have low resistance to abrasion.  
(d) Synthetic fibres are light weight.
8. Which of the following is the main cause of global warming? [1]  
(a) Decreasing levels of  $\text{CO}_2$   
(b) Increasing levels of  $\text{CO}_2$   
(c) Decreasing levels of  $\text{NO}_2$   
(d) Decreasing levels of  $\text{O}_2$
9. Which group of animals does not give us food products?  
(a) Honeybee and goat  
(b) Cow and buffalo  
(c) Silkworm and oyster  
(d) Fish and sheep
10. The major source of water pollution in unindustrialised countries is [1]  
(a) Carbon dioxide  
(b) Untreated sewage  
(c) Industrial waste  
(d) Nitrogen dioxide

11. When more than one force acts on an object, the effect on the object is due to the \_\_\_\_\_ force acting on it. (1)

- (a) Stronger
- (b) Weaker
- (c) Net
- (d) Average

12. Figure I shows a pair of charged aluminium leaves that are attached to a metal strip. The leaves are shown as moving away from each other because they are charged by the same kind of charge. When Hari touches the metal strip, the leaves move towards each other and become relaxed, as shown in figure II. [1]



The leaves move towards each other because:

- (a) they lose their charges
- (b) the charges on the leaves increase manifold
- (c) one of the leaves becomes oppositely charged
- (d) the force of repulsion changes to the force of attraction

13. Name the instrument which is used in submarines, tanks and also by soldiers in bunkers to see things outside. [1]

- (a) Kaleidoscope
- (b) Telescope
- (c) Periscope
- (d) Microscope

14. The angle between the orbital and equatorial planes of the Earth is [1]

- (a)  $23.5^\circ$
- (b)  $33^\circ$
- (c)  $47^\circ$
- (d)  $66.5^\circ$

15. Friction is necessary because (1)
- (a) It wastes energy.
  - (b) It wears the sole of our shoes.
  - (c) We can write with its help.
  - (d) It reduces efficiency and speed

### SECTION B

16. Mention two important functions of the nucleus. [2]
17. Write a short note on human sperm. [2]
18. How does irrigation of crop fields help in seed germination? [2]
19. How can burning of fuels cause an increase in the temperature of the Earth leading to global warming? [2]
20. What is the relation between deforestation and obtaining fuel? [2]
21. Can sound travel in vacuum? Explain. [2]
22. Which constellation is called 'Saptarishi' and why it is so called? [2]

### SECTION C

23. [4]
- (a) Write any two changes occurring in the body shape of boys during puberty.
  - (b) Why are acne and pimples commonly seen on the faces of girls and boys undergoing puberty?
24. Draw diagram of the human sperm and label its parts. [4]
25. How can we prevent the spread of diseases such as malaria and dengue? [4]
26. Define combustion. What are the different types of combustion? Describe them with one example each. [4]
27. [4]
- (i) You must have seen dry fruits being sold in sealed, airtight packets. What is the reason for this?
  - (ii) Why should we preserve food properly?

- 28.** [4]  
(a) What are greenhouse gases?  
(b) What are the causes of global warming?
- 29.** [4]  
(a) Mention the components of the circuit of a tester.  
(b) Mention three common solutions which are good conductors of electric current.  
What is common in these solutions?
- 30.** [4]  
(a) What is cataract? How can it be treated?  
(b) What is iris? Write its function.
- 31.** [4]  
(i) Mention any three points to give the importance of gravitational force.  
(ii) Is muscular force a type of contact force?

#### **SECTION D**

- 32.** What is binary fission? How does it take place? Name an organism in which binary fission takes place. [5]
- 33.** What are the various ways of controlling water pollution? (any five). [5]
- 34.** [5]  
(a) Cite any two examples where the objects may get charged when rubbed against any other object.  
(b) What are seismic waves? Name the instrument which records these waves.

**CBSE Board**  
**Class VIII Science**  
**Solution**

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**SECTION A**

1. (c)

The skin of snakes is in great demand for making fancy leather goods. Snake skin is sold at a high price in the market. Therefore, for easy money, snakes are killed indiscriminately to obtain their skin.

2. (a)

Mammary glands develop inside the breasts.

3. (a)

External fertilisation takes in all of these animals as the fusion of male and female gamete takes place outside the female body in them.

4. (a)

The Golgi body in plants is not well developed and is called as dictyosome.

5. (a)

Species whose numbers are diminishing to such a low level that they may face extinction soon are known as endangered species. Species which no longer exist anywhere on the Earth are called extinct species. Flying squirrel, black buck and snow leopard are examples of endangered species, while the dodo is an example of an extinct species.

6. (a)

Water is not suitable to control fire caused by burning oil because it sinks below the oil, and oil keeps burning on top. For fires involving materials like oil, a carbon dioxide fire extinguisher is the best controlling agent.

7. (c)

Synthetic fibres have high resistance to abrasion.

8. (b)

Increasing levels of CO<sub>2</sub> is the main cause of global warming.

9. (c)

Silkmoth provides us with silk fibres whereas pearl oyster provides us with pearl.

**10.(b)**

In rural areas, dumping of untreated sewage causes water pollution.

**11.(c)**

When more than one force acts on an object, the effect on the object is due to the net force acting on it.

**12.(a)**

When charged bodies are brought into contact, the charge on one body can be transferred to another body. This is called charge transfer by conduction. When Hari touches the metal strip, the charges on the aluminium leaves get transferred to his hand, through the strip. At the same time, the hand loses the charges to the Earth, through the body. This process continues until all the charges from the leaves get transferred to the Earth. Hence, the aluminium leaves become uncharged, move toward each other, and become relaxed.

**13.(c)**

A periscope is used in submarines, tanks and also by soldiers in bunkers to see things outside.

**14.(a)**

The angle between the orbital and equatorial planes of the Earth is  $23.5^\circ$ .

**15.(c)**

Friction is necessary to write. We are able to write on paper because there is friction between the tip of the pencil (or pen) and paper.

**SECTION B**

**16.**

- i. The nucleus controls all the life processes taking place inside the cell.
- ii. It also helps in the transmission of hereditary characteristics from one generation to another.

**17.** The sperm is the male gamete produced by the testes. It is a single cell with all the usual cell components. It is very small in size. Each sperm has a head, a middle piece and a tail.

**18.** Seeds do not germinate under dry conditions. Irrigation of crop fields provides sufficient moisture for the germination of seeds.

- 19.** In most of the cases, carbon dioxide is released during burning of fuels. Carbon dioxide is a green house gas. It causes an increase in the temperature of the Earth by trapping the Sun's heat rays and thus, causes global warming.
- 20.** Wood is used as firewood or turned into charcoal and used for cooking and heating purposes. Obtaining wood for fuel leads to deforestation. Due to deforestation, there will be no wood left for human use in a few years.
- 21.** Sound cannot travel in vacuum because sound travels by producing a vibration in the molecules of the medium surrounding it, and there are no molecules in vacuum.
- 22.** Ursa Major is called as Saptarishi because it has seven prominent stars.

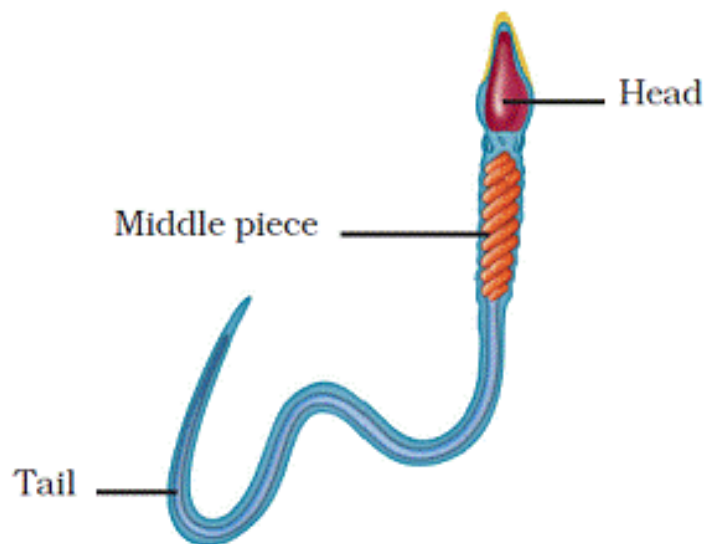
### SECTION C

**23.**

(a)

- i. During puberty, the shoulders of boys become broader and their chest becomes wider.
  - ii. The muscles of boys also become more prominent during puberty.
- (b) The secretion from the sweat and sebaceous glands increases during puberty. This causes acne and pimples on the face of boys and girls during this age.

**24. Structure of sperm**



**25.** We can prevent the spread of diseases, such as malaria and dengue, in the following ways:

- (i) Pools of stagnant water around the houses should be drained out so that mosquitoes do not breed in them.
- (ii) The windows and doors of the house should have a fine iron wire mesh so that mosquitoes cannot enter the house.
- (iii) Insecticides should be sprayed in the house periodically to kill mosquitoes.
- (iv) Oil should be sprayed on the surface of water in dirty water drains to kill the larvae of mosquitoes.
- (v) Mosquito-repellent creams should be applied on the exposed parts of the body before sleeping at night. Mosquito-repellent devices can also be used.

**26.** A chemical process in which a substance reacts with the oxygen (present in the air) to give heat and light is called combustion.

The different types of combustion are:

1. Rapid combustion - The combustion reaction in which a large amount of heat and light are produced in a short time is called rapid combustion. For example, the burning of a wax candle.
2. Spontaneous combustion - The combustion reaction which occurs on its own i.e. without the help of any external heat is called spontaneous combustion. For example, the burning of white phosphorus on its own at room temperature.
3. Explosion - A very fast combustion reaction, in which a large amount of heat, light and sound are produced, is called an explosion (explosive combustion). For example, fireworks exploded during festivals.

**27.**

- (i) Some fungi reproduce by the spore formation. When these spores settle on food items such as dry fruits; results in the growth of fungus which spoils the dry fruits. Hence, to avoid the entry of such spores, the dry fruits are sold in sealed, airtight packets.
- (ii) Action of microorganisms on food spoils the food. If such spoiled food is consumed, it may lead to food poisoning. When bacteria and fungi come in contact with food, they start decomposition activities which results in release of certain chemical toxins which contaminate the food. consumption of spilit food may cause serious illness and food poisoning. Hence, to avoid such instances, we preserve food properly.

**28.**

- (a) The gases which can trap the Sun's heat rays in the Earth's atmosphere by producing greenhouse effect leading up to the heating of the Earth's atmosphere are called greenhouse gases.
- (b) Undue increase in temperature of the Earth's atmosphere due to excessive greenhouse effect is called global warming. The green house gases such as CO<sub>2</sub>, water vapours, methane etc. form a thick layer around the Earth. When the heat rays coming from the Sun fall on the Earth's surface, some of these rays are absorbed by the Earth and some are reflected back. The cover of greenhouse gases does not allow these reflected heat rays to leave the Earth's atmosphere completely. This effect keeps the Earth's atmosphere warm. Rising amount of CO<sub>2</sub> causes more and more heat rays to be trapped in the Earth's atmosphere. This results in excessive heating of the Earth's atmosphere, and therefore, an increase in temperature. This results in global warming.

**29.**

- (a) The components are:
  - 1. Battery
  - 2. Leads or wires
  - 3. Key
  - 4. Bulb/LED/magnetic compass
- (b) Some good conductors are:
  - 1. Common salt in water
  - 2. Hydrochloric acid in water
  - 3. Copper sulphate in waterThey all are solutions of acid, base or salt in water.

**30.**

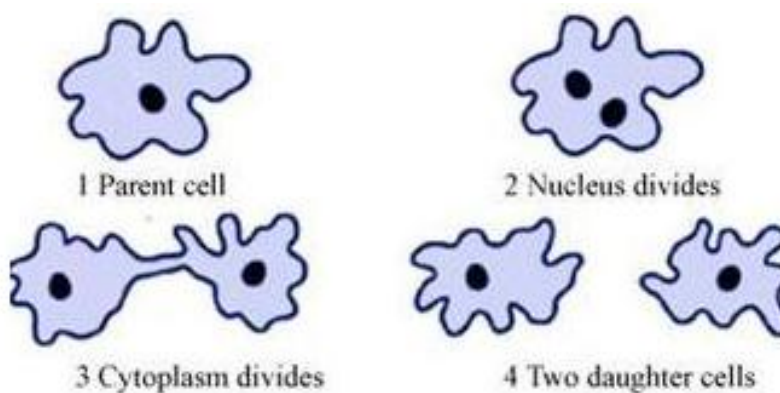
- (a) Cataract is a condition in which the eye lens becomes cloudy and the eyesight becomes blurred. It can be treated by surgery. The opaque lens is removed and a new artificial lens is inserted.
- (b) The iris is a dark muscular structure which gives the eye its distinct colours. It controls the amount of light entering into the eye.

**31.**

- (i)
  - (a) The gravitational force of the earth keeps us bound to the earth.
  - (b) Gravitational force between earth and sun makes the earth move around the sun.
  - (c) Gravitational force between moon and earth makes the moon go around the earth.
- (ii) Yes, muscular force needs to be in contact with the body on which it acts, so it is a contact force.

## SECTION D

- 32.** When one mature cell splits into two daughter cells, the process is called binary fission. In binary fission, first the nucleus divides into two nuclei. The cytoplasm then divides into two parts each containing a nucleus. The stretching leads to the formation of two daughter cells. The cells formed grow into mature cells. Example - binary fission takes place in Amoeba.



- 33.** The various ways of controlling water pollution are as follows:

- The use of fertilisers and pesticides in the fields should be controlled and farmers should use correct amounts of these so that excessive amounts are not washed into the water bodies.
- Sewage should be treated properly at the sewage treatment plants to make it harmless before discharging it into water bodies.
- Industrial wastes should be treated well and all the toxic and harmful chemicals should be removed in the treatment plants before discharging them off in the water bodies.
- Garbage and dead bodies should not be thrown into rivers, lakes or open drains.
- People should be made aware of the harmful effects of water pollution so that they may cooperate and help in preventing it.

**34.**

(a)

- When a plastic refill is rubbed with polythene, it acquires a small electric charge.
- When a plastic comb is rubbed with dry hair, it acquires a small charge.

(b) Tremors or vibrations caused by the earthquakes which travel in the form of waves within the Earth or along the Earth's surface, are called seismic waves. Seismograph is an instrument which records these waves.