

CBSE Board
Class VIII Science

Time: 2 ½ hrs

Total Marks: 80

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. Which group of animals does not give us a food product? (1)
(a) Honeybee and goat
(b) Cow and buffalo
(c) Silk moth and oyster
(d) Fish and sheep

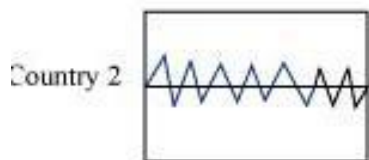
2. What do we call the storage sacs of the cell? [1]
(a) Plastids
(b) Vacuoles
(c) Mitochondria
(d) Ribosomes

3. What term is used for the stoppage of the menstrual cycle? [1]
(a) Ovulation
(b) Menstruation
(c) Menarche
(d) Menopause

4. The sac containing the testis is called the [1]
(a) Testicle
(b) Scrotum
(c) Epididymis
(d) Oviduct
5. Coal burns in air to form mainly (1)
(a) Carbon dioxide
(b) Carbon monoxide
(c) Carbon
(d) Water
6. Exhaustible natural resources in nature are (1)
(a) Limited
(b) Unlimited
(c) Abundant
(d) Not available
7. Maximum light emitted by a candle comes from the [1]
(a) Red zone
(b) Yellow zone
(c) Blue zone
(d) Orange zone
8. Tools meant for cutting and piercing always have (1)
(a) A long handle
(b) Smooth edges
(c) Sharp edges
(d) All of the above
9. Carbon monoxide when inhaled binds to hemoglobin in the blood and forms a compound called [1]
(a) Decarboxyhemoglobin
(b) Oxyhemoglobin
(c) Carboxyhemoglobin
(d) Carboxylhemoglobin
10. Which of the following is not a chemical method to purify water? [1]
(a) Use of bromine
(b) Use of Chlorine
(c) Use of Hydrogen peroxide
(d) Filtration

- 11.** Rahul wants to purchase a house in a country. He has to choose a place among four countries. The seismographic readings of four countries are shown in the given figure. Among the given countries, which country should he select for living? [1]

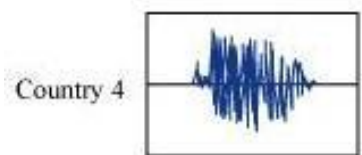
(a)



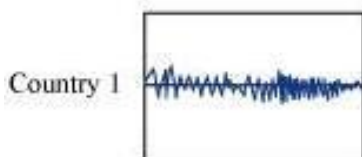
(b)



(c)



(d)



- 12.** The frictional force exerted by a fluid is called

[1]

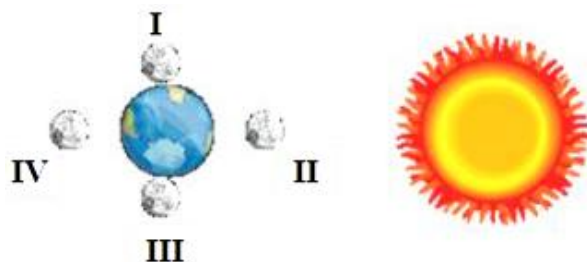
- (a) Brag
- (b) Drag
- (c) Drab
- (d) Thread

- 13.** The production of partial vacuum by the removal of air is called

[1]

- (a) Function
- (b) Suction
- (c) Air function
- (d) Pumping

14. The given diagram shows four positions of the Moon in its orbit around the Earth. [1]



The full moon phase is represented by the position labeled

- (a) I
- (b) II
- (c) III
- (d) IV

15. Following are pairs of various constellations and the number of prominent stars in them. Choose the incorrect alternative. [1]

- (a) Orion - 3
- (b) Cassiopeia - 5
- (c) Ursa major - 7
- (d) Leo major - 9

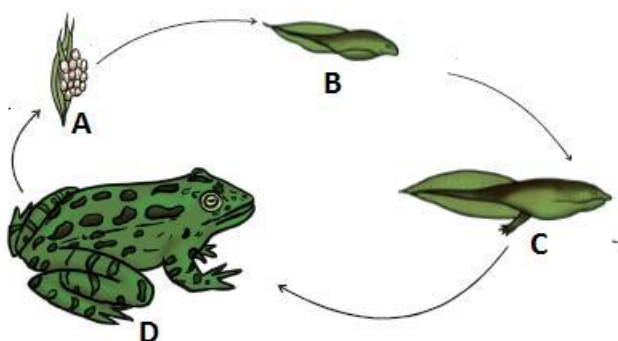
SECTION B

16. What is the relation between deforestation and obtaining fuel? [2]

17.

- (a) How is the zygote formed in sexual reproduction?
- (b) Where does the development of a baby take place in humans? [2]

18. Name the four stages A, B, C and D shown in the below life cycle. [2]



19. Justify the statement: Coal is formed by carbonisation. [2]

20.How does the quantity of CO₂ in the atmosphere rise and become excessive? [2]

21.Select the optical aids among the following: Telescopic aids, Bifocal lenses, Tactual aids, Auditory aids, Contact lenses, Tinted lenses. [2]

22.What do understand by sources of sound? Give any two examples. [2]

SECTION C

23.Draw a labelled diagram of the human ovum. [4]

24.List any four cell organelles found in animal cells and state their functions. [4]

25.Differentiate between plant and animal cells. [4]

26. Explain along with examples why, thermoplastics become soft on heating but thermosetting plastics do not become on heating. Draw labelled diagrams to illustrate your answer. [4]

27.What are the different ways to extinguish fire? Explain. [4]

28. [4]

- i. Discuss the working of a sprinkler system of irrigation.
- ii. Draw a well-labelled diagram of a hoe used to remove weeds.

29.When a wooden block is moving down an inclined plane what is the direction of the frictional force acting on the block? Explain. [4]

30. [4]

- (a) Why is a ray of light considered as an idealisation?
- (b) What are the uses of periscopes?

31. [4]

- (a) Why do the stars appear to us like point objects?
- (b) What is a meteorite? How does it help the scientists?

SECTION D

- 32.** [5]
- (a) Name any two organisms which reproduce by budding.
 - (b) What is a bud?
 - (c) Draw a neat diagram to show the process of budding in Hydra.
- 33.** Give reasons for the following: [5]
- (a) A matchstick can light a tiny splinter of wood but not a big log of wood.
 - (b) Forest fires occur during the hottest summer days.
 - (c) Dry leaves catch fire easily but it is difficult to burn a heap of green leaves.
- 34.** [5]
- (a) What effects does an electric current produce when flowing through a conducting solution?
 - (b) A child staying in a coastal region tests the drinking water and also the sea water with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?

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Class VIII Science
Solution

SECTION A

1. (c)

Silk moth provides silk fibre, whereas oysters provide pearls.

2. (b)

Vacuoles are called the storage sacs of the cell as it stores the solid as well as the liquid materials of the cell.

3. (d)

The menstrual cycle of women stops at the age of 45 to 50 years and this is called menopause.

4. (b)

The testes are enclosed in a sac like structure called scrotum.

5. (a)

When heated in air, coal burns and produces mainly carbon dioxide gas.

6. (a)

Exhaustible natural resources are limited as they take millions of years to form.

7. (b)

The luminous yellow zone of the flame is responsible for majority of the light emitted by a candle.

8. (c)

Tools meant for cutting and piercing always have sharp edges so that they may produce large pressure to cut things easily.

9. (c)

Carboxyhemoglobin is formed when carbon monoxide inhaled binds to the hemoglobin in the blood.

10.(d)

Filtration is not a chemical method of purification of water.

11.(c)

Rahul must take the occurrence of earthquakes in a country under consideration before purchasing the house. The height of vibrations of the seismographic waves determines the intensity of earthquakes. The greater the height, the greater will be the intensity and vice-versa. Also, the number of waves counts for the number of earthquakes. It can be observed from the given seismographic records that earthquakes have occurred with minimum intensity in country 3. Hence, Rahul should purchase a house in country 3.

12.(b)

The frictional force exerted by a fluid is called drag.

13. (b)

The production of partial vacuum by the removal of air is called suction.

14.(d)

On a full moon day, the full disc of the moon is visible and this happens in position IV.

15.(a)

Orion has 7 or 8 bright stars.

SECTION B

16. 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.

17.

- (a) In sexual reproduction, fusion of the male and female gametes produces the zygote.
- (b) The development of a baby takes place in the uterus of the female.

18.

- (a) A – Eggs
- (b) B - Early tadpole
- (c) C - Late tadpole
- (d) D - Adult frog

19.Carbonisation is the conversion of organic matter to a carbon-containing product. Coal mainly contains carbon. Therefore, the conversion of dead vegetation into coal is called carbonisation.

20.The percentage of CO₂ in the atmosphere rises and becomes excessive due to the following human activities:

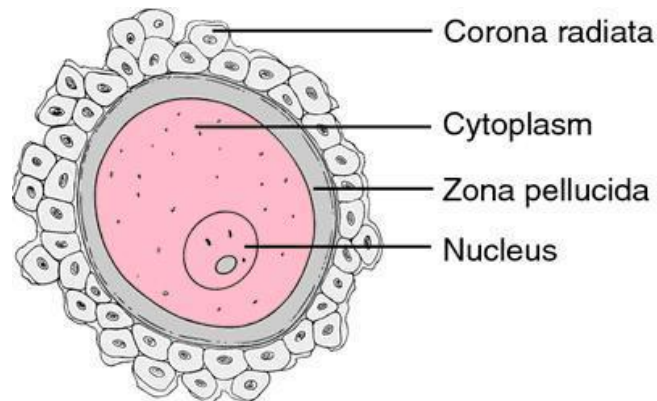
- i. Burning of fuels like coal, petrol or diesel etc.
- ii. Deforestation which leads to an increase in the amount of CO₂ in the air because the number of trees which consume CO₂ is reduced.

21.Telescopic aids, Bifocal lenses, Contact lenses and Tinted lenses.

22.Objects which produce sound are called sources of sound. For example, musical instruments, audio players etc.

SECTION C

23.



Human ovum

24.

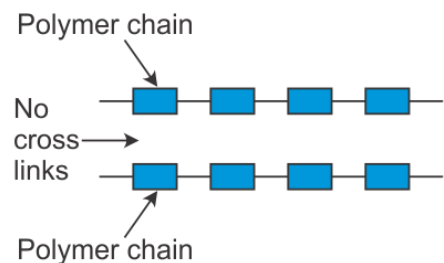
- i. Mitochondria produce energy from food during respiration and are called the power houses of the cell. Both animal and plant cells possess mitochondria.
- ii. Endoplasmic reticulum helps in the transport of substances within the cell.
- iii. Ribosomes help in protein synthesis. Ribosomes are found in both plant and animal cells.
- iv. Golgi bodies synthesise, store and secrete many substances.

25.

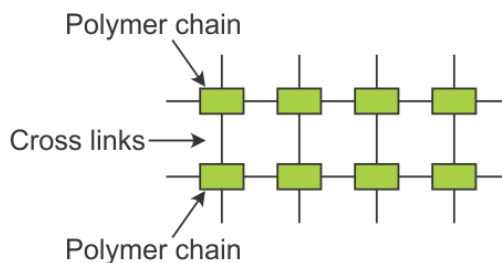
	Plant cell	Animal cell
1	Plant cells have an outer, rigid cell wall.	Animal cells lack a cell wall.
2	Plastids are present in a plant cell.	Plastids are absent in animal cells.
3	Large, central and permanent vacuole is present.	Animal cells have small and many vacuoles which may be temporary.
4	Plant cell is generally larger than animal cell.	Animal cell is smaller in size.

26. Thermoplastics can be softened by heat but thermosetting plastics cannot be softened by heat. This is due to the difference in their structure. Both, thermoplastics and thermosetting plastics are made up of long chain molecules called polymers. In thermoplastics, the long polymer chains are not cross-linked with one another [Figure (a)]. Due to this, on heating, the individual polymer chains can slide over one another and thermoplastic material becomes soft and ultimately melts.

On the other hand, in thermosetting plastics, the long polymer chains are cross linked with one another [Figure (b)]. These cross-links prevent the displacement (or sliding) of individual polymer chains on being heated. Due to this, thermosetting plastics do not become soft on heating (or change their shape on heating) once they have been set into a particular shape.



(a) Polymer chains in thermoplastics (like polythene) are linear, having no cross-links



(b) Polymer chains in thermosetting plastics (like bakelite) have cross-links

For example, polythene is a thermoplastic having linear polymer chains with no cross-linkages, so it becomes soft on heating. On the other hand, bakelite is a thermosetting plastic having long polymer chains connected through cross-links (or held strongly through cross-links), due to which it does not become soft on heating.

27. A fire can be controlled in a number of ways. To extinguish a fire, one or more of the necessary conditions for its cause should be prevented i.e. either the supply of air should be cut off or the ignition temperature should be lowered.

Following are the ways of controlling fire:

1. Water, chemicals like soda etc. are used to bring down the ignition temperature. Water absorbs a lot of heat and brings down the ignition temperature below normal level and the fire is blown out.
2. Sand, soil, thick clothes like blankets etc. are thrown upon the burning surface to cut off the supply of air.
3. Different types of fire extinguishers can also be used. These cut off the supply of air by forming a layer of carbon dioxide gas around the fire.
4. Removal of the cause or origin of fire can also be done. All the combustible materials should be removed from near the fire immediately.

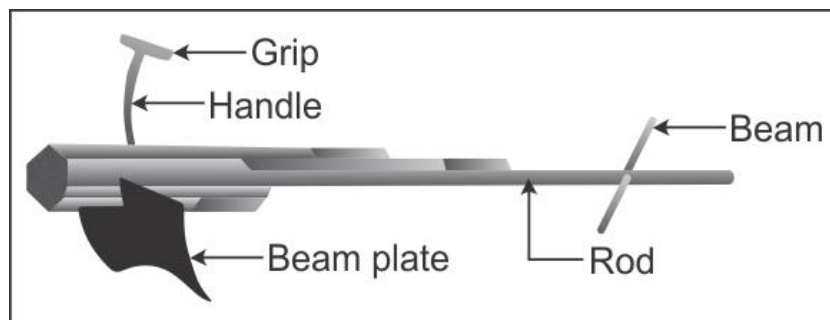
28.

Ans

(i) Sprinkler System: The perpendicular pipes with rotating nozzles on their top are joined to the main pipeline at regular intervals.

When water is allowed to flow through the main pipe under pressure, it escapes from the rotating nozzles and gets sprinkled on the crop as if it is raining.

(ii) Hoe:



29. Frictional force is the force which tends to oppose the motion of the body. This force is directed opposite to the direction of the motion. Hence when a wooden block slides down an inclined plane obliquely, the frictional force acting on the body is directed in the exact opposite direction, i.e. obliquely upward in the same plane.

30.

(a) A ray of light is considered as an idealisation because in reality, there is only a narrow beam of light which is made up of several rays and for simplicity the term ray is used for a narrow beam of light.

(b) Periscopes are used in submarines and tanks and also by soldiers in bunkers to see things outside.

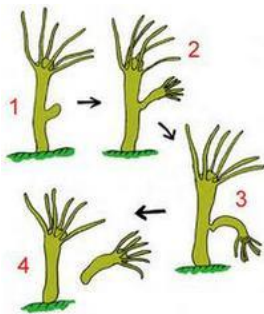
31.

- (a) Stars are much bigger than the Earth, yet they appear to us like point objects because they are millions of kilometres away from the Earth.
- (b) A meteor glows and evaporates quickly as it enters the Earth's atmosphere. Some meteors are large and so they can reach the Earth before they evaporate completely. The body which reaches the Earth is called a meteorite. Meteorites help scientists in investigating the nature of the material from which the solar system was formed.

SECTION D

32.

- (a) Hydra and yeast reproduce by budding.
- (b) A bulb-like projection formed on the body of the organism, which serves the function of reproduction is known as the bud.
- (c)



33.

- (a) A splinter of wood has a low ignition temperature so a burning matchstick can produce sufficient heat to attain the ignition temperature of the splinter of wood. Hence, a matchstick can easily light a splinter of wood. But a log of wood has a high ignition temperature which cannot be attained by the small amount of heat produced by the burning matchstick. Hence a burning matchstick cannot light a log of wood directly.
- (b) Forest fires occur during the hottest summer days. During summer due to the extreme heat, sometimes the ignition temperature of dry grass in the forest is reached and this makes the dry grass catch fire. Now, from this burning grass, the fire spreads to bushes and trees and very soon it spreads to the whole forest causing a forest fire.
- (c) Dry leaves do not contain water and hence they get heated to their ignition temperature easily and catch fire. Whereas, green leaves have high water content and this water does not allow them to get heated to their ignition temperature easily. Hence it is difficult to burn a heap of green leaves.

34.

(a) When electric current flows through a conducting solution, it causes a chemical reaction (or chemical change).

These chemical reactions may produce one or more of the following effects:

- i. Bubbles of gas (or gases) may be formed on the electrodes.
- ii. Metals may get deposited on the electrodes.
- iii. Change in colour of solution may occur.

(b) Sea water contains more dissolved salts than drinking water, which makes it a better conductor. Because of this, the compass needle deflects more in sea water than in drinking water.