

**Goa Board
Class VIII Science
Sample Paper – 3 Solution
Term II**

SECTION A

1. **(d)**
All the food items mentioned are rich in proteins and help in the development of bones.
2. **(a)**
Testosterone is released at the onset of puberty by the testes.
3. **(d)**
The zygote develops into the embryo.
4. **(d)**
Semen is the fluid produced by the male reproductive system which serves as a medium for the sperms to reach the female reproductive system and provide nourishment to the sperms.
5. **(b)**
Robert Brown discovered the nucleus in 1831.
6. **(a)**
Plastids are the coloured pigments which impart colour to the leaves, flowers, fruits and other parts of the plant.
7. **(b)**
All types of combustion produce CO_2 gas.
8. **(c)**
CNG causes less pollution as compared to other fossil fuels.
9. **(a)**
Water is not suitable for fires involving oil. Since water is heavier than oil, it sinks below the oil, which keeps burning on the top.
10. **(c)**
During the burning of a candle, it is only the wax vapours which burn.

11.(b)

A liquid with pH value less than 7 is acidic.

12.(d)

Photochemical smog affects plant growth by forming a layer on the leaves, blocking the absorption of carbon dioxide and also of sunlight by the leaf surface.

13.(d)

Ignition of weapons is the major source of mercury.

14.(a)

Liquid B is a weaker conductor of electricity than liquid A, so the bulb glows dimly in the second case.

15.(a)

The electrode, connected to the positive terminal of a battery, is called the anode.

16.(a)

When an ebonite rod is rubbed with fur, it acquires a negative charge which means it gains electrons.

17.(a)

The weak zones along the boundaries of plates where earthquakes are more likely to occur known as seismic zones.

18.(b)

There are 63 dot patterns or characters in the Braille system

19.(c)

The Moon has no vegetation.

20.(a)

The Earth has only one natural satellite - the Moon.

SECTION B

21. The cell wall surrounding the cell membrane protects plant cells against variations in temperature, high wind speed, atmospheric moisture, etc.
22. Fertilisation which takes place inside the female body is called internal fertilisation. Internal fertilisation occurs in animals such as humans, cows, dogs and hens.
- 23.
- (a) Adrenaline
 - (b) Growth hormone
 - (c) Insulin
 - (d) Thyroxine
24. No, menstruation will not occur in case of pregnancy.
During pregnancy, the egg is fertilised and begins to divide. It then gets embedded in the uterus for further development, for which the thickened uterine lining is essential. Hence, this lining along with its blood vessels will not be shed off leading to no menstruation during pregnancy.
25. The two ways in which carbon dioxide can be supplied for extinguishing fires are:
- i. Carbon dioxide is stored under high pressure as a liquid, in cylinders. On releasing it from the cylinder, it expands enormously in volume and cools down. It forms a blanket around the fire cutting off its contact with oxygen and also brings down the temperature of the fuel. Hence it is an excellent fire extinguisher.
 - ii. Carbon dioxide gas can also be supplied via dry powder of chemicals such as sodium bicarbonate or potassium bicarbonate which release carbon dioxide gas near the fire.
26. Global warming is caused due to the increased amount of CO_2 in atmosphere. The following measures should be taken to prevent global warming:
- i. Deforestation should be stopped and more trees should be planted.
 - ii. All vehicles should use pollution free fuels like CNG or LPG.
27. Eutrophication may be defined as the process of increase in the nutrient content of the aquatic ecosystem which leads to the excessive growth of algae and weeds on the water surface.
28. In our everyday lives, we use tap water and not distilled water. Tap water has salts dissolved in it which makes it a good conductor of electric current. Hence we should never touch electrical appliances with wet hands as the tap water will conduct electricity and we will get an electric shock.

29. Since earthquakes are caused by the movements of plates, the boundaries of the plates are the weak zones where earthquakes are most likely to occur. Such areas are called seismic or fault zones.

30. Differences between stars and planets:

1. A star has its own light but a planet has no light of its own. It shines by reflecting the light of the sun.
2. Stars twinkle at night, while planets do not twinkle.

SECTION C

31.

(a)

Oviparous animals	Viviparous animals
The animals which lay eggs are called oviparous animals.	The animals which give birth to young ones are called viviparous animals.
Example - Hen, frog, fish	Example - Humans, dog, cow

(b) Egg → Larva/Caterpillar → Pupa → Adult

32. The main secondary sexual characteristics in females are:

- i. Development of breasts.
- ii. Hips broaden and become more curved and prominent.
- iii. Development of a shrill voice.

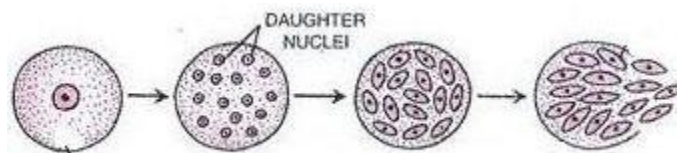
The secondary sexual characteristics in females are produced by the female sex hormone called estrogen.

33. The nucleus consists of the following four parts:

- i. Nuclear membrane: It surrounds the nucleus. It controls and allows the passage of certain materials in and out of the nucleus.
- ii. Nucleoplasm: A dense fluid in the nucleus is called nucleoplasm.
- iii. Nucleolus: It is a spherical body present inside the nucleus. It contains ribonucleic acid (RNA).
- iv. Chromosomes: Chromosomes are thread-like structures composed of deoxyribonucleic acid (DNA). These contain basic hereditary units called genes.

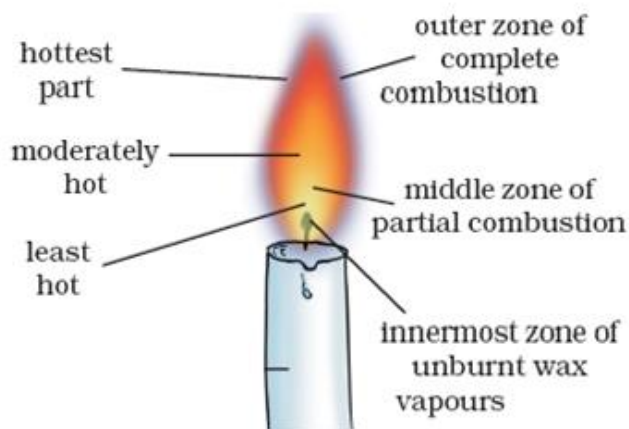
34.

- (a) When a cell splits into many daughter cells, the fission is called multiple fission.
 (b) Multiple fission takes place in the malarial parasite.
 (c)



35.

- (a) A flame is a region where combustion of gaseous substances takes place. Kerosene oil is a liquid fuel which burns by producing flames.
 (b) The different zones of a candle flame can be described as follows:



Different Zones of a Candle Flame

Zone of non-combustion or the inner zone

- This is the dark zone which lies around the wick of the candle.
- It is the innermost zone of the flame.
- This zone contains unburnt vapours of wax.
- As there is no air available in this zone, no combustion takes place. Therefore, it is the least hot part of the flame.

Zone of incomplete combustion or the luminous middle zone

- The middle zone is the brightest zone of the flame.
- In this zone, there is an inadequate supply of air.
- Therefore, there is an incomplete combustion of wax vapours, resulting in the formation of carbon monoxide and unburnt carbon particles.
- These unburnt carbon particles glow and produce a yellow flame. This zone is moderately hot.

Zone of complete combustion or the non-luminous zone

- The outermost zone of the flame is called as the zone of complete combustion.
- In this zone, complete combustion of wax vapours takes place, forming carbon dioxide and water vapour.
- This is the hottest zone of the flame.
- It is also referred to as the non-luminous zone.

Blue zone

- At the bottom of the flame lies a blue zone.
- The blue colour is due to the burning of carbon monoxide produced in the zone of the incomplete combustion of carbon.

36.

(a) There are three types of fuels:

1. Solid fuels: Wood and Coal
2. Liquid fuels: Kerosene and Diesel
3. Gaseous fuels: Natural gas and Biogas

(b) The efficiency of a fuel is expressed in terms of its calorific value. The amount of heat produced by the complete burning of 1 kilogram of a fuel is called its calorific value.

37.

(a) Water which is suitable for drinking by human beings is called potable water.

(b) Water can be made safe for drinking at home by using the following methods:

- i. By Filtration: This is a physical method of removing impurities. A popular household filter is a candle type filter.
- ii. By boiling: Many households use boiling as a method for obtaining safe drinking water. Boiling kills the germs present in the water.
- iii. By using chlorine: Chlorination is a commonly used chemical method for purifying water. It is done by adding chlorine tablets or bleaching powder to the water.

38.

(a) Possible conclusions are:

1. The tester is not working. It can be tested by touching the two leads of the tester together.
2. The current is not sufficient to light the bulb. This can be tested by using a magnetic tester.

(b) Most substances classified as insulators can actually conduct electricity under special circumstances. Thus the term 'insulator' is misleading. A better term is 'poor conductor'.

39.

(a) Copper rod

Except the copper rod, the other three objects are made of substances which are insulators, whereas copper is a good conductor. As soon as it gets charged on rubbing it with another material, the electric charge produced on its surface flows through our hand via our body into the Earth and it remains uncharged.

(b) The power of an earthquake is expressed in terms of magnitude on the Richter scale.

40.

(a) The constellation shown is Orion. It is visible in the sky during winter late in the evening.

(b) Venus appears in the eastern sky before sunrise and sometimes it appears in the western sky just after sunset, so it is called the morning or evening star.

SECTION D

41. In some women, the oviducts are blocked due to which the sperms cannot reach the egg for fertilisation. Hence, these women are unable to bear babies. In such cases IVF is carried out.

In this procedure, the doctors collect freshly released egg and sperms and keep them together for a few hours so that in vitro fertilisation or fertilisation outside the body occurs. In case fertilisation occurs, the zygote is allowed to develop for about a week and is then placed in the mother's uterus. Complete development takes place in the uterus and the baby is born like any other baby. Babies born through this technique are also called test-tube babies as fertilisation occurs in test tubes.

42. At puberty, the following changes take place in boys and girls:

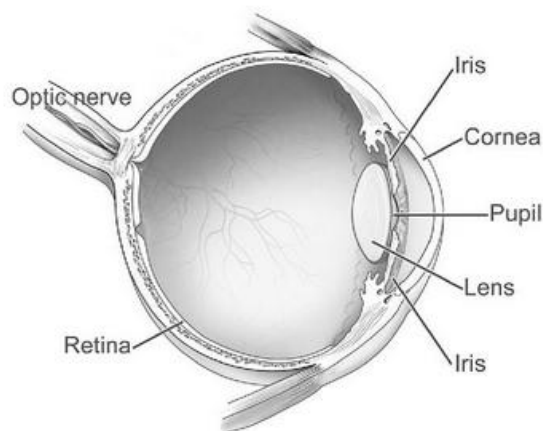
- i. Increase in height - During puberty, there is a sudden increase in the height of both boys and girls.
- ii. Change in body shape - In girls, pelvic bones grow, the hips become broader and breasts start getting enlarged. In boys, the shoulders broaden and the body muscles grow more prominently.
- iii. Change in voice - In boys, the voice box begins to grow larger and the voice becomes deep and harsh whereas in girls, the voice box is hardly visible and the voice becomes shrill.
- iv. Increase in the activity of sweat and sebaceous glands - During puberty, the secretion of sweat glands and sebaceous glands increases.
- v. Development of sex organs - At puberty, the reproductive organs in boys and girls become functional.

43.

- (a) To boil some water, one should prefer to use LPG as a fuel rather than coal or cow-dung cakes because the calorific value of LPG is much higher than the calorific value of cow-dung cakes and coal i.e. LPG produces more heat on burning than an equal amount of coal or cow-dung cakes.
- (b) Characteristics of an ideal fuel are:
- i. It has a high calorific value.
 - ii. It has a moderate ignition temperature.
 - iii. It burns easily in air at a moderate rate.
 - iv. It does not produce any harmful gases or leave any residue after burning.
 - v. It is cheap, readily available and easy to transport

44.

- (a) When light from an object enters our eyes we see objects. The light may have been emitted by an object, or may have been reflected by it.
- (b)



(Label any three parts)