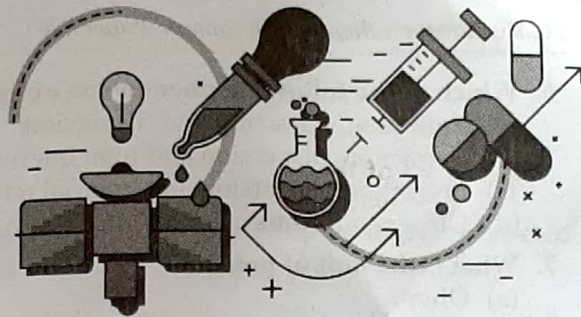


Sample Paper - 10



CLASS X
SCIENCE

Moderate Level

Maximum Marks: 80

SECTION - A

1. Which of the following are exothermic processes?

- (i) Reaction of water with quick lime
 - (ii) Dilution of an acid
 - (iii) Evaporation of water
 - (iv) Sublimation of camphor (crystals)
- (a) (ii) and (iii)
(b) (i) and (ii)
(c) (i) and (iv)
(d) (iii) and (iv)

2. Which one of the following is acidic in nature?

- (a) Gastric juice
- (b) Sodium hydroxide solution
- (c) Lime water
- (d) Blood plasma

OR

The pH of the gastric juices released during digestion is _____.

- (a) Less than 7
- (b) More than 7
- (c) Equal to 7
- (d) Equal to 0

3. The most appropriate definition of a natural resource is that it is a substance/commodity that is

- (a) Present only on land.
- (b) A man made substance placed in nature.
- (c) A gift of nature which is very useful to mankind.
- (d) Available only in the forest.

4. What is the radius of curvature of a mirror whose focal length is 20 cm?

- (a) 20 cm
- (b) 10 cm
- (c) 0.2 m
- (d) 40 cm

5. At noon the sun appears white as _____.

- (a) Blue colour is scattered the most.
- (b) Light is least scattered.
- (c) Red colour is scattered the most.
- (d) All the colours of the white light are scattered away.

OR

Twinkling of stars is due to atmospheric _____.

- (a) Dispersion of light
- (b) Refraction of light
- (c) Scattering of light
- (d) Internal reflection of light by the clouds

6. Which of the following phenomena of light are involved in the formation of a rainbow?
- Reflection, refraction and dispersion
 - Refraction, dispersion and total internal reflection
 - Refraction, dispersion and internal reflection
 - Dispersion, scattering and total internal reflection
7. What is the unit of power?
- Ohm
 - Volt
 - Watt
 - Kilowatt hour

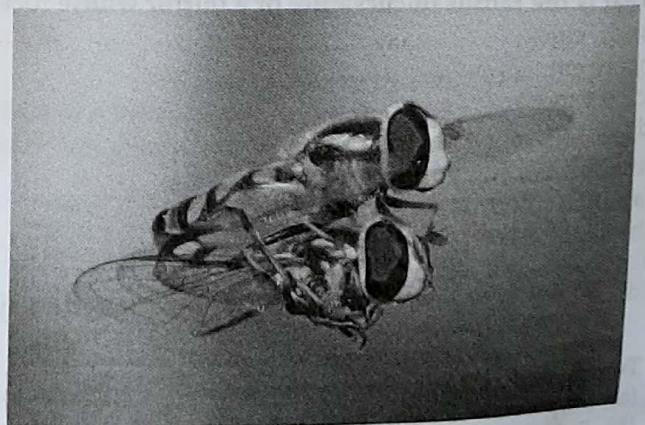
OR

What is the unit of energy?

- Ampere
 - Kilowatt hour
 - Volt
 - Ohm
8. Ocean thermal energy is due to _____.
- Energy stored by waves in the ocean.
 - Temperature difference at different levels in the ocean.
 - Pressure difference at different levels in the ocean.
 - Tides arising out in the ocean.
9. Why do producers always occupy the first trophic level on every food chain?
10. Give an example for the reuse of resources.

Answer question numbers 11(a) – 11(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Reproduction (or procreation or breeding) is the biological process by which new individual organisms – “offspring” are produced from their “parents”. Reproduction is a fundamental feature of all known life; each individual organism exists as the result of reproduction. There are two forms of reproduction: asexual and sexual. In asexual reproduction, an organism can reproduce without the involvement of another organism. Asexual reproduction is not limited to single-celled organisms. The cloning of an organism is a form of asexual reproduction. By asexual reproduction, an organism creates a genetically similar or identical copy of itself. The evolution of sexual reproduction is a major puzzle for biologists. Sexual reproduction typically requires the sexual interaction of two specialized organisms, called gametes, which contain half the number of chromosomes of normal cells and are created by meiosis, with a male typically fertilizing a female of the same species to create a fertilized zygote. This produces offspring organisms whose genetic characteristics are derived from those of the two parental organisms. Asexual reproduction is a process by which organisms create genetically similar or identical copies of themselves without the contribution of genetic material from another organism. Bacteria divide asexually via binary fission. Sexual reproduction is a biological process that creates a new organism by combining the genetic material of two organisms in a process that starts with meiosis, a specialized type of cell division.



11. (a) What do you mean by reproduction?
- (b) How many forms of reproduction are there? What are they?
- (c) What do you mean by asexual reproduction?
- (d) What do you mean by sexual reproduction?

For question numbers 12 and 13, two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes as given below

- (a) A is true but R is false.
 - (b) A is false but R is true.
 - (c) Both A and R is true and R is correct explanation of the assertion.
 - (d) Both A and R is true but R is not the correct explanation of the assertion.
12. **Assertion:** Convex mirrors are used as rear view mirrors.
Reason: Convex mirror provides for a larger field of view than plane mirrors.
 13. **Assertion:** In Fleming's Left-Hand Rule, the direction of magnetic field, force and current are mutually perpendicular.
Reason: Fleming's Left Hand Rule is applied to measure the induced current.

For question numbers 14, a table is shown. Study the table and answer the four questions that follow (each question carries 1 mark).

The position of ten elements is shown in the periodic table.

1 Lithium	2 Beryllium	13 Boron	14 Carbon	15
A	E	I		D
B	J	F		G
C		H		

14. (a) Identify the elements which have similar physical and chemical properties as the element F.
- (b) Identify the element I.
- (c) Among the elements B, J, F and G which one has the smaller size?
- (d) What is the family of elements of group 2 called?

SECTION - B

15. How do you distinguish between a plane, concave and convex mirrors without touching them?

OR

- (i) What is meant by 'least distance of distinct vision'?
 - (ii) How does iris controls the size of the pupil in bright light and dim light?
16. **Give reason for the following:**
 - (i) Why are copper and aluminium wires used as connecting wires?
 - (ii) Why is tungsten used as filament of electric lamps?
 - (iii) Why is lead-tin alloy used for fuse wires?
 17. What is an electromagnet? How can we determine North and South Pole of an electromagnet with the help of magnetised iron bar?
 18. How can we conserve forests?
 19. What are esters? List two uses of esters.
 20. Write one example of each of the following:
 - (i) Most malleable metal and most ductile metal.
 - (ii) The best conductor of heat and the poorest conductor of heat.
 - (iii) A metal with highest melting point and a metal with lowest melting point.
 21. A few crystals of copper sulphate are heated in a dry boiling tube:
 - (i) What is the colour before and after heating?
 - (ii) What is the reason for the colour change?
 - (iii) Can its original colour be restored? How?

OR

Name two metals which do not corrode easily. Give an example in each of the following case to support that:

- (i) Corrosion of some metals is an advantage.
- (ii) Corrosion of a metal is a serious problem.

22. Draw a neat labelled diagram showing binary fission in amoeba.

OR

Draw an analogous organ.

23. State the necessary conditions for autotrophic nutrition and name the by-product. Mention the source of this by-product.

24. Name the plant hormone that promotes growth. How do these hormones bring about phototropism in the shoots of a plant?

SECTION - C

25. Explain the following terms related to spherical lenses:

- (i) Optical centre
- (ii) Centres of curvature
- (iii) Aperture
- (iv) Principal focus
- (v) Focal Length

26. Write the working principle of electric generator with a neat diagram.

OR

Explain the following:

- (i) Why is the tungsten used almost exclusively for filament of electric lamps?
- (ii) Why are the conductors of electric heating devices, such as bread toasters and electric irons, made of an alloy rather than a pure metal?
- (iii) Why is the series arrangement not used for domestic circuits?
- (iv) How does the resistance of wire vary with its area of cross-section?
- (v) Why copper and aluminium wires are usually employed for electric transmission?

27. What is balanced chemical equation? Why should chemical equation be balanced?

Explain the following terms with one example each.

- (i) Corrosion
- (ii) Rancidity

28. A road tanker carrying an acid was involved in an accident and its contents spilled on the road, iron drain covers began melting and fizzing as the acid ran over them. A specialist was called to see if the acid actually leaked into the nearby river.

- (i) Explain how the specialist could carry out a simple test to see if the river water contains some acid or not.
- (ii) The word melting is incorrectly used in the report. Suggest a better name that should have been used.
- (iii) Explain why drain covers began frizzling as the acid rain over them.

OR

(a) What is meant by denatured alcohol? What is the need to denature alcohol?

(b) What is a homologous series. State any two characteristics of homologous series.

29. Only variations that confer an advantage to an individual organism will survive in a population. Do you agree with this statement? Why or why not? How is the equal genetic contribution of male and female parents ensured in the progeny?

30. (a) Write the reaction that occurs when glucose breaks down anaerobically in yeast.

(b) Write the mechanism by which fishes breathe in water.

(c) Name the balloon like structures present in lungs. List its two functions.

(d) Name the respiratory pigment and write its role in human beings.

OR

(i) Define reflex action. State its significance.

(ii) How do plants respond to external stimuli?

(iii) Name the plant hormone which promotes growth. Where is it synthesized?