

BHARATH COACHING CENTRE

10th CBSE

Science

Total: 90

Full Test

Time: 3.00hrs

General Instructions:

- i. The question paper comprises two Sections, A and B. You are to attempt both the Sections.
- ii. All questions are compulsory
- iii. There is no choice in any of the questions.
- iv. All questions of Section A and all questions of Section B are to be attempted separately.
- v. Question numbers 1 to 3 in Section A are one-mark questions. These are to be answered in one word or in one sentence.
- vi. Question numbers 4 to 6 in Section A are two-mark questions. These are to be answered in about 30 words each.
- vii. Question numbers 7 to 18 Section A are three-mark questions. These are to be answered in about 50 words each
- viii. Question numbers 19 to 24 in Section A are five-mark questions. These are to be answered in about 70 words each.
- ix. Question numbers 25 to 33 in Section B are multiple choice questions based on practical skills. Each question is a one-mark question. You are to select one most appropriate response out of the four provided to you.
- x. Question numbers 34 to 36 in Section B are two-marks questions based on practical skills. These are to be answered in brief.

Section A

1. Modern periodic table is the modified version of Mendeleev's Periodic table. What is the basis of modern periodic table on which periodic properties of elements are described?
2. Why is it, that asexual reproduction produces exact copies, but sometimes minor variations are also seen in next progeny?
3. Name two chemicals which are responsible for thinning of ozone layer.
4. A person is able to see objects clearly only when these are lying at distances between 50cm and 300cm from his eye. Identify the kind of defect of vision he is suffering from. Give reason for your answer.
5. Burning of fossil fuel is causing great environmental concern. Mention the consequences of combustion of fossil fuels.
6. Draw a sequence of suitable methods of disposal of waste produced at your home to minimize environmental pollution.
7. Ethyl ethanoate smells like pears and is used for flavouring sweets.
 - a) Write the chemical formula of ethyl ethanoate.
 - b) Write the chemical reaction between ethanoic acid and ethanol in presence of concentrated sulphuric acid.
 - c) Suggest the function of concentrated sulphuric acid in the reaction.
8.
 - a) State the modern periodic law.
 - b) How many periods and groups are present in the Modern Periodic Table?
 - c) Which period in the Modern Periodic Table has minimum number of elements?
9. Draw the electron dot structure of O₂, NH₃ and CCl₄.
10.
 - a) Name the element with atomic number 13.
 - b) To which group does it belong?

c) To which period does it belong?

d) Write its electronic configuration.

11. Charles Darwin came up with the idea of evolution of species by natural selection. How George Mendel's experiments support Darwin's view.

12. The female reproductive system has many important parts and each part has a vital role to play. Justify the above statement by mentioning one important function of each of the following parts.

a) Uterus

b) Cervix

c) Fallopian tube

13. How do Mendel's experiment show that traits are inherited independently?

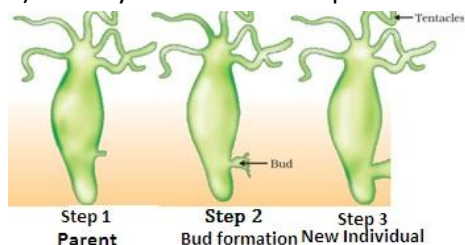
14. What happens when the following situations are initiated:

a) A planaria is cut into three different pieces.

b) Leaf of the Bryophyllum with notches falls on the soil.

c) Testosterone is released in the male reproductive system.

15. a) Identify the incorrect step in the following and correct it.



b) Which process is depicted in the above diagram? Name the organism.

16. a) Name the part of eye that:

i) Controls the amount of light entering into eye

ii) Regulates the size of the passage through which light enters

b) Why are we not able to see immediately after we enter a dark hall from a lightened place?

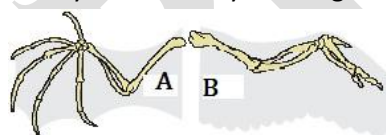
17. Design an activity using concave mirror to prove that it is converging in nature. Also state a method to find its rough focal length.

18. A forest that was rich in biodiversity sees a decline in its animal population. The government declared it as biodiversity hotspot and it regained its species richness in a few years.

A) State two values that are being promoted by the Government in the above case.

B) Mention any two ill effects that would have occurred if the forest was not declared a biodiversity hotspot.

19. Define structural isomer and draw the isomeric structures of butane. Compare the structure of benzene and cyclohexane by drawing them.



a) Identify A and B

b) What type of organs are these?

c) Define these organs.

20. Seeds are the source of producing new plants. But there are some seedless plants also. They use a different method of reproduction and propagate themselves by use of stem, leaves etc.

a) Name the method used by such plants.

b) Give two examples of the plants using this method.

c) State the three advantages of such a method.

21. i) Give one word for the following:

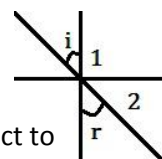
a) Opaque membrane over lens.

b) Eye defect which is corrected by bifocal lens

- c) Eye defect in which far point comes closer to the eye
 - d) Eye defect which is corrected by convex lens
 - e) Cells in this part generate electrical signal when light falls on it.
 - f) The capability of human eye by virtue of which it is able to see distant as well as nearby object clearly.
- ii) A person is suffering from myopia as well as hypermetropia. He needs lenses of power $-5.5D$ and $+1.5D$ for correcting myopia and hypermetropic respectively. Find the focal length of the lenses used by him in spectacles to correct myopia and hypermetropia.
22. a) Define magnification for a lens.
- b) If magnification for a lens is positive what will be the nature of image formed by a lens. Give reason for your answer.
- c) Velocity of light in water is $\frac{3}{4}$ times the velocity of light in vacuum. Find the refractive index of water.
- d) What is meant by optically denser and optically rarer media.
- e) Why is absolute refractive index of a medium always greater than 1.
23. a) Give two causes leading to hypermetropia of the eye. Draw ray diagrams to show the image formation in case of eye with such a defect and for the corrected eye.
- b) A person is not able to read a book until he keeps it at 50cm. Write the nature of the corrective lens.

Section B

24. The process used for alkaline hydrolysis of vegetable oil is called:
- a) Oxidation b) Hydrolysis c) Saponification d) Ozonolysis
25. After completion of saponification reaction a student dipped red litmus strip in resulting solution which turned blue. The correct observation could be:
- a) Resulting solution is basic. b) Resulting solution is acidic.
- c) Resulting solution is neutral. d) Resulting solution is neither acidic nor basic.
26. Soap does not form lather in:
- a) homogeneous solution of calcium chloride in water b) Tap water
- c) rain water d) River water
27. While performing an experiment in the laboratory to determine the focal length of a given convex lens, a student obtained a sharp inverted image of a distant tree on the screen behind the lens. He then removed the screen and looked through the lens in the direction of the tree. He will now observe:
- a) a blurred image on the wall of the laboratory
- b) an inverted image of the tree at the focus of the lens
- c) no image as the screen has been removed
- d) an erect image of the tree on the lens
28. If the image formed by a concave mirror is real, the probable position of the screen should be:
- a) On the same side of the object between focus and infinity.
- b) Behind the mirror.
- c) On the same side of the object between pole and focus.
- d) Any of the above three positions.
29. Refracted ray of an incident ray of light is shown in the given figure. The medium 2 with respect to medium 1 is:



- a) Denser
c) May be denser or rarer
- b) Rarer
d) Identical

30. While doing the experiment of tracing the path of ray of light through a triangular glass prism a student takes precautions:

- a) Position of prism should be fixed while doing experiment.
b) Angle of incidence should not be less than 30° .
c) Two pins taken as object should be placed on incident ray at proper distance from each other.
d) Locate the position of image keeping both eyes open.

One of the precautions is not appropriate. It is:

- i) (A) ii) (B) iii) (C) iv) (D)

31. From a basket of vegetables, Shaurya was trying to sort out two vegetables which showed analogy. These can be:

- a) potato, onion b) ginger, turmeric
c) onion, ginger d) radish, ginger

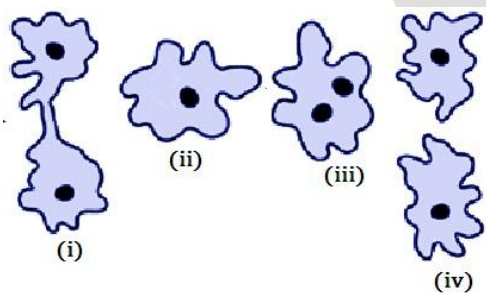
32. Shivani wanted to distinguish between the seeds of Maize and Bean. The identifying feature which she should look for is:

- a) number of cotyledon b) size of cotyledon
c) presence of embryonic axis d) presence of Plumule

33. Two of the following properties of acetic acid are not true. Identify them and make necessary correction;

- a) it is colourless b) it is odourless.
c) it is immiscible in water. d) it turns blue litmus to red.

34. The diagram of four stages of binary fission in an Amoeba given below, aim to show the sequence of events for its fission, but the sequence of events is not shown correctly. You have to redraw the correct sequence of the event.



35. A student performed an experiment for the image formation by a convex lens at different positions of an object. If focal length of lens is 15cm.

Match the following:

Positions of object	Position of the image
a) At 15cm from convex lens	a) At 30cm from convex lens
b) At 30cm from lens	b) On the same side of an object
c) Beyond 30cm of lens	c) At infinity
d) At 10cm from lens	d) Between 15cm and 30 cm of lens