

**Mizoram Board  
Class X Science  
Sample Paper 1**

**Time allowed: 3 hours**

**Maximum Marks: 70**

**General Instructions:**

1. The question paper consists of 26 questions.
2. All questions are compulsory.
3. Internal choices have been provided in some questions.
4. Marks allocated to every question are indicated against it.

**Choose the correct answer from the given alternatives:**

**1 X 14=14**

1. In animals, carbohydrates which are not used immediately are stored in the body as
  - (i) Glucose
  - (ii) Glycogen
  - (iii) Starch
  - (iv) Sucrose
2. Gustatory receptors detect
  - (i) Touch
  - (ii) Taste
  - (iii) Smell
  - (iv) Temperature
3. Production of new plants from the plant cell or a small piece of plant tissue is known as
  - (i) Spore formation
  - (ii) Tissue culture
  - (iii) Multiple fission
  - (iv) Budding
4. Selecting for arrested flower development in wild cabbage led to the development of which plant?
  - (i) Cauliflower
  - (ii) Kohlrabi
  - (iii) Broccoli
  - (iv) Kale

- 5.** The layer of the atmosphere that contains the ozone blanket is
- (i) Mesosphere
  - (ii) Troposphere
  - (iii) Stratosphere
  - (iv) Thermosphere
- 6.** Most non-metallic among F, Cl, Br, I, and At is
- (i) F
  - (ii) At
  - (iii) Cl
  - (iv) I
- 7.** The oxidising agent used to convert alcohols into carboxylic acids is
- (i) Alkaline Potassium permanganate
  - (ii) Phosphorous trichloride
  - (iii) Conc. sulphuric acid
  - (iv) Sodium
- 8.** The method used for refining impure metals is called
- (i) Corrosion
  - (ii) Electrolytic reduction
  - (iii) Electrolytic refining
  - (iv) Calcination
- 9.** Which of the following do not contain acids?
- (i) Tomato juice
  - (ii) Lemon juice
  - (iii) Antacid
  - (iv) Colourless aerated drink
- 10.** Which metallic spoon can be used to stir lead nitrate solution?
- (i) Sodium
  - (ii) Iron
  - (iii) Silver
  - (iv) Aluminium
- 11.** A ray of light, which is parallel to the principal axis of the concave mirror, after reflection passes through the
- (i) Centre of curvature
  - (ii) Principal focus of the mirror
  - (iii) Pole of the mirror
  - (iv) Focal length

**12.** Which of the following way is used to cure the eye defect- cataract?

- (i) Concave lens
- (ii) Surgery
- (iii) Convex lens
- (iv) Bi-focal lens

**13.** Which of the physical quantity has been attributed with the unit of kWh?

- (i) Electric power
- (ii) Work
- (iii) Electric potential
- (iv) Electric current

**14.** A vertical wire carries a current straight down. To the east of this wire, the magnetic field points

- (i) southwards
- (ii) downwards
- (iii) eastwards
- (iv) northwards

**Answer the following questions in one word or one sentence:**

**1 X 7=7**

**15)** Thermal power plants are setup near coal or oil fields. Give reason.

**16)** What is the function of commutator ring in a motor?

**17)** What is the name given to the aqueous sodium chloride?

**18)** Why do calcium floats on water?

**19)** How is plastic recycled?

**20)** What do you mean by the term variation?

**21)** Why in some cases vas deferens in male is blocked?

**Answer the following questions in about 20-30 words:**

**2 X 8=16**

**22)** How can you differentiate saturated and unsaturated hydrocarbons on the basis of burning behaviour?

**23)** An element Z is of second group of the periodic table. Write the formula of its oxide.

**Or**

Give reasons for the need of classification of elements.

**24)** Why fuels such as coal and petroleum are major pollutants in air?

**25)** Why is it said that we have to avoid our personal goals for conservation of natural resources? Explain with the help of an example.

- 26)** What is the main difference between fission and fragmentation?
- 27)** Birds are very closely related to reptiles. Justify your answer with a suitable example.
- 28)** Explain electrical energy and derive its formula.
- 29)** Define the term refractive index of a medium. Can it be less than 1?

**Answer the following questions in about 40-60 words:**

**3 X 7=21**

**30)**

- (a) Draw a schematic labelled diagram of a domestic wiring circuit which includes
- (i) A main fuse
  - (ii) A power meter
  - (iii) One light point
  - (iv) A power output socket
- (b) On which wire in the circuit is the mains on/off switch connected?

- 31)** You are provided with three test tubes A, B and C which contain distilled water, acidic and basic solutions. If you are given blue litmus paper only, how will you identify the nature of the solutions in the three test tubes?

**Or**

An element reacts with oxygen to form an oxide which dissolves in dilute hydrochloric acid. The oxide formed also turns a solution of red litmus blue. Is the element a metal or non-metal? Explain with a proper example.

- 32)** What is meant by biological magnification? With the help of a food chain, explain how biological magnification of harmful chemicals can occur.

**33)**

- (a) What are magnetic field lines? How is the direction of the magnetic field at a point determined?
- (b) Draw two field lines around a bar magnet along its length on its two sides and mark the field directions on them by showing arrows.
- (c) List any three properties of magnetic field lines.

**34)** Answer the following:

- (a) What according to you happens to the eyes when you enter a darkened room from bright sunlight?
- (b) Suggest how the iris helps protect the retina from damage by bright light.
- (c) How do you compare the defect of a person wearing spectacles of +1.5 D to the one wearing spectacles of -1.5 D?

**35)** What happens when

- (a) Zinc reacts with copper sulphate?
- (b) Magnesium reacts with HCl?
- (c) Sodium reacts with water?

**36)** Explain Mendel's experiment on inheritance of characters considering only one visible contrasting character in pea plant.

**Answer the following questions in about 70-100 words: 4 X 3=12**

**37)** Name the type of mirrors used in (a) solar furnace and (b) rear-view mirror. Draw labelled diagrams to show the formation of image in each of the above two cases. Which of these mirrors could also form a magnified and virtual image of an object? Illustrate with the help of a ray diagram.

**38)** An organic compound A is widely used as a preservative in pickles and has molecular formula  $C_2H_4O_2$ . This compound reacts with ethanol to form a sweet smelling compound B.

- (a) Identify compound A.
- (b) Write the chemical equation for its reaction with ethanol to form compound B.
- (c) How can we get compound A back from B?
- (d) Name the process.
- (e) Which gas is produced when compound A reacts with washing soda?

**39)**

- (a) Why is it necessary to separate oxygenated and deoxygenated blood in mammals and birds?
- (b) Explain how lungs are designed in human beings to maximise the area for exchange of gases. Why does the air passage not collapse when there is no air in it?