

Meghalaya Board
Class IX
Science and Technology
Sample Paper 2

Time allowed: 3 hours

Maximum Marks: 80

General Instructions:

1. Write all the answers in the Answer Script.
2. Attempt all parts of a Group serially in one place.
3. The figures in the margin indicate full marks for the questions.
4. This question paper comprises of three sections A, B and C.
5. The candidates are advised to attempt all the questions of sections A, B and C separately.
6. Marks allocated to every question are indicated against it.

SECTION- A

(PHYSICS)

(Marks- 26)

Answer the following very short answer type questions in one sentence each:

1 X 4=4

- 1) What is the acceleration in the case of uniform velocity? **1**
- 2) Why a fan continues to move for sometime even after it has been switched off? **1**
- 3) What is the force between the Earth and a body called? **1**
- 4) Identify the energy possessed by a rolling stone. **1**

Answer the following very short answer type questions in 20-30 words each:

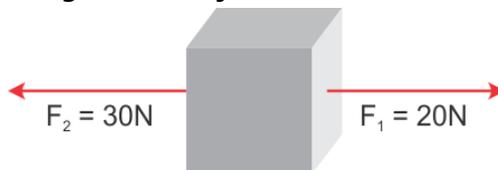
2 X 4=8

- 5) Explain any two factors affecting the value of g . **2**
- 6) The speed of sound is 340 m/s. A person fires a gun and its echo is heard after 1.5 s. Find the distance of the gunman from a cliff from which the echo takes place. **2**
- 7) What kind of energy does a flying bird or a flying airplane has during their course of action? **2**
- 8) A string to which an object is suspended extends. When the object is completely immersed in water the extension of thread decreases. Justify. **2**

Answer the following short answer type questions in 30-40 words each:

3 X 3=9

9) Two forces F_1 and F_2 are acting on an object as shown. 3



- (i) What is the net force acting on the object?
- (ii) What is the direction of the net force acting on the object?
- (iii) If the mass of the object is 10 kg, then what will be the acceleration produced in it?

10) A man gets into a boat floating in water. 3

- (i) What happens to the boat?
- (ii) What happens to the weight of the water displaced by the submerged part of the boat?
- (iii) Does the buoyant force acting on the boat increase or decrease? Justify your answer

11) A stone is dropped into a well 44.1 m deep and the sound of splash is heard after 3.13 s. Find the speed of sound in air. (2+1)=3

Or

Explain that propagation of sound can be visualised as propagation of density variations in the medium.

Answer the following long answer type question in 50-60 words each: 5

12)

- (i) A box is pulled across a floor by applying a force of 50 N at an angle of 60° above the horizontal. How much work is done by the applying force in pulling the box to a distance of 6 m?
- (ii) Two spheres of the same size but of different materials, rubber and iron are kept on the smooth floor of a moving train. The driver suddenly applies brakes and the train stops. Will the spheres start rolling? If so, in which direction? Will they move with the same speed? Give reasons for your answer. (3+2)=5

Or

A train travels the first 10 km at a uniform speed of 25 km/h; the next 70 km at a uniform speed of 35 km/h and the final 20 km at a uniform speed of 20 km/h. What is the average speed attained by the train over the entire journey?

**SECTION -B
(CHEMISTRY)
(Marks-26)**

Answer the following very short answer type questions in one sentence each: **1 X 3=3**

- 13)** Why do different gases give different types of anode rays in the discharge tube experiment? **1**
- 14)** What do we call the molecule consisting of eight atoms? Give one example of such a molecule. **1**
- 15)** Describe what happens when we burn a piece of paper? What type of a change is this? **1**

Answer the following very short answer type questions in 20-30 words each:

2 X 3=6

- 16)** Why solid carbon dioxide is called dry ice? Give two uses of dry ice. **2**
- 17)** Name any four solid substances which do not undergo sublimation. **2**
- 18)** Explain the law of constant proportion by taking ammonia as an example. **2**

Answer the following short answer type questions in 30-40 words each:

3 X 4=12

- 19)** Explain why the Tyndall effect can be observed when light passes through a canopy of a dense forest. **3**
- 20)** **3**
- (a) How many grams of chlorine are contained in 1 mole of chlorine? (Gram atomic mass of Chlorine = 35.5 g)
- (b) How many molecules are there in 1 g of chlorine?
- 21)** Calculate the number of atoms in 125 g of calcium and 130 g of iron. Which one has more number of atoms and how much is the difference?
(Given atomic mass of calcium = 40 μ , iron = 56 μ)

OR

In a reaction, 5.6 g of sodium carbonate reacted with 7 g of ethanoic acid. The products were 2.8 g of carbon dioxide, 0.7 g of water and some sodium ethanoate. What is the expected weight of sodium ethanoate? **3**

- 22)** Explain the drawbacks of the Rutherford's model of an atom **3**

Answer the following long answer type question in 50-60 words each: 5

23)

- (a) Mention the postulates of Bohr's theory.
- (b) What are the failures of Thomson's atomic model?

Or

Explain the formation of protons from gas discharge tube as stated by Goldstein.

**SECTION -C
(BIOLOGY)
(Marks-28)**

Answer the following very short answer type questions in one sentence each: **1 X 4=4**

- 24)** Name the bacterium responsible for denitrification in nature. **1**
- 25)** Which method is the most effective for destroying insects in stored grains- spraying or fumigation? **1**
- 26)** Name a cell organelle which contains its own genetic material. **1**
- 27)** What is the function of large air cavities present in the parenchyma of aquatic plants? **1**

Answer the following very short answer type questions in 20-30 words each:

2 X 5=10

- 28)** Why do we get a crunchy and granular feeling when we chew pears? **2**
- 29)** What makes the biosphere dynamic but stable system? **2**
- 30)** What is immunization? List two diseases against which vaccines are available. **2**
- 31)** Which plants are considered Thallophytes? **2**
- 32)** What are the two main components of blood? Why blood is considered a type of connective tissue? **2**

Answer the following short answer type questions in 30-40 words each:

3 X 3=9

- 33)** Write the most striking feature of the following phyla: **3**
- (a) Arthropoda
- (b) Annelida
- (c) Porifera

Or

How are amphibians different from reptiles? List any three points of differences.

- 34)** Explain the advantages and disadvantages of mixed cropping. **3**
- 35)** Whales and fish resemble each other and both swim in water. Yet, why are whales not grouped with fish? **3**

Answer the following long answer type question in 50-60 words each: 5

36)

- (a) It was diagnosed that Kiran has hepatitis.
 - (i) Which organ of Kiran's body is affected?
 - (ii) How are antibiotics effective in the treatment of some diseases?
 - (iii) Will they help in curing Kiran's disease? Why?
- (b) 'Prevention of a disease is more desirable than its treatment'. Justify this statement.