

**Tripura Board
Class IX Science
(Physics and Chemistry)
Sample Paper 1**

Time allowed: 2 hours

Maximum Marks: 53

General Instructions:

1. This question paper comprises 2 groups- A (Physics) and B (Chemistry). You are to answer questions from both the groups.
2. All questions are compulsory.
3. Use of calculator or any other electronic device in the examination hall is strictly prohibited.

Group A

PHYSICS

Full Marks- 27

Answer the following questions:

- 1) What is the gravitational force between the Earth and a body called? **1**
- 2) A particle is moving in a circle of diameter 5m. What is its displacement when it completes one and a half rotation? **1**
- 3) Give one example where kinetic energy is transferred from one object to another. **1**
- 4) Flash and thunder are produced simultaneously. Yet, thunder is heard a few seconds after the flash is seen, why? How does the speed of sound in air vary with the rise in the density of the medium? **2**
- 5) Give any two important applications of the Archimedes' principle. **2**
- 6) An engine pumps 40 kg of water per second. If water comes out with a velocity of 3m/s, what is the power of the engine? **2**
- 7) It is difficult to balance our body when we accidentally slip on a peel of banana. Explain why. **2**
- 8) Deduce Newton's first law of motion using Newton's second law of motion. **2**
- 9) At what height above the Earth's surface would the value of acceleration due to gravity be half of what it is on the surface? Calculate. **3**

10) Prove the law of conservation of momentum with a clear explanation, diagram and equation. **3**

11) **(2+1)=3**

- (a) What is reverberation? How can it be reduced?
- (b) What do you understand by the term infrasonic sound?

Or

- (a) List the two conditions necessary for the work to be done.
- (b) Explain with the help of an example, that an object may possess energy even when it is not in motion?

12) **[(2+2+1)]=5**

- (a) Deduce the expression of kinetic energy of a body.
- (b) State the factors on which the kinetic energy of a body depends?
- (c) What happens to the kinetic of a freely falling body which hits the ground?

Or

- (a) Using Newton's law of motion, derive the relation between force and acceleration.
- (b) Define one Newton.
- (c) Which would require a greater force to accelerate—a 0.5 kg mass at 5 m/s² or a 4 kg mass at 2 m/s²? Give reasons. **(1+3+1)=5**

Group-B
CHEMISTRY
Full Marks-26

- 13) Why do clothes dry faster in an open ground than in a closed room? **1**
- 14) Why is dry ice stored under high pressure? **1**
- 15) What are polyatomic ions? **1**
- 16) What is the logical explanation of the laws of chemical combination? **1**
- 17) Explain the term atomicity with the help of examples. **2**
- 18) A 0.24 g sample of a compound of oxygen and boron was found by analysis to contain 0.096 g of boron and 0.144 g of oxygen. Calculate the percentage composition of both the compounds by weight. **2**
- 19) Explain how during the burning of a candle, both physical and chemical changes take place. **2**
- 20) Explain the sedimentation and decantation methods **2**
- 21) What is fractional distillation? List the two conditions essential for using this as a method of separation of components of a mixture. **3**
- 22) Calculate the number of molecules of sulphur present in 16 g of solid sulphur **3**
- 23)
- (a) Draw a sketch of Bohr's model of an atom with three shells.
- (b) If K, L and M shell of an atom are full then what would be the total number of electrons in the atom?
- (c) What is the maximum number of electrons that can be accommodated in a shell?
- 1+2=3**
- 24) Describe Bohr's Model of an atom **5**
- Or
- What is electrovalency? Explain the formation of an electrovalent compound with the help of an example **1+4=5**

Science
Biology**Time allowed: 1 hour****Maximum Marks: 27****General Instructions:**

1. There are a total of 12 questions in four sections in the question paper. All questions are compulsory.
2. Section A contains questions number 1 to 3 of very short answer type questions of 1 mark each.
3. Section B contains questions number 4- 8 of short answer type (SA- I) questions of 2 marks each.
4. Section C contains questions number 9- 11 of short answer type (SA- II) questions of 3 marks each.
5. Section D contains question number 12 of long answer type question of 5 marks

SECTION-A**Answer the following questions in a word or in a sentence:****1x3=3**

1. Name two processes which play an important role in the oxygen cycle. **1**
2. Name the bacteria responsible for peptic ulcers. **1**
3. Lysosomes are known as the suicide bags of the cell. Give reason. **1**

SECTION-B**Answer the following questions in 20 words each:****2x5=10**

4. Farmers use bee-keeping as an additional income generator. Give two reasons. **2**
5. Briefly describe the river lift system. **2**
6. Write two points of differences between gymnosperms and angiosperms. **2**
7. Why cotyledons are called seed leaves? **2**
8. What is binomial system of nomenclature? **2**

Or

Name the two species of cattle reared in India

Answer the following questions in 50 words each:**3X3=9**

9. State the differences between manures and fertilisers **1+2=3**

10.

(a) Draw a neat diagram of a plant cell and label the following parts: **1+2=3**

Cell wall, Nucleus, Vacuole, Golgi apparatus

(b) Name the energy currency of the cell. Which cell organelle releases this currency?

11. What precautions can you take in your school to reduce the incidence of infectious diseases? Mention any three points. **1+2=3**

Or

Draw a well labelled diagram of paramecium. Name the kingdom to which it belongs

SECTION-D

Answer the following question in 100 words.

5X1=5

12.

[(1+1+1)+1+1=5]

(a) Give reasons for the following:

- i. Bryophytes are called amphibians of plant kingdom.
- ii. From Phylum Platyhelminthes onwards, animals are categorised as 'triploblastic'.
- iii. The presence of 'coelom' in an animal's body is considered as advantageous.

(b) What are oviparous animals?

(c) Name the phylum in which pharyngeal gill slits are present.

Or

(a) A poultry farmer wants to increase his broiler production. Explain three management practices he must follow to enhance the yield.

(b) In what way is the daily food requirement of broilers different from that of layers?

(c) What is pasturage and how is it related to honey production?

3+1+1=5