

Tripura Board Class 10 Physics and Chemistry 2026 Question Paper

Time Allowed :3 Hours

Maximum Marks :70

Total questions :21

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The paper is divided into Section A and Section B.
2. Section A includes objective-type questions.
3. All questions in Section A are compulsory.
4. Section B includes short answer, and long answer type questions.
5. Answers must be written legibly within the word limit.
6. Use of unfair means or electronic devices is prohibited.
7. Follow the correct format and instructions for each section.

1. To get a real image of the same size as the object, where should the object be placed in front of a convex lens?

- (A) At the principal focus
- (B) At a distance twice the focal length
- (C) At infinity
- (D) Between the optical centre and the principal focus

2. The action of which of the following changes the focal length of the eye lens?

- (A) Pupil
 - (B) Retina
 - (C) Ciliary muscle
 - (D) Iris
-

3. During a short circuit, the current in the circuit -

- (A) decreases significantly
 - (B) does not change
 - (C) increases heavily
 - (D) changes continuously
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4. What is the S.I. unit of resistance?

5. Which type of mirror is used by dentists to examine teeth?

6. Name a device that helps to maintain a potential difference across a conductor.

7. What is the direction of magnetic field lines inside a current-carrying solenoid?

8. The refractive index of glass is 1.5 and that of water is 1.33. In which medium will light bend more? Explain with reason.

9(a). What is meant by accommodation of the eye?

9(b). A student sitting in the back row has difficulty seeing the blackboard. What kind of defect might the student's eye have? How can it be corrected?

9(a) . A person's near point is 50 cm. His far point is 2 m. What is the name of the defect of vision he is suffering from?

9(b) . Suggest the use of suitable lenses for the correction of each defect mentioned in the previous question.

10(a). State Joule's laws of heating regarding electric current.

10(b). Which metal is generally used to make the filament of an electric bulb?

11(a). What is the difference between overloading and short circuit?

11(b). Write two properties of a fuse wire.

11(c). Which energy is converted into which energy in an electric generator?

11(a) . What is the function of the earth wire?

11(b) . Why is one of the pins of a three-pin plug relatively thicker?

11(c) . State one advantage of using an MCB.

12(a). What types of images are formed by a convex lens?

12(b). What is meant by "refractive index of water is 1.33"?

12(c). An object of size 4.0 cm is placed 25.0 cm in front of a concave mirror of focal length 15.0 cm. At what distance from the mirror should a screen be placed to obtain a sharp image? Determine the nature and size of the image.

12(a) . A doctor prescribed a corrective lens of power +1.5 D. Determine the focal length of the lens. Is the prescribed lens diverging or converging?

12(b) . Which type of mirror is used in the rearview mirror of vehicles and why?

13. Which of the following is not a chemical change?

- (A) Rusting of iron
 - (B) Respiration
 - (C) Melting of wax
 - (D) Burning of wax
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14. Which of the following metals remains in liquid state at room temperature?

- (A) Mercury
 - (B) Sodium
 - (C) Gallium
 - (D) Bromine
-

15. Which of the following does not belong to the same homologous series?

- (A) CH₄
 - (B) C₂H₆
 - (C) C₃H₄
 - (D) C₄H₁₀
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16. Balance the chemical equation: $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$

17. Which metal has the lowest thermal conductivity?

18. Write the name of a carbon-less functional group.

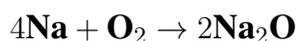
19. Which gas is usually evolved when an acid reacts with a metal? How will you test the presence of this gas?

20(a). Write the IUPAC name of $\text{CH}_3 - \text{C} \equiv \text{CH}$.

20(b). Write the structural formula of ethanoic acid.

21(a). Why are packets of oily or fatty foods flushed with nitrogen gas?

21(b). In the following reaction, which substance is oxidized and which is reduced?



21(a) . What happens when an iron nail is dipped in copper sulfate solution? Write with equation.

21(b) . Which gases are produced at the cathode and anode during the electrolysis of acidulated water?

22(a). Give an example of an antacid.

22(b). What is the common name of the compound CaOCl_2 ?

22(c). Write two important uses each of washing soda and baking soda.

23(a). What type of oxide is formed when a non-metal combines with oxygen?

23(b). Write two differences between metals and non-metals based on chemical properties.

23(c). What is an amalgam?

24(a). What is meant by hydrogenation or addition of hydrogen? What is its application in industry?

24(b). What is the name of the hardest allotrope of carbon?

24(c). What is vinegar?

24(a) . Draw two structural isomers having the formula C_4H_{10} .

24(b) . Which is more useful between soap and detergent, and why?

25(a). The radius of curvature of a spherical mirror is 20 cm. What is its focal length?

25(b). Write the S.I. unit of: (i) Electric potential difference (ii) Resistance

25(c). Why does a clear sky appear blue?

26(a). Why is sodium metal kept immersed in kerosene?

26(b). What is an indicator? Write the names of two indicators.

26(c). Why should curd and sour substances not be kept in brass and bronze vessels?
