

SAMPLE CONTENT



IQB

IMPORTANT QUESTION BANK

Based on Latest Paper Pattern of Maharashtra State Board

Science & Technology Part - 1



Visit Our Website

STD. X
(Eng. Med.)

**“ IQB KE SAATH
SSC EK DUM
TENSION FREE ”**

Target Publications® Pvt. Ltd.

IQB Important Question Bank

STD. X

Science and Technology Part - 1

Salient Features

- A compilation of Most Important Questions
- A great resource for expeditious and exhaustive board exam preparation
- Written as per Latest Board Paper Pattern
- Includes selective questions from 2019 - 2022 Board Papers
- Important inclusion: 'Smart Tip', 'Assignments' and 'Time Management' to solve the Activity Sheet
- Includes Model Activity Sheet for self evaluation
- Inclusion of **QR Code** for students to access 'Solution' for the Model Activity Sheet.

Scan the adjacent QR Code to access Board Activity Sheets and Solutions of March 2020, December 2020 and March 2022.



Printed at: **Print to Print**, Mumbai

© *Target Publications Pvt. Ltd.*

No part of this book may be reproduced or transmitted in any form or by any means, C.D. ROM/Audio Video Cassettes or electronic, mechanical including photocopying; recording or by any information storage and retrieval system without permission in writing from the Publisher.

PREFACE

IQB Science and Technology Part - 1: Std. X is a treasure house of the **Most Important Questions** that would help students face the Board Examination confidently. This book is created in accordance with the Latest Board paper Pattern.

IQB (Important Question Bank) covers various types of questions such as Find the odd one out, Complete the Table/Chart, Questions based on diagrams, etc. along with answers. Moreover, the questions provided are arranged in a chapter-wise format so that students can easily prepare for the examination. The book also includes four **Assignments** for practice to boost students' confidence.

Smart Tip serves several purposes such as giving students an insight into approaching a question, making them aware of commonly made mistakes, cracking a question by efficient lateral thinking and demonstrating easy methods to cross-verify the answer. **Time Management** is provided with Paper Pattern (on the adjacent page) to aid students to solve the activity sheet within the allotted time.

We have provided One Model Activity Sheet at the end of the book that enables students to assess their level of preparation for the Board examination. We have provided **QR Code** for students to access the 'Solution' given for the Model Activity Sheet.

Selected questions from the Board Papers of March 2019, July 2019, March 2020, December 2020 and March 2022 with answers have been included to give the student an idea about the kind of questions asked in the previous examinations.

Armed with an arsenal of carefully crafted questions and relevant answers, we are confident that this book will cater to the needs of students and effectively assist them to achieve their goal.

Publisher

Edition: Third

Disclaimer

This reference book is transformative work based on textbook 'Science and Technology Part - 1; Reprint: 2022' published by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

This work is purely inspired upon the course work as prescribed by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. Every care has been taken in the publication of this reference book by the Authors while creating the contents. The Authors and the Publishers shall not be responsible for any loss or damages caused to any person on account of errors or omissions which might have crept in or disagreement of any third party on the point of view expressed in the reference book.

© reserved with the Publisher for all the contents created by our Authors.

No copyright is claimed in the textual contents which are presented as part of fair dealing with a view to provide best supplementary study material for the benefit of students.

PAPER PATTERN

- There will be separate question papers for Part 1 and Part 2 of 40 marks each.
- Duration of each paper will be 2 hours.

Question No.	Type of Questions	Total Marks	Time Management
Q.1 (A)	5 Questions of 1 mark each (MCQs)	05	10 mins
Q.1 (B)	5 Questions of 1 mark each	05	10 mins
Q.2 (A)	3 Questions of 2 marks each (Scientific Reasoning) (Solve any 2)	04	10 mins
Q.2 (B)	5 Questions of 2 marks each (Solve any 3)	06	15 mins
Q.3	8 Questions of 3 marks each (Solve any 5)	15	45 mins
Q.4	2 Questions of 5 marks each (Solve any 1)	05	20 mins
	To Review and Re-checking	-	10 mins
Total		40 Marks	120 mins

CHAPTER WISE WEIGHTAGE

Sr. No.	Chapter Name	Marks	Marks with option
1.	Gravitation	03	05
2.	Periodic classification of elements	04	06
3.	Chemical reactions and equations	04	06
4.	Effects of electric current	05	07
5.	Heat	03	05
6.	Refraction of light	05	07
7.	Lenses	04	06
8.	Metallurgy	04	06
9.	Carbon compounds	05	07
10.	Space missions	03	05
	Total	40	60

INDEX

No.	Types of Questions	Page No.
1.	Multiple Choice Questions	1
•	Assignment for Q.1 (A)	14
2.	Find the Odd One Out	15
3.	Find Out the Correlation	18
4.	Match Pairs	22
5.	True or False	26
6.	Give Name/Molecular Formula	31
•	Assignment for Q.1 (B)	35
7.	Give Scientific Reasons	37
•	Assignment for Q.2 (A)	50
8.	Solve Numerical Problems	51
9.	Laws/Define/Principles	75
10.	Write a Short Note	81
11.	Chemical Reactions	90
12.	Table/Flowchart	95
13.	Give Difference Between	100
14.	Short Answers	105
15.	Complete the Paragraph	131
16.	Diagram Based Questions	133
17.	Paragraph Based Questions	151
18.	Long Answers	156
•	Assignment for Q.2 (B), Q.3 and Q.4	172
•	Model Activity Sheet	178

*Note: Textual exercise questions are represented by * mark.
Textual solved examples are represented by + mark.*

Detailed Analysis of Question Paper

Science and Technology Part - 1

Time: 2 Hours

Total Marks: 40

Note:

- i. All questions are compulsory.
- ii. Use of a calculator is not allowed.
- iii. The numbers to the right of the questions indicate full marks.
- iv. In case of MCQs (Q. No. 1(A)) only the first attempt will be evaluated and will be given credit.
- v. For each MCQ, the correct alternative (A), (B), (C) or (D) with sub-question number is to be written as an answer.
For Eg: (i) (A), (ii) (B), (iii) (C)
- vi. Scientifically correct, labelled diagrams should be drawn wherever necessary.

Q.1. (A) Choose the correct alternative. [5]

- This question carries 5 marks. It contains 5 multiple choice type questions of 1 mark each. All questions are compulsory.
- In MCQ, students are expected to write the correct option in the answer. Example: i. (A)

Q.1. (B) Solve the following questions. [5]

- This question carries 5 marks. It contains 5 sub-questions of 1 mark each. All sub-questions are compulsory.
- It includes various question types such as 'Find the odd one out', 'Find out the correlation', 'Make pairs', 'True or False?' and 'Give name/molecular formula/ Identify the figure'.
- In 'Find the odd one out', students are expected to identify the odd one out of 4 – 5 components. Students must give an appropriate explanation, only if asked in the question.
- In 'Find the correlation/Complete the analogy', students are expected to identify the correlation between two components and rewrite it. Students must give an appropriate explanation, only if asked in the question.

- In 'Match the column/Make pairs' (2 columns), students are expected to match the contents of Column I, with those in Column II appropriately, and write the answer in a tabular format.
- In 'Match the column' (3 columns), students are expected to match the contents of Column I, with those in Column II and Column III appropriately, and write the answer in a tabular format.
- In 'True or false', students are expected to mention whether the sentence is true or false. Students must write the correct statement, only if asked in the question.

In case the format of the question varies from those given above, students are expected to read the question carefully and attempt it accordingly, in the appropriate format.

Q.2. (A) Give scientific reasons. (Any Two) [4]

- This question carries 4 marks. It contains 3 sub-questions of which any 2 are to be attempted. Each sub-question carries 2 marks.
- It includes scientific reasoning questions.
- Wherever applicable, students are expected to write answers in points for better presentation.

Q.2. (B) Solve the following questions. (Any Three) [6]

- This question carries 6 marks. It contains 5 sub-questions of which any 3 are to be attempted. Each sub-question carries 2 marks.
- It includes various question types like 'Solve numerical problems', 'laws/define/principles' 'Write a note', 'Complete the table/flowchart', 'Give difference between', 'Write properties/characteristics/advantages/effects/uses', 'Chemical reactions with equations' and 'Give examples'.
- In 'Solve numerical problems', students must write answer/s with correct unit/s.
- In 'Complete the table/flowchart', students are expected to add appropriate information in the table/flowchart and redraw it.

- In ‘Give difference between’ students are expected to write required number of independent differences between two components. Students may write the differences in a tabular format for better presentation.
- In ‘Give examples’, students are expected to give minimum 4 examples based on a particular concept or process.
- Wherever applicable, students are expected to write answers in points for better presentation.

In case the format of the question varies from those given above, students are expected to read the question carefully and attempt it accordingly, in the appropriate format.

Q.3. Solve the following questions. (Any Five)

[15]

- This question carries 15 marks. It contains 8 sub-questions of which any 5 are to be attempted. Each sub-question carries 3 marks.
- It includes various question types like ‘Label the diagram and explain’, ‘Complete the table/flowchart’, ‘Solve numerical problems’, ‘Complete the diagram and explain’, ‘Answer questions based on the figure’, ‘Write answers with explanation’, ‘Write laws, theory and explain’, ‘Complete the paragraph’, ‘Explain with the help of examples’ and ‘Suggest remedies/measures’
- In ‘Complete the table/chart’, students are expected to add appropriate information in the table/chart and redraw it.
- In ‘Complete the paragraph’ students are expected to rewrite the completed paragraph and underline the answers.
- Wherever applicable, students are expected to write answers in points for better presentation.

In case the format of the question varies from those given above, students are expected to read the question carefully and attempt it accordingly, in the appropriate format.

Q.4. Solve the following questions. (Any One)

[5]

- This question carries 5 marks. It contains 2 sub-questions of which any 1 is to be attempted. Each sub-question carries 5 marks.
- It includes various question types like ‘Draw a figure and give explanation’, ‘Correct the given diagram and explain’, ‘Classify with detailed explanation’ ‘Read the given paragraph and answer questions based on it’, ‘Complete the table/chart and give explanation’, ‘Answer the questions in detail’, ‘Answer questions based on the figure’, ‘Make a concept diagram and give explanation’.
- In ‘Correct the diagram and explain’ students are expected to draw a new corrected, labelled diagram and write a detailed explanation.
- In ‘Complete the table/chart’, students are expected to add appropriate information in the table/chart and redraw it giving a detailed explanation.
- Wherever applicable, students are expected to write answers in points for better presentation.

In case the format of the question varies from those given above, students are expected to read the question carefully and attempt it accordingly, in the appropriate format.

Choose the correct alternative.

CHAPTER 1: GRAVITATION

- The orbit of a planet is an ellipse with the Sun at one of the _____.
(A) centres (B) vertices
(C) foci (D) tangents
- Value of gravitational constant G on the moon will be _____.
(A) $1/6$ value of G on the earth
(B) 6 times value of G on the earth
(C) same as that of value of G on the earth
(D) twice value of G on the earth
- According to Newton's first law, mass is the measure of _____ of an object.
(A) heaviness (B) inertia
(C) gravity (D) weight
- What will be the weight of a person on earth, who weighs 9 N on the moon?
(A) 3 N (B) 15 N
(C) 45 N (D) 54 N
- True free fall is possible only in _____.
(A) air (B) vacuum
(C) aeroplanes (D) deep ocean

Ans: 1. (C) 2. (C) 3. (B) 4. (D) 5. (B)

CHAPTER 2: PERIODIC CLASSIFICATION OF ELEMENTS

- Lithium (Li), _____ and potassium (K) is Dobereiner's triad. **[Dec 2020]**
(A) magnesium (Mg) (B) aluminium (Al)
(C) sodium (Na) (D) calcium (Ca)
- According to Mendeleev's periodic law, properties of elements are periodic function of their _____. **[Mar 2020]**
(A) Atomic numbers (B) Atomic masses
(C) Densities (D) Boiling points
- *3. The number of electrons in the outermost shell of alkali metals is _____.
(A) 1 (B) 2
(C) 3 (D) 7

- *4. Alkaline earth metals have valency 2. This means that their position in the modern periodic table is in _____.
- (A) group 2 (B) group 16
(C) period 2 (D) d-block
- *5. Molecular formula of the chloride of an element X is XCl . This compound is a solid having high melting point. Which of the following elements will be present in the same group as X?
- (A) Na (B) Mg (C) Al (D) Si
- *6. In which block of the modern periodic table are the nonmetals found?
- (A) s-block (B) p-block
(C) d-block (D) f-block
7. Halogen which is liquid at room temperature is _____.
- (A) fluorine (B) astatine
(C) bromine (D) iodine
8. The correct decreasing order of atomic radius is:
- (A) $F > O > S$ (B) $F > S > O$
(C) $S > F > O$ (D) $S > O > F$
9. When a small piece of beryllium was added to water taken in a beaker, what will you observe?
- (A) Vigorous chemical reaction occurs with evolution of a gas.
(B) Formation of precipitate is seen.
(C) Colour of solution turns black.
(D) No reaction occurs.
10. Which one of the following does not increase while moving down the group of the modern periodic table?
- (A) Atomic radius (B) Metallic character
(C) Valence electrons (D) Number of shells
11. The correct increasing order of reactivity of alkaline earth metals with water is:
- (A) $Be < Mg < Ca < Sr < Ba$ (B) $Be < Mg < Ca < Ba < Sr$
(C) $Ba < Mg < Ca < Sr < Be$ (D) $Be < Ca < Mg < Sr < Ba$
- Ans:** 1. (C) 2. (B) 3. (A) 4. (A) 5. (A) 6. (B)
7. (C) 8. (D) 9. (D) 10. (C) 11. (A)

CHAPTER 3: CHEMICAL REACTIONS AND EQUATIONS

1. What happens when a piece of zinc metal is added to copper sulphate solution?
- (A) Copper sulphide is formed.
(B) Colourless solution of zinc sulphate is formed.
(C) Copper sulphate solution is not affected at all.
(D) Hydrogen sulphide gas is evolved.

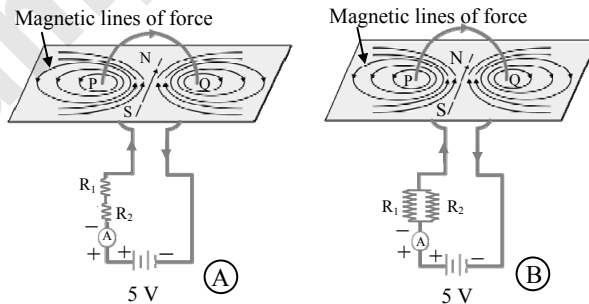
2. Which of the following gases turns lime water milky?
 (A) H_2 (B) CO_2 (C) NO_2 (D) SO_2
3. Which of the following is CORRECT for double displacement reaction?
 (A) Ions are exchanged.
 (B) Ions are not produced.
 (C) One substance is formed from two or more substances.
 (D) Two or more substances are produced from one substance.
4. Which among the following is double displacement reaction?
 (A) $AgNO_3 + NaCl \longrightarrow AgCl + NaNO_3$
 (B) $Pb + CuCl_2 \longrightarrow PbCl_2 + Cu$
 (C) $2Mg + O_2 \longrightarrow 2MgO$
 (D) $CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$
5. A student takes 1 g of sodium hydroxide. He adds it to 50 mL of water taken in a plastic bottle and shakes the content well. Which of the following observation is correct?
 (A) Sodium does not dissolve in water.
 (B) A white precipitate is formed.
 (C) The temperature of the reaction solution increases.
 (D) The resulting solution is acidic.
6. Which gas is liberated when aluminium metal reacts with dilute hydrochloric acid?
 (A) H_2O_2 (B) H_2 (C) Cl_2 (D) O_2
7. The conversion of ferrous sulphate into ferric sulphate is _____ reaction. **[Dec 2020]**
 (A) oxidation (B) displacement
 (C) electrolysis (D) reduction
- Ans:** 1. (B) 2. (B) 3. (A) 4. (A) 5. (C) 6. (B)
 7. (A)

CHAPTER 4: EFFECTS OF ELECTRIC CURRENT

1. Heating effect of electric current is not observed in _____.
 (A) electric oven (B) electric iron
 (C) electric motor (D) fuse
2. The live and neutral wires have potential difference of _____.
 (A) 0 V (B) 100 V (C) 220 V (D) 440 V
3. If 220 V potential difference is applied across an electric bulb, a current of 0.5 A flows in the bulb. What must be the power of the bulb?
 (A) 99 W (B) 110 W (C) 150 W (D) 220 W

4. Two bulbs are connected in series in a circuit. If the filament of a bulb breaks then, _____.
- (A) second bulb will glow brighter
 (B) second bulb will not glow
 (C) there will be overloading in the circuit
 (D) resistance of the circuit will decrease
5. To detect magnetic field produced by current carrying conductor _____ is used.
- (A) voltmeter
 (B) magnetic needle
 (C) electromagnet
 (D) galvanometer
6. If the current through wire is increased,
- (A) resistance of the wire increases.
 (B) resistance of the wire decreases.
 (C) intensity of magnetic field produced around the wire increases.
 (D) intensity of magnetic field produced around the wire decreases.
- *7. Which of the statement given below correctly describes the magnetic field near a long, straight current carrying conductor?
- (A) The magnetic lines of force are in a plane, perpendicular to the conductor in the form of straight lines.
 (B) The magnetic lines of force are parallel to the conductor on all the sides of the conductor.
 (C) The magnetic lines of force are perpendicular to the conductor going radially outward.
 (D) The magnetic lines of force are in concentric circles with the wire as the centre, in a plane perpendicular to the conductor.
8. Observe the following diagram and choose the correct alternative:

[Mar 2019]



- (A) The intensity of magnetic field in A is larger than in B.
 (B) The intensity of magnetic field in B is less than in A.
 (C) The intensity of magnetic field in A and B is same.
 (D) The intensity of magnetic field in A is less than in B.

9. Magnetic field produced by a current carrying circular loop can be doubled by
- doubling the number of turns in the loop.
 - changing shape of the loop to square.
 - halving the number of turns in the loop.
 - using alternating current.
10. When electric current is passed through the solenoid, it shows magnetic lines of force similar to a _____. **[July 2019]**
- bar magnet
 - horse shoe magnet
 - disk magnet
 - spherical magnet.
11. The magnetic lines of force inside the solenoid are parallel to each other. This indicates that _____
- the intensity of the magnetic field inside the solenoid is uniform at every point.
 - the intensity of the magnetic field inside the solenoid is zero.
 - the intensity of the magnetic field inside the solenoid is non-uniform.
 - the intensity of the magnetic field outside the solenoid is non-uniform.
- *12. Electromagnetic induction means _____.
- charging of an electric conductor
 - production of magnetic field due to a current flowing through a coil
 - generation of a current in a coil due to relative motion between the coil and the magnet
 - motion of the coil around the axle in an electric motor
13. In _____ appliance, Fleming's Left Hand rule is not used.
- electric fan
 - mixer
 - computer
 - electric generator

Ans: 1. (C) 2. (C) 3. (B) 4. (B) 5. (B) 6. (C)
 7. (D) 8. (D) 9. (A) 10. (A) 11. (A) 12. (C)
 13. (C)

Hint: 3. Power = $V \times I = 220 \times 0.5 = 110 \text{ W}$

4. When the filament of either of the bulb breaks, circuit will become open circuit and current will not flow through it.
8. Circuit shown in figure A contains resistances in series. Hence, total resistance of circuit is higher as compared to circuit with parallel resistances shown in figure B.
 As a result, larger current flows in circuit shown in figure A generating magnetic field of higher intensity.

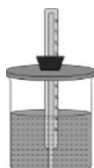
CHAPTER 5: HEAT

1. Choose the proper method to measure the temperature of water.

(A)



(B)



(C)



(D)



2. During transformation of liquid phase to solid phase, the latent heat is _____.
- (A) absorbed
(B) given off
(C) used to increase temperature
(D) used to decrease temperature
3. Latent heat per unit mass of a substance is its _____.
- (A) specific heat
(B) heat capacity
(C) specific latent heat
(D) latent heat capacity
4. When ice of 0°C is heated to convert into steam, for what values of temperature, thermometer dipped into ice shows constant reading for some time?
- (A) 0°C and 4°C
(B) 4°C and 100°C
(C) 0°C and 100°C
(D) 0°C , 4°C and 100°C
5. Heat energy absorbed by water at 100°C during transformation into steam is called its _____.
- (A) latent heat of melting
(B) latent heat of fusion
(C) latent heat of steaming
(D) latent heat of vaporization
6. When water in the ice trays in a refrigerator freezes to form ice _____.
- (A) heat is given out and temperature decreases
(B) heat is given out and temperature increases
(C) heat is given out and temperature is maintained
(D) its volume decreases
7. Water expands on reducing its temperature below _____ $^{\circ}\text{C}$.
- (A) 0
(B) 4
(C) 8
(D) 12
- [Mar 2019]
8. The vapour content in the air is measured using a physical quantity called _____.
- (A) Absolute humidity
(B) Relative humidity
(C) Dew point
(D) Humidity
- [Mar 2020]

- Ans:** 1. (C) 2. (B) 3. (C) 4. (C) 5. (D) 6. (C)
7. (B) 8. (A)

Hint: 1. For a thermometer to read correct temperature of water, its bulb should be completely inserted inside the water but it should not touch surface of the container.

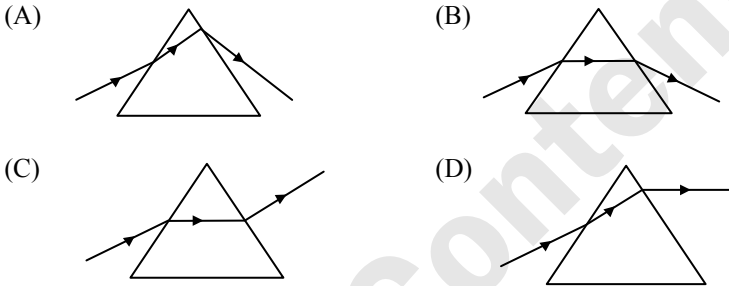
CHAPTER 6: REFRACTION OF LIGHT

- The incident and refracted ray are
 - on the opposite sides of normal at the point of incidence and lie in same plane.
 - on the opposite sides of normal at the point of incidence but lie in different planes.
 - on the same side of normal and lie in same plane.
 - on the same side of normal but lie in different planes.
- When rays of light are incident on a glass slab, then the incident ray and emergent ray are _____ to each other.
 - perpendicular
 - parallel
 - opposite
 - concurrent
- Light rays are passed through glass slab for various values of incident angle (i). Corresponding values of angle of refraction (r) and angle of emergence (e) are measured. Which one of the following options gives correct relation between the three?
 - $\angle i = \angle r < \angle e$
 - $\angle i = \angle e < \angle r$
 - $\angle i = \angle r > \angle e$
 - $\angle i = \angle e > \angle r$
- A ray of light makes an angle of 50° with the surface S_1 of the glass slab. Its angle of incidence will be _____. **[Mar 2019]**
 - 50°
 - 40°
 - 140°
 - 0°
- The velocity of light is _____ in different media.
 - 3×10^8 m/s
 - same
 - different
 - infinite
- *6. If the refractive index of glass with respect to air is $\frac{3}{2}$, what is the refractive index of air with respect to glass?
 - $\frac{1}{2}$
 - 3
 - $\frac{1}{3}$
 - $\frac{2}{3}$
- Substances in the order of optically denser to optically rarer medium are:
 - Diamond, glass, water, air
 - Glass, diamond, water, air
 - Glass, water, diamond, air
 - Diamond, water, glass, air

8. The actual position of a star is slightly _____ than apparent position of star.
- (A) lower (B) higher
(C) nearer (D) farther

- *9. We can see the sun even when it is little below the horizon because of _____.
- (A) reflection of light (B) refraction of light
(C) dispersion of light (D) absorption of light

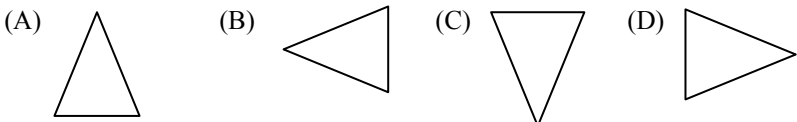
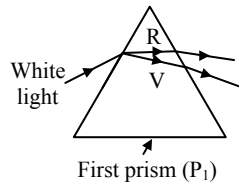
10. Study the following diagrams in which the path of a ray of light passing through a glass prism as traced by four students is shown. The student who has traced the path correctly is:



11. If we gradually increase the angle of incidence of a ray of light passing through prism then _____
- (A) angle of deviation goes on decreasing.
(B) angle of deviation decreases but after certain value of incident angle, deviation angle increases.
(C) angle of deviation goes on increasing.
(D) angle of deviation increases but after certain value of incident angle deviation angle decreases.

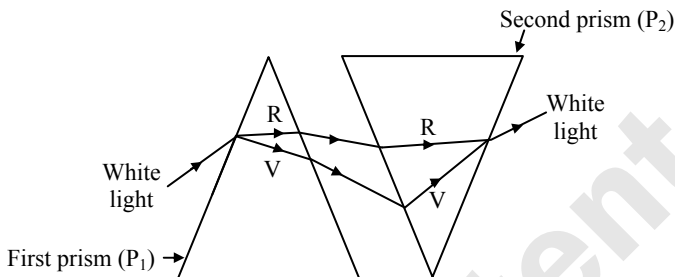
12. Colours in the order of maximum deviated to minimum deviated are:
- (A) Blue, violet, red, green (B) Violet, blue, red, green.
(C) Blue, green, red, violet (D) Violet, blue, green, red.

13. How will you place the second prism with respect to the first prism shown in the given figure to obtain white emergent light?



- Ans:** 1. (A) 2. (B) 3. (D) 4. (B) 5. (C) 6. (D)
 7. (A) 8. (A) 9. (B) 10. (B) 11. (B) 12. (D)
 13. (C)

Hint: 13. To obtain white emergent light from two prisms, the second prism should be placed parallel to the first prism but in an inverted position as shown in the figure below.



CHAPTER 7: LENSES

- A _____ lens always produces virtual and diminished image.

(A) biconvex	(B) biconcave
(C) planoconvex	(D) bifocal
- While finding the focal length of convex lens, the image obtained is _____.

(A) real and erect	(B) real and inverted
(C) virtual and erect	(D) virtual and inverted
- According to Cartesian sign conventions for lenses

(A) all distances in direction of incident ray are taken positive.
(B) all distances in direction of incident ray are taken negative.
(C) height above the principal axis is negative for concave lens.
(D) height above the principal axis is negative for convex lens.
- A student obtains a clear image of a candle on a screen with the help of a convex lens. He now wants to focus on a distant tree and obtain a clear image. In which direction should he move the lens in order to get a clear image?

(A) Behind the screen
(B) Away from the screen
(C) Towards the screen
(D) At a very long distance from the screen.
- To obtain an image of the same size as that of an object using a convex lens, the object should be placed _____.

(A) at $2F_2$	(B) Between F_2 and $2F_1$
(C) at $2F_1$	(D) at infinity

6. If radius of curvature of a biconvex lens is increased, without changing the thickness of the lens, then focal length of the lens will _____.
- (A) be decreased
 (B) remain unchanged
 (C) be increased
 (D) be first decreased and then increased
7. The power of a convex lens of focal length 25 cm is _____.
- [Mar 2022]**
- (A) 4.0 D (B) 0.25 D
 (C) -4.0 D (D) -0.4 D
8. For a particular glass lens $f = -4$ m. Only this much data was provided to a student. He was told to calculate the power of lens and to find out type of lens given to him. His answer must be _____.
- (A) Power : + 2 dioptre ; Convex lens
 (B) Power : + 1 dioptre ; Concave lens
 (C) Power : - 0.25 dioptre ; Concave lens
 (D) Power : - 2 dioptre ; Convex lens

- Ans:** 1. (B) 2. (B) 3. (A) 4. (C) 5. (C) 6. (C)
 7. (A) 8. (C)

Hint: 6. Focal length varies directly with radius of curvature.

7. Power of lens = $\frac{1}{\text{focal length in metre}} = \frac{1}{0.25} = 4.0$ D

As, focal length of convex lens is always positive, power of convex lens is also positive.

SMART TIP

While calculating power of lens, it is important to consider the value of focal length in metre.

CHAPTER 8: METALLURGY

1. The soft metal which can be cut with knife is _____.
- (A) sodium (B) aluminium
 (C) copper (D) silver
2. The flame colour of a copper strip is _____.
- (A) red (B) bluish green
 (C) white (D) brown
3. Which of the following elements reacts vigorously with water?
- (A) Mg (B) K (C) Al (D) Ca



4. What will you observe when calcium is treated with water?
 (A) It reacts violently with water.
 (B) It reacts slowly to form calcium oxide.
 (C) Bubbles of hydrogen gas are formed which stick to the surface of calcium.
 (D) Bubbles of oxygen gas are formed.
5. The CORRECT increasing order of reactivity of metals is _____.
 (A) $Mg < Al < Zn < Fe$ (B) $Al < Zn < Fe < Mg$
 (C) $Fe < Zn < Al < Mg$ (D) $Zn < Mg < Fe < Al$
6. When an iron nail is kept dipped in freshly prepared copper sulphate solution taken in a test-tube, _____.
 (A) the blue colour of the solution changed to green
 (B) the green colour of the solution changed to blue
 (C) the solution becomes colourless
 (D) the colour of the solution did not change
7. In which of the following pairs the displacement reaction does NOT occur?
 (A) $CuSO_4$ solution and silver metal
 (B) $AgNO_3$ solution and copper metal
 (C) $CuSO_4$ solution and Zn metal
 (D) $FeSO_4$ solution and Al metal
8. The greenish layer formed over the surface of copper vessels is of _____.
 (A) copper chloride (B) copper sulphide
 (C) copper oxide (D) basic copper carbonate
9. Which of the following CAN be used for giving glitter to a corroded copper article?
 (A) Lemon juice (B) Tamarind juice
 (C) Silver nitrate solution (D) All of these
10. In the Wilfley table method, the particles of gangue are separated by _____ separation method. [Mar 2020]
 (A) Magnetic (B) Froth floatation
 (C) Hydraulic (D) Gravitational
11. Gold plated ornaments is the example of _____. [Mar 2022]
 (A) Electroplating (B) Alloying
 (C) Anodizing (D) Galvanizing
- Ans:** 1. (A) 2. (B) 3. (B) 4. (C) 5. (C) 6. (A)
 7. (A) 8. (D) 9. (D) 10. (D) 11. (A)

CHAPTER 9: CARBON COMPOUNDS

1. Which of the following contains $-COOH$ functional group?
 (A) Butanone (B) Butanol
 (C) Butanoic acid (D) Butanal

2. The functional group in butanone is _____.
- (A) ether (B) ester
(C) ketone (D) aldehyde
3. Which of the following contains –OH functional group?
- (A) Butanone (B) Butanol
(C) Butanoic acid (D) Butanal
4. _____ is one of the combustible components of L.P.G. [Mar 2022]
- (A) Ethane (B) Propane
(C) Methane (D) Ethene
5. Which of the following compounds will burn with a sooty flame?
- (A) Benzene (B) Propanol
(C) Ethanoic acid (D) Butane
6. Which of the following compounds will burn with clean blue flame?
- (A) Benzene (B) Naphthalene
(C) Butane (D) Oleic acid
7. Which of the following compounds will burn with a sooty flame?
- (A) Naphthalene (B) Propanol
(C) Ethane (D) Butane
8. When ethanol reacts with sodium, the products are _____.
- (A) sodium ethanoate and hydrogen
(B) sodium ethoxide and oxygen
(C) sodium ethoxide and hydrogen
(D) sodium ethoxide and carbon dioxide
9. When few drops of acetic acid are added to a test tube containing sodium bicarbonate powder, a gas is evolved. Which of the following is CORRECT about the gas evolved?
- (A) It burns with pop sound.
(B) It turns lime water milky.
(C) It has a foul smell of rotten eggs.
(D) It has a fruity smell.
10. Which of the following represents esterification reaction?
- (A) $\text{CH}_3\text{COOH} + \text{NaOH} \longrightarrow \text{CH}_3\text{COONa} + \text{H}_2\text{O}$
(B) $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \xrightarrow[\text{catalyst}]{\text{Acid}} \text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O}$
(C) $2\text{CH}_3\text{COOH} + 2\text{Na} \longrightarrow 2\text{CH}_3\text{COONa} + \text{H}_2\uparrow$
(D) $\text{CH}_3\text{COOC}_2\text{H}_5 + \text{NaOH} \longrightarrow \text{CH}_3\text{COONa} + \text{C}_2\text{H}_5\text{OH}$
11. When ethanoic acid reacts with ethanol, the product formed _____.
- (A) is odourless
(B) has pungent odour
(C) has a foul smell of rotten eggs
(D) has a fruity smell

- Ans:** 1. (C) 2. (C) 3. (B) 4. (B) 5. (A) 6. (C)
7. (A) 8. (C) 9. (B) 10. (B) 11. (D)

CHAPTER 10: SPACE MISSIONS

1. The astronomical object closest to us is _____ in our galaxy. **[Mar 2020]**
(A) Mars (B) Venus
(C) Jupiter (D) Moon
2. The artificial satellites work on _____ energy.
(A) gravitational (B) fuel
(C) solar (D) potential
3. While launching a satellite in its orbit, the _____ velocity is given to the satellite in tangential direction.
(A) critical (B) escape
(C) highest (D) lowest
4. The minimum velocity of the spacecraft to escape from earth's gravitational force must be _____. **[Dec 2020]**
(A) 112 km/s (B) 11.2 km/s
(C) 1.12 km/s (D) 0.112 km/s
5. The functioning of the satellite launch vehicle is based on _____. **[Mar 2022]**
(A) Newton's first law of motion
(B) Newton's second law of motion
(C) Newton's third law of motion
(D) Newton's universal law of gravitation
6. Presence of water on moon was first discovered by satellite _____ sent by ISRO in 2008.
(A) Sputnik (B) Aryabhata
(C) Chandrayaan-1 (D) IRNSS
7. _____ satellite in the INSAT and GSAT series is used specially in the field of education.
(A) IRS (B) EDUSAT
(C) Aryabhata (D) IRNSS
- Ans:** 1. (D) 2. (C) 3. (A) 4. (B) 5. (C) 6. (C)
7. (B)



AVAILABLE NOTES FOR STD. X: (Eng., Mar. & Semi Eng. Medium)

PERFECT SERIES

- English Kumarbharati
- मराठी अक्षरभारती
- हिंदी लोकभारती
- हिंदी लोकवाणी
- आमोद : सम्पूर्ण-संस्कृतम्
- आनन्द : संयुक्त-संस्कृतम्
- History and Political Science
- Geography
- Mathematics (Part - I)
- Mathematics (Part - II)
- Science and Technology (Part - 1)
- Science and Technology (Part - 2)

PRECISE SERIES

- Science and Technology (Part - 1)
- Science and Technology (Part - 2)
- History, Political Science and Geography

PRECISE SERIES

- My English Coursebook
- मराठी कुमारभारती
- इतिहास व राज्यशास्त्र
- भूगोल
- गणित (भाग - I)
- गणित (भाग - II)
- विज्ञान आणि तंत्रज्ञान (भाग - १)
- विज्ञान आणि तंत्रज्ञान (भाग - २)

WORKBOOK

- English Kumarbharati
- मराठी अक्षरभारती
- हिंदी लोकभारती
- My English Coursebook
- मराठी कुमारभारती

Additional Titles: (Eng., Mar. & Semi Eng. Med.)

- ▶ **Grammar & Writing Skills Books** (Std. X)
 - Marathi • Hindi • English
- ▶ **Hindi Grammar Worksheets**
- ▶ **SSC 54 Question Papers & Activity Sheets With Solutions**
- ▶ आमोद : (सम्पूर्ण-संस्कृतम्)
SSC कृतिपत्रिका संच 11 Activity Sheets With Solutions
- ▶ हिंदी लोकवाणी (संयुक्त), संस्कृत- आनन्द : (संयुक्तम्)
SSC कृतिपत्रिका संच 12 Activity Sheets With Solutions
- ▶ **IQB (Important Question Bank)**
- ▶ **Mathematics Challenging Questions**
- ▶ **Geography Map & Graph Practice Book**



Scan the QR code to buy e-book version of Target's Notes on Quill - The Padhai App



Visit Our Website

Target Publications® Pvt. Ltd.
Transforming lives through learning.

Address:

2nd floor, Aroto Industrial Premises CHS,
Above Surya Eye Hospital, 63-A, P. K. Road,
Mulund (W), Mumbai 400 080

Tel: 88799 39712 / 13 / 14 / 15

Website: www.targetpublications.org

Email: mail@targetpublications.org



Explore our range of **STATIONERY**

