MAHARASHTRA BOARD · CLASS 10 · SCIENCE AND TECHNOLOGY PART 1

Maharashtra Board Class 10 Science and Technology Part 1 Guess Paper 2027

Time: 2 hours · Maximum marks: 40 · 21 questions

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Section 1

Q1(A) MCQs (choose the correct alternative) and Q1(B) one-mark questions (odd-one-out, correlation, true/false, match the pairs, one word)

Q1. The power of convex lens of focal length 20 cm is ..... . (A) +5.0 D (B) 0.20 D (C) -5.0 D (D) 0.5 D — 1 mark

Q2. ..... is used to make a solenoid type coil in an electric bulb. (A) Nichrome (B) Copper (C) Tungsten (D) Aluminium — 1 mark

Q3. In ..... of the modern periodic table, are the non-metals found. (A) s-block (B) p-block (C) d-block (D) f-block — 1 mark

Q4. ..... is the functional group of carboxylic acid. (a) -OH (b) -CHO (c) -NH2 (d) -COOH — 1 mark

Q5. 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 — 1 mark

Q6. Complete the co-relation: Cooking of food : Chemical change :: Evaporation of water : ..... . — 1 mark

Q7. Match the columns: Column 'A' - Simple microscope; Column 'B' - (a) used to observe minute objects (b) used to see distant objects (c) used for watch repair — 1 mark

Q8. What is the wavelength of violet ray in dispersion of light? — 1 mark

Q9. Identify the hydrocarbon from the given structural formula: H-C-C-H with hydrogen atoms shown on each carbon (ethane structure). — 1 mark

Q10. Find the odd one out: Loudspeaker, microphone, electric motor, magnet. — 1 mark

Section 2

Q2(A) give scientific reasons (any two of three) and Q2(B) two-mark subquestions (any three of five)

Q11. 'A rainbow is the combined effect of refraction, dispersion and total internal reflection of light'. Explain the sentence. — 2 marks

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Q12. Observe the given figure of Fleming's Left Hand Rule and write the labels of 'A' and 'B'. 2 marks

(i) Atomic radius goes on increasing down a group.

(ii) Simple microscope is used for watch repairs.

(iii) It is recommended to use airtight container for storing oil for long time.

Q13. Define: (a) Ores (b) Gangue. 2 marks

Q14. Give scientific reason: Geostationary satellites are not useful for studies of polar regions. 2 marks

Q15. An electric tungsten bulb is connected into a home circuit. The home electric supply runs at 220 volt potential difference. When switched on, a current of 0.45 A flows through the bulb. What must be the power (wattage) of the bulb? If it is kept 'on' for 10 hours, how many units of electricity will be consumed? 2 marks

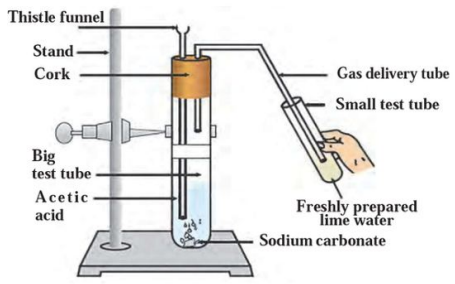
Section 3
Q3 three-mark questions (any five of eight)

Q16. Read the passage and answer: [context: space debris - non-functional satellites and launcher parts revolving around the earth that can damage satellites]. (a) What is meant by space debris? (b) How can it be harmful to the artificial satellites? (c) What efforts are being taken to manage it? 3 marks

Q17. (a) What is meant by Regelation? (b) What is the effect of pressure on melting point of ice? (c) Write any one example of regelation. 3 marks

Q18. State the factors affecting the rate of chemical reaction. Explain any one of it. 3 marks

Q19. Observe the figure and answer: (a) Which gas is released out as effervescence in the big test tube? (b) What is the colour change in the lime water? (c) Write the related chemical equation. 3 marks

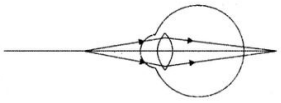


Q20. State whether the following reactions are endothermic or exothermic: (a) HCl + NaOH -> NaCl + H2O + Heat (b) 2KClO3(s) -> 2KCl(s) + 3O2 (c) CaO + H2O -> Ca(OH)2 + Heat. 3 marks

Section 4
Q4 five-mark question (any one of two)

Q21. Observe the following figure and answer: (a) Name the defect of vision represented in the above figure. (b) State the reasons for this defect. (c) How is it corrected? (d) Draw the diagram to show the correction of this defect. 5 marks

(*ii*) Observe the following figure and answer the questions given below :



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