NEW STANDARD ACADEMY

Marks: 80

Date : 13-04-2026 **CLASS : 10TH** **Time: 3 hours**

PHYSICS

1. Define the principal focus of a concave mirror.
2. The radius of curvature of a spherical mirror is 20 cm. What is its focal length?
3. Name a mirror that can give an erect and enlarged image of an object.
4. Why do we prefer a convex mirror as a rear-view mirror in vehicles?
5. A convex mirror used for rear-view on an automobile has a radius of curvature of 3.00 m. If a bus is located at 5.00 m from this mirror, find the position, nature and size of the image.
6. The magnification produced by a spherical mirror is - 3. List four informations you obtain from this statement about the mirror/image..
7. An object is placed at a distance of 30 cm in front of a convex mirror of focal length 15 cm. Write four characteristics of the image formed by the mirror.
8. Define 1 dioptre of power of a lens.
9. Draw a ray diagram to show the path of the reflected ray corresponding to an incident ray which is directed parallel to the principal axis of a convex mirror. Mark on it, the angle of incidence (i) and the angle of reflection (r).
10. Which mirror will you prefer to reflect light for heating solar furnace?

CHEMISTRY

1. Why should a magnesium ribbon be cleaned before burning in air?
2. Write a balanced chemical equation with state symbols for the following reactions.
   (i) Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.
   (ii) Sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water.
3. Why does the colour of copper sulphate solution change when an iron nail is dipped in it?
4. Identify the substances that are oxidised and the substances that are reduced in the following reactions.
   (i) $4Na(s) + O_2(g) \rightarrow 2Na_2O(s)$
   (ii) $CuO(s) + H_2(g) \rightarrow Cu(s) + H_2O(l)$
5. What is a balanced chemical equation? Why should chemical equations be balanced?
6. What does one mean by exothermic and endothermic reactions? Give examples.
7. Why is respiration considered an exothermic reaction? Explain.
8. Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions.
9. Balance the following reaction.
   $Pb(NO_3)_2 \rightarrow PbO + NO_2 + O_2$
10. What do you mean by a precipitation reaction? Explain by giving examples

BIOLOGY

1. What criteria do we use to decide whether something is alive?
2. What are outside raw materials used for by an organism?
3. What is the role of the acid in our stomach?
4. How is the small intestine designed to absorb digested food?
5. Give dental formula of human teeth.
6. What is the function of pepsin enzyme explain.
7. Give function of saliva.
8. Draw label diagram of stomach.
9. Give name of disease in deficiency of insulin, well explain
10. Give function of trypsin enzyme

MATHS

1. Find the HCF of 4052 and 12576.
2. The length, breadth and height of a room are 8 m 50 cm, 6 m 25 cm and 4 m 75 cm respectively. Find the length of the longest rod that can measure the dimensions of the room exactly.
3. An army contingent of 616 members is to march behind an army band of 32 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?
4. Consider the numbers 4n, where n is a natural number. Check whether there is any value of n for which 4n ends with the digit zero.
5. Find the HCF of 96 and 404 by the prime factorisation method. Hence, find their LCM.
6. Explain why $7 \times 11 \times 13 + 13$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ are composite numbers.
7. Prove that $\sqrt{3}$ is irrational.
8. National art convention got registrations from students from all parts of the country, of which 60 are interested in music, 84 are interested in dance and 108 students are interested in handicrafts. For optimum cultural exchange, organisers wish to keep them in minimum number of groups such that each group consists of students interested in the same artform and the number of students in each group is the same. Find the number of students in each group Find the number of groups in each art form. How many rooms are required if each group will be allotted a room?. .
9. Find the HCF and LCM of 6, 72 and 120, using the prime factorisation method
10. Find the LCM and HCF of the integers by using prime factorisation method: 26, 65, 117.