

# NEW STANDARD ACADEMY

Marks: 80

Date : 06-04-24

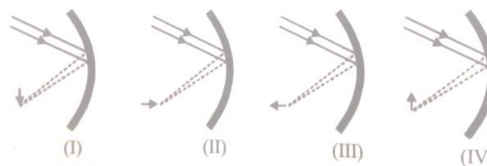
CLASS : 10<sup>TH</sup>

Time: 90 min.

## PHYSICS

- A converging lens is used to form an image on a screen. when the upper half of the lens is covered by an opaque screen
  - Half the image will disappear
  - Complete image will be formed
  - Intensity of the image will increase
  - Intensity of the image will decrease
- Which of the following forms a virtual and erect image for all positions of the object?
  - Convex lens
  - Concave lens
  - Convex mirror
  - Concave mirror
- A convex lens is in contact with concave lens. The magnitude of the ratio of their focal length is  $\frac{2}{3}$ . Their equivalent focal length is 30 cm. what are their individual focal lengths?
  - 15, 10
  - 75,50
  - 10, 15
  - 75,50
- When a ray of light enters a glass slab from air.
  - Its wavelength decreases.
  - Its wavelength increases
  - Its frequency decreases
  - Neither its wavelength nor its frequency changes.
- Which characteristic of light remains unchanged on refraction
  - Velocity
  - Refractive index
  - frequency
  - wavelength
- A student obtained a sharp image of the grill of a window on a screen using a convex lens. For getting better results, the teacher suggested focusing of a distant tree instead of the grill. In which direction should the lens be moved for this purpose?
  - Away from the screen
  - Very far away from the screen
  - Behind the screen
  - Towards the screen

- Four students A,B,C and D carried out focal length of concave mirror as shown as shown in four diagram



Correct diagram is

- II
  - I
  - III
  - IV
- A thin rod of length  $\frac{f}{3}$  is placed along the principal axis of a concave mirror of focal length  $f$  such that its image which is real and elongated, just touches rod. The magnification is
    - $\frac{2}{3}$
    - $\frac{3}{5}$
    - $\frac{3}{2}$
    - $\frac{5}{3}$
  - To obtain a diminished image of an object formed by a convex lens, where should the object must be placed?
    - Between  $F$  and  $2F$
    - At  $F$
    - Between infinity and  $2F$
    - at  $2F$
  - A diminished image of an object is to be obtained on a screen 1.0 m from it. This can be achieved by appropriately placing
    - A convex lens of focal length more than 0.25m
    - A convex mirror of suitable focal length.
    - A convex lens of focal length less than 0.25 m
    - A concave lens of suitable focal length.

## CHEMISTRY

- When quick lime is reacted with water, calcium hydroxide is formed, it is a :
  - Combination reaction
  - Displacement reaction
  - Double Displacement reaction
  - Decomposition reaction
- Calcium oxide(CaO) is also known as :



8. Air is breathed through
- Trachea-lungs- larynx- pharynx- alveoli
  - Nose – larynx-pharynx- bronchus- alveoli- bronchioles
  - Nostrils- pharynx- larynx- trachea- bronchi- bronchioles-alveoli
  - Nose –mouth- lungs
9. The exchange of gases in the alveoli of the lungs takes place by
- Simple diffusion
  - Osmosis
  - Active transport
  - Passive transport
10. The carbon dioxide is transported via blood to lungs as
- Dissolved in blood plasma
  - In the form of carbonic acid only
  - In combination with haemoglobin only
  - Carbaminohaemoglobin and as carbonic acid

### MATHS

1. The solution of the pair of equations  $x+y = a+b$  and  $ax-by = a^2-b^2$  is
- $X = b, y = a$
  - $X = -a, y = -b$
  - $X = a, y = b$
  - $X = a, y = -b$
2. In a triangle ABC,  $\angle C = 3\angle B = 2(\angle A + \angle B)$ . Find all the angles in degrees
- $\angle A = 20, \angle B = 40, \angle C = 120$
  - $\angle A = 120, \angle B = 40, \angle C = 20$
  - $\angle A = 120, \angle B = 30, \angle C = 30$
  - none of these
3. Solve the pairs of line or equations by the elimination method
- $$\frac{x}{a} + \frac{y}{b} = a + b, \frac{x}{a^2} + \frac{y}{b^2} = 2, a \neq 0, b \neq 0$$
- $x = a^2, y = b^2$
  - $x = a, y = b$
  - $x = b^2, y = a^2$
  - none of these
4. A man has certain notes of denominations Rs 20 and Rs 5 which amount to Rs 380. If the number of notes of each kind are interchanged. They amount to Rs 60 less as before find the number of notes of each denomination.
- Rs 20 and Rs 5
  - Rs 25 and Rs 5
  - Rs 20 and Rs 25
  - Rs 60 and Rs 5

5. If 6 years hence a man's age will be 3 times the age of his son and three years ago he was 9 times as old as his son, then what is the present age of the man
- 25 years
  - 35 years
  - 15 years
  - 30 years
6. Find the equation of the line passing through (3,7) whose slope is  $-\frac{3}{2}$
- $3x + 2y = 23$
  - $3x + 3y = 24$
  - $3x + 4y = 23$
  - None of these
7. The denominator of a rational number is greater than its numerator by 3. If 3 is subtracted from the numerator and 2 is added to the denominator, the new number becomes  $\frac{1}{5}$ . What was the original number?
- $\frac{5}{8}$
  - $\frac{3}{5}$
  - $\frac{7}{11}$
  - $\frac{3}{8}$
8. The coach of a cricket team buys 7 bats and 6 balls for Rs.3800. Later he buys 3 bats and 5 balls for 1750. Find the cost of each ball:
- Rs 75
  - Rs.50
  - Rs 30
  - Rs 80
9. If the system of equations  $kx + 3y - (k-3) = 0$ ,  $12x + ky - k = 0$  has infinitely many solutions, then  $k =$
- 6
  - 6
  - 0
  - None of these
10. Which of the following system of equations has no solution?
- $3x - y = 2, 9x - 3y = 6$
  - $4x - 7y + 28 = 0, 5y - 7x + 9 = 0$
  - $3x - 5y - 11 = 0, 6x - 10y - 7 = 0$
  - None of these