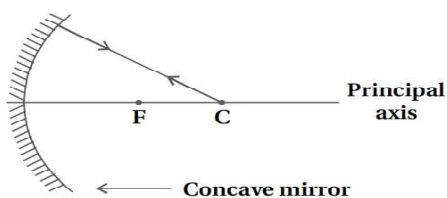


Section A

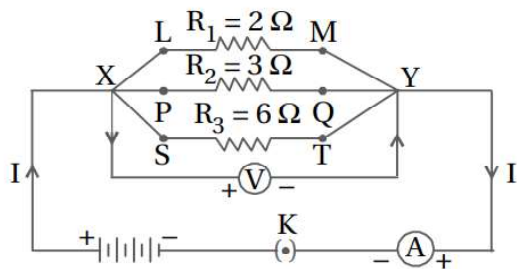
◆ Answer the questions 1 to 24 as directed. [Each carries 1 Mark] [24]

◆ Choose the correct option from given options :

- (1) $\text{CaCO}_3(\text{s}) \xrightarrow{\text{heat}} \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$ which kind of reaction is this ?
 (A) Displacement reaction (B) Oxidation reaction
 (C) Thermal decomposition Reaction (D) Precipitation Reaction
- (2) Which type of oxide is called basic oxide ?
 (A) Non-metallic oxide (B) Metallic oxide
 (C) (A) and (B) both (D) Inactive oxide
- (3) In blood flows in only one direction as there are valves in it.
 (A) vein (B) veinlets (C) artery (D) blood capillaries
- (4) The leaves of 'touch me not' plant move in response to
 (A) Touch (B) Smell (C) Taste (D) Colour
- (5) The angle of reflection in the given figure is



- (A) 90° (B) 180° (C) 0° (D) 30°
- (6) Find the equivalent resistance when 2Ω, 3Ω and 6Ω are connected in parallel as shown in the figure.



- (A) 2 (B) 4 (C) 1 (D) 11
- ◆ Fill in the blanks with correct answer :
- (7) 1 kWh = joule. (1.6×10^6 , 2.6×10^6 , 3.6×10^6)
- (8) A doctor suggest a lens of + 2.5 D power for defect of eye, then this person have type of defect of eye. (Hypermetropia, myopia, presbyopia)
- (9) images can be obtained on a screen. (Real, Virtual, Erect)
- (10) The growth of pollen tube towards ovule shows
 (Phototropism, Chemotropism, hydrotropism)

(11) In yeast, pyruvate is converted into at the end of fermentation process.

(Ethanol + CO₂, Lactic acid, CO₂ + H₂O)

(12) Bleaching powder is shown by formula (CaO, CaOCl₂, CaCO₃)

♦ **State if following statements are true or false :**

(13) $2\text{AgBr(s)} \xrightarrow{\text{Sunlight}} 2\text{Ag(s)} + \text{Br}_2\text{(g)}$ - reactions are used in colour photography.

(14) Acetic acid (CH₃COOH) is a strong acid

(15) Digested food is absorbed in liver.

(16) Medulla is located in mid-brain.

(17) Magnification is +ve for real image.

(18) In hypermetropia, image is formed behind retina.

♦ **Answer the following questions as directed in one word or a sentence.**

(19) What is 1 Ω resistance ?

(20) Write the function of crystalline lens in the human eye.

(21) Which type of mirror is used for shaving ?

(22) What is synapse ?

(23) Match the following columns :

Section A

a) Trypsin

b) Amylase

c) Bile juice

d) Pepsin

Section B

i) Pancreas

ii) Liver

iii) Gland of stomach

iv) Saliva

(24) **Column - I**

i. Na₂CO₃.10H₂O

ii. Ca(OH)₂

Column - II

a. Caustic soda

b. Slaked lime

c. Washing soda

Section B

♦ **Question No. 25 to 37 each carries 2 marks. Answer in the short in 40-50 words approximately. Attempt any 9 questions only.** [18]

(25) Explain Rancidity with example.

(26) Why is respiration considered an exothermic reaction ? Explain.

(27) Why does distilled water not conduct electricity, whereas rain water does ?

(28) A milkman adds a very small amount of baking soda to fresh milk.

(a) Why does he shift the pH of the fresh milk from 6 to slightly alkaline ?

(b) Why does this milk take a long time to set as curd ?

(29) What is the role of the acid in our stomach

- (30) What are the differences between aerobic and anaerobic respiration ? Name some organisms that use the anaerobic mode of respiration.
- (31) How does chemical coordination occur in plants ?
- (32) Draw ray diagram of position and type of image formed by convex lens when an object is placed on the principal focus F_1 .
- (33) Explain why the planets do not twinkle.
- (34) A battery of 9 V is connected in series with resistors of $0.2\ \Omega$, $0.3\ \Omega$, $0.4\ \Omega$, $0.5\ \Omega$, and $12\ \Omega$, respectively. How much current would flow through the $12\ \Omega$ resistor?
- (35) Why is tungsten used almost exclusively for filament of electric lamps ?
- (36) How do we detect the smell of an agarbatti (incense stick) ?
- (37) Find the focal length of a lens of power – 2.0 D. What type of lens is this ?

Section C

- ◆ **Question No. 38 to 46 each carries 3 marks. Answer in the short in 60-80 words approximately. Attempt any 6 questions only. [18]**

- (38) Write new cartesian sign conventions for spherical lens.
- (39) Draw a diagram of an electric circuit and name the instrument for measurement of electric current.
- (40) Explain : The steps of photosynthesis process occurring in plants and its equation.
- (41) How water and minerals are transported in plant ?
- (42) Mention preparation and uses of washing soda.
- (43) By burning magnesium ribbon in air it gets converted into magnesium oxide. How can it be written in the form of chemical equation ? Explain.
- (44) Explain : Reflex Arc with the help of a diagram.
- (45) A hot plate of an electric oven connected to a 220 V line has two resistance coils A and B, each of $24\ \Omega$ resistance, which may be used separately, in series or in parallel. What are the currents in the three cases ?
- (46) Explain dispersion of white light by a glass prism.

Section D

- ◆ **Question No. 47 to 54 each carries 4 marks. Answer in the short in 90-120 words approximately. Attempt any 5 questions only. [20]**
- (47) Explain the process of urine formation in human beings with a diagram.
- (48) A pencil, 4.0cm in size, is placed at 25.0cm in front of a concave mirror of focal length 15.0cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image ? Find the nature and the size of the image.

(49) A person is sitting in a library. He is able to read the details of the wall of the library which is at a distance of 15 Feet. He is not able to read the printed letters clearly of a book in front of him.

Answer the following questions on the basis of the above case.

a) What is the defect of vision of the person ?

b) Write the conditions of how this defect arises ?

c) How will you correct this defect ? Also draw a diagram showing the correction of this defective eye of the person.

(50) Answer the following questions :

a) What is photosynthesis ? Write a balanced chemical equation of photosynthesis?

b) Draw a neat labelled diagram of open and closed stomatal pore.

(51) Answer the following questions :

a) Explain the importance of pH in human digestive system.

b) Explain the importance of pH change as the causes of tooth decay.

(52) Explain the manufacturing of bleaching powder with chemical reactions. Write any two uses of bleaching powder ?

(53) Explain hypermetropia (far-sightedness) of vision of eye. How it can be prevented ? Explain.

(54) Draw a labelled diagram of internal structure of human heart and explain the blood circulation in human heart.