

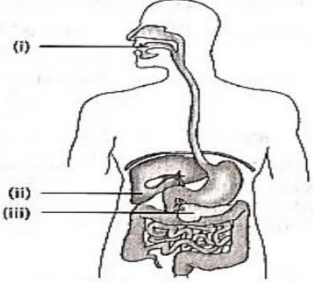
CLASS – X SUBJECT: SCIENCE
MAX. MARKS: 40 TIME: 90 Min.

General Instructions:

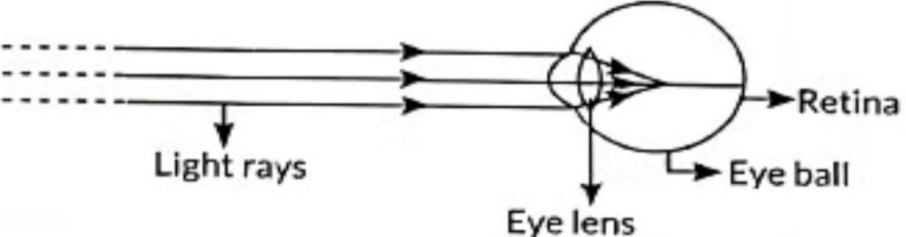
- The question paper has four sections and 18 questions. All questions are compulsory.
- **Section – A** has 9 questions of 1 mark each; **Section – B** has 5 questions, out of which 2 Qs of 2 marks and 3 Qs of 3 marks; **Section – C** has 2 questions of 5 marks each; **Section – D** has 2 Case Study based question of 4 mark each
- Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

SECTION-A

1.	Amalgam is an alloy of a. Copper and Tin (c) Lead and Tin	(b) Mercury (d) Copper & Zinc	1
2.	Which of the following pairs of reactions will result in a displacement reaction? a. FeSO ₄ solution and copper metal (c) CuSO ₄ solution and silver metal	(b) AgNO ₃ solution and copper metal (d) NaCl solution and copper	1
3.	Consider the following statements: The sex of a child is determined by what it inherits from the mother. The sex of a child is determined by what it inherits from the father. The probability of having a male child is more than that of a female child. The sex of a child is determined at the time of fertilisation when male and female gametes fuse to form a zygote. The correct statements are: a. (i) and (iii) (c) (iii) and (iv)	(b) (ii) and (iv) (d) (i), (iii) and (iv)	1
4.	In human beings, when the process of digestion is completed, the (i) proteins, (ii) carbohydrates, and (iii) fats are respectively finally converted into: a. (i) Amino acids, (ii) glucose and (iii) fatty acids b. (i) Amino acids, (ii) glucose, (iii) fatty acids and glycerol c. (i) Glucose, (ii) fatty acids and glycerol, (iii) amino acids d. (i) Sugars, (ii) amino acids, (iii) fatty acids and glycerol		1
5.	In which of the following concave mirror is used? a. A solar cooker (c) A safety mirror in shopping malls buildings	(b) A rear view mirror in vehicles (d) In viewing full size image of distant tall	1
6.	Why do stars appear to twinkle at night? a. Because the light of stars travels in a different medium b. Because the distance of a star varies when the earth rotates c. Because the star changes its position relative to the earth d. Because the atmosphere refracts the light at different angles		1

<p>7. In human alimentary canal, the specific enzyme/ juice secreted in locations (i), (ii) and (iii) are</p>  <p>a. (i) Amylase (ii) Pepsin (iii) Bile (c) (i) Lipase (ii) Amylase (iii) Pepsin</p> <p>(b) (i) Amylase (ii) Bile (iii) Trypsin (d) (i) Trypsin (ii) Bile (iii) Amylase</p>	1
<p>8. Assertion(A) : The centre of curvature is not a part of the mirror. It lies outside its reflecting surface. Reason (R) : The reflecting surface of a spherical mirror forms out of a part of a sphere. This sphere has a centre.</p> <p>a. Both A and R are true and R is the correct explanation of A. b. Both A and R are true but R is not the correct explanation of A. c. A is true but R is false. d. A is false but R is true</p>	1
<p>9. Assertion (A): In humans, if gene (B) is responsible for black eyes and gene (b) responsible for brown eyes, then the colour of eyes of the progeny having gene combination Bb, bb or BB will be black only. Reason (R): The black colour of the eyes is a dominant trait.</p> <p>a. Both A and R are true and R is the correct explanation of A. b. Both A and R are true but R is not the correct explanation of A. c. A is true but R is false. d. A is false but R is true</p>	1

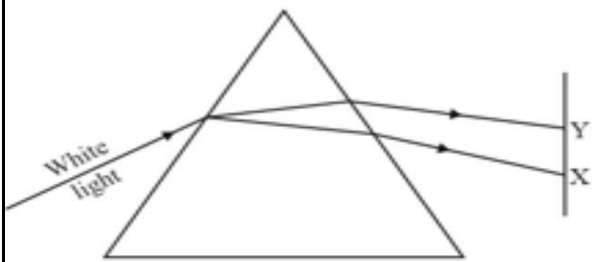
SECTION-B

<p>10. Trace the movement of oxygenated blood in the body. Or Photosynthesis takes place in the leaves and the food prepared by it reaches other parts of the plants. Name the process involved and explain it.</p>	2
<p>11. Observe the following diagram and answer the questions following it :</p>  <p>Identify the defect of vision shown and Name the type of lens used for its correction List its two causes.</p>	2
<p>12. An object of height 10 cm is placed 25 cm away from the optical centre of a converging lens of focal length 15 cm. Calculate the image distance and height of the image formed.</p>	3

13.	State reasons for the following: a. Zinc oxide is an amphoteric oxide. b. Sodium metal is stored in bottle filled with kerosene oil. c. In the reactions of nitric acid with metals, generally hydrogen gas is not evolved.	3
14.	A concave mirror has a focal length of 20 cm. At what distance from the mirror should a 4 cm tall object be placed so that it forms a real image at a distance of 30 cm from the mirror? Also calculate the size of the image formed.	3
SECTION-C		
15.	a. Write electron dot diagram for chlorine (At No. 17) and Magnesium (At No.12). Show the formation of Magnesium chloride by transfer of electrons. b. Identify the nature of above compound (c) Explain two physical properties of such compound Or a. Show on a diagram the transfer of electrons between the atoms in the formation of MgO. Write symbols of cation and anion present in MgO. b. Name the solvent in which ionic compounds are generally soluble. c. Why are aqueous solutions of ionic compounds able to conduct electricity?	3+1+1

16.	(a) Name the organs that form the excretory system in human beings. (b) Describe in brief how urine is produced in the human body.	2+3
SECTION-D		
17	CASE STUDY Mendel worked out the rules of heredity by working on garden pea using a number of visible contrasting characters. He conducted several experiments by making a cross with one or two pairs of contrasting characters of pea plant. On the basis of his observations he gave some interpretations which helped to study the mechanism of inheritance. Read the paragraph given above carefully and Answer the following questions	4
17(i)	Mendel's cross Tall and Dwarf pea plants .What did the plants of F1 progeny look like ? Give their gene combination.	
17(ii)	Why could the gene for shortness not be expressed in plants of F1 progeny?	
17(iii)	What percentage of the plants in the F2 generation were Tall in Mendel's cross between Tall and Dwarf pea plants?	
17(iv)	Write the phenotypic ratio of the plants obtained in F2 progeny and state the conclusion that can be drawn from this experiment.	

18.	<p>When white light is incident on one refracting surface of the prism, the light splits up into constituent colours violet, indigo, blue, green, yellow, orange and red. The process of splitting of white light into its seven constituent colours is called dispersion. When the dispersed white light is made to fall on a screen, we get the band of seven colours is called the spectrum of white light. Red colour bends the least on passing through the prism and violet colour bends through maximum angle on passing through the prism. Read the paragraph given above carefully and Answer the following questions</p>	4
18(i)	<p>The splitting of white light can be done by (a) lens (b) prism (c) mirror (d) none of these</p>	
18(ii)	<p>Which property of light is used by prism to form a spectrum? (a) Reflection (b) Refraction (c) Dispersion (d) Scattering</p>	
18(iii)	<p>Identify the X and Y in the given diagram</p>	

	 <p>The diagram shows a triangular prism with a horizontal base. A ray of white light enters from the left side, hitting the left face of the prism. Upon entering, the light ray bends towards the normal. As it passes through the prism, it disperses into a spectrum of colors. The top ray, which is the least deviated, is labeled 'Y'. The bottom ray, which is the most deviated, is labeled 'X'. The rays emerge from the right face of the prism and are directed towards a vertical screen on the right.</p>	
18(iv)	<p>The danger signs made red in colour, because</p> <ol style="list-style-type: none"> the red light can be seen from farthest distance the scattering of red light is least both (a) and (b) none of these 	