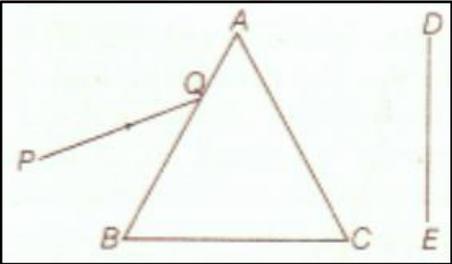
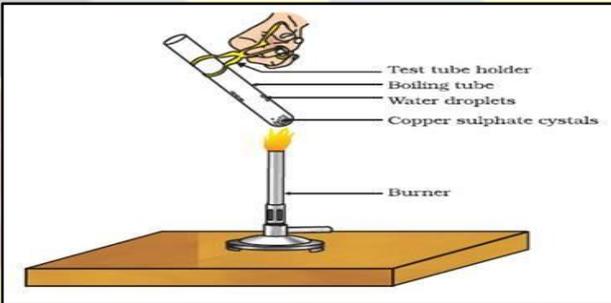


	in front of the mirror. The focal length of the mirror: a) 10 cm b) 4 cm c) 8 cm d) 6 cm	
9	The clear sky appears blue because a) Violet and blue lights get scattered more than lights of all other colours by the atmosphere. b) Blue light gets absorbed in the atmosphere. c) Light of all other colours is scattered more than the violet and blue colour lights by the atmosphere. d) Ultraviolet radiations are absorbed in the atmosphere.	[1]
10	The sky appears dark to passengers flying at very high altitudes mainly because: a) the size of molecules is smaller than the wavelength of visible light. b) scattering of light is not enough at such heights. c) there is no atmosphere at great heights. d) the light gets scattered towards the earth.	[1]
Section B		
11	What is the difference between combination and decomposition reactions? Write an equation of each type.	[2]
12	Give balanced chemical equation for 1. Reaction of acids with metals. 2. Reaction of acids with metal carbonate. 3. Reaction of acid with hydrogen carbonates (bicarbonates) 4. Reaction of acid with bases	[2]
13	With regard to obtaining oxygen for respiration a terrestrial organism has advantages over an aquatic organism. Give reasons to support this statement.	[2]
14	Why is chemical communication better than electrical impulses as a means of communication between cells in a multi - cellular organism?	[2]
15	Where should an object be placed in front of a concave mirror of focal length 20 cm so as to obtain a two times magnified virtual image of the object?	[2]
16	When and where do we see a rainbow? How is a rainbow formed? Draw a labelled diagram to illustrate the formation of a rainbow.	[2]
Section C		
17	What is a displacement reaction? Write balanced chemical equation for a displacement reaction in which iron is a reactant. Name one more element whose behaviour is similar to that of iron in such reactions. Why will this kind of behaviour not be shown by gold?	[3]
18	A chemical compound X is prepared using sodium chloride as starting material. The compound X is used for faster cooking. It also finds use as an ingredient in medicine to treat indigestion. 1. Identify the compound X.	[3]

	<p>2. Give an equation for the chemical reaction which takes place upon heating X during cooking.</p> <p>3. Which quality of compound X makes it suitable for treating indigestion?</p>	
19	<p>Name the following</p> <ol style="list-style-type: none"> The process in plants that links light energy with chemical energy. Organisms that can prepare their own food. The cell organelle where photosynthesis occurs. Cells that surround a stomatal pore. Organisms that cannot prepare their own food. An enzyme secreted from gastric glands in the stomach that act on proteins. 	[3]
20	<p>Nervous and hormonal system together performs the functions of control and coordination in human beings. Justify the statement.</p>	[3]
21	<ol style="list-style-type: none"> Define focal length of a divergent lens. A divergent lens of focal length 30 cm forms the image of an object of size 6 cm on the same side as the object at a distance of 15 cm from its optical centre. Use lens formula to determine the distance of the object from the lens and the size of the image formed. Draw a ray diagram to show the formation of image in the above situation. 	[3]
22	<p>A pencil when dipped in water in a glass tumbler appears to be bent at the interface of air and water. Will the pencil to be bent to the same extent, if instead of water we use liquids like, kerosene or turpentine? Support your answer with reasons.</p>	[3]
23	<p>A narrow beam PQ of white light is passing through a glass prism ABC as shown in the diagram.</p>  <p>Trace it on your answer sheet and show the path of the emergent beam as observed on the screen DE.</p> <ol style="list-style-type: none"> Write the name and cause of the phenomenon observed. Where else in nature is this phenomenon observed? Based on this observation, state the conclusion which can be draw about the constituents of white light. 	[3]
Section D		
24	<p>When lead nitrate is heated strongly in a boiling tube, two gases are liberated and a solid residue is</p>	[5]

	<p>left behind in the test tube.</p> <ol style="list-style-type: none"> 1. Name the type of chemical reaction and define it. 2. Write the name and formula of the coloured gas liberated. 3. Write the balanced chemical equation for the reaction. 4. Name the residue left in the test tube and state the method of testing its nature (acidic/basic). 	
25	<ol style="list-style-type: none"> 1. Name the hormone secreted by (i) Pituitary, and (ii) Thyroid stating one main function of each. Name the disorder a person is likely to suffer from due to the deficiency of the above mentioned hormones. 2. How is the timing and amount of hormone released regulated? Explain with an example. 	[5]
26	<p>Due to gradual weakening of ciliary muscles and diminishing flexibility of the eye lens, a certain defect of vision arises. Write the name of this defect. Name the type of lens required by such persons to improve the vision. Explain the structure and function of such a lens.</p>	[5]
Section E		
27	<p>Read the following text carefully and answer the questions that follow:</p> <p>Copper sulphate crystal contains water of crystallisation when the crystal is heated the water is removed and salt turns white. The crystal can be moistened again with water. The water of crystallisation is the fixed number of water molecules present in 1 formula unit of copper sulphate. On heating gypsum at 373K, it loses water molecules and became calcium sulphate hemihydrate.</p> <div style="text-align: center;">  </div> <ol style="list-style-type: none"> 1. If the crystal is moistened with water, then which colour of the crystal reappears? 2. What is the commercial name of calcium sulphate hemihydrate? 3. What is dead and burnt Plaster ? Also give equation. <p style="text-align: center;">OR</p> <p>What is obtained when gypsum is heated at 373K? Give equation.</p>	[4]
28	<p>Read the following text carefully and answer the questions that follow:</p> <p>Nutrition is the process of taking food by an organism and the utilization of food for energy. This is a vital process that helps living beings obtain their energy from various sources. Nutrients are substances that provide nutrition. The mode of nutrition varies from one species to another. Plants do</p>	[4]

photosynthesis to prepare their own food. Animals depend on plants for food.



1. What is parasitic nutrition, and how does it differ from saprophytic nutrition? (1)
2. Mention how organisms like bread moulds and mushrooms obtain their food. (1)
3. What is holozoic nutrition, and what are the typical steps involved? Give an example of an organism that exhibits it (2)

OR

4. What is common for Cuscuta, ticks, and leeches? (2)

29 **Read the following text carefully and answer the questions that follow:**

[4]

The refraction of light on going from one medium to another takes place according to two laws which are known as the laws of refraction of light. These laws are

1. The ratio of sine of the angle of incidence to the sine of the angle of refraction is always constant for the pair of media in contact.
2. $\frac{\sin i}{\sin r} = \mu = \text{constant}$
3. This constant is called the refractive index of the second medium with respect to the first medium. The Refractive index is also defined as the ratio of the speed of light in a vacuum to the speed of light in the medium.
4. The incident ray, refracted ray and normal all lie in the same plane. This law is called Snell's law of refraction.

Questions

1. When light travels from air to glass, which is greater the angle of incidence and the angle of refraction? (1)
2. How is the refractive index of a medium related to the speed of light in it and in vacuum or air?
3. If the refractive index of glass is 1.5 and speed of light in air is 3×10^8 m/s. what is the speed of light in glass? (2)

OR

If the refractive index of material A with respect to material B is 2, what is the refractive index of material B with respect to material A? (2)