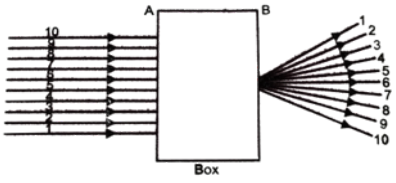
KENDRIYA VIDYALAYA
PT-1 EXAM – 2024-25
CLASS – X
SUBJECT: SCIENCE (086)

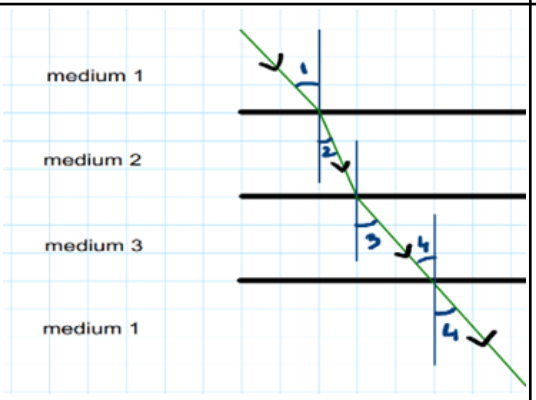
MAX. MARKS: 40 TIME: 90 Min.

General Instructions:

- *All questions are compulsory.*
- *The question paper has five sections and 20 questions. All questions are compulsory.*
- ***Section – A** has 11 questions of 1 mark each; **Section – B** has 3 questions of 2 marks each; **Section – C** has 3 questions of 3 marks each; **Section – D** has 2 questions of 5 marks each and **Section – E** has 1 Case based question of 4 marks.*
- *Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.*

SECTION-A

1.	Which of the following mirror is used by a dentist to examine a small cavity? (a) Convex mirror (b) Plane mirror (c) Concave mirror (d) Combination of convex and concave mirror	**1**
2.	What prevents backflow of blood inside the heart during contraction? (a) Valves in heart (b) Thick muscular walls of ventricles (c) Thin walls of atria (d) All of the above	**1**
3.	Which among the following is(are) double displacement reaction(s)? (i) $Pb + CuCl_2 \rightarrow PbCl_2 + Cu$ (ii) $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$ (iii) $C + O_2 \rightarrow CO_2$ (iv) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ (a) (i) and (iv) (b) (ii) only (c) (i) and (ii) (d) (iii) and (iv)	**1**
4.	Choose the correct path of urine in our body (a)kidney →ureter →urethra →urinary bladder (b) kidney → urinary bladder → urethra → ureter (c) kidney → ureters → urinary bladder → urethra (d) urinary bladder → kidney → ureter → urethra	**1**
5.	A beam of light is incident through the holes on side A and emerges out of the holes on the other face of the box as shown in the Figure Which of the following could be inside the box?  (a) Concave lens (b) Rectangular glass slab (c) Prism (d) Convex lens	**1**
6.	Which of the following are combination reactions? (i) $2KClO_3 \xrightarrow{\text{Heat}} 2KCl + 3O_2$ (ii) $MgO + H_2O \longrightarrow Mg(OH)_2$ (iii) $4Al + 3O_2 \longrightarrow 2Al_2O_3$ (iv) $Zn + FeSO_4 \longrightarrow ZnSO_4 + Fe$ (a) (i) and (iii) (b) (iii) and (iv) (c) (ii) and (iv) (d) (ii) and (iii)	**1**
7.	Which of the following is not a physical change? (a) Boiling of water to give water vapour.	**1**

	(b) Melting of ice to give water (c) Dissolution of salt in water (d) Combustion of Liquefied Petroleum Gas (LPG)	
8.	In the above diagram light is travelling through different media. It is noted by a scientist that angle 1= angle 3 = angle 4 but angle 2 < angle 1. Which of the following statement would be correct? (a) Medium 1 is the denser than medium 3 but it's density is equal to medium 2. (b) Medium 2 is the rarest medium. (c) Medium 3 is denser than medium 1. (d) Medium 1 and 3 are essentially the same medium, but medium 2 is denser than 1 and 3.  	**1**
9.	Magnesium ribbon is rubbed before burning because it has a coating of (a) basic magnesium carbonate (b) basic magnesium oxide (c) basic magnesium sulphide (d) basic magnesium chloride	**1**
10.	Which of the following statements about the autotrophs is incorrect? (a) They synthesize carbohydrates from carbon dioxide and water in the presence of sunlight and chlorophyll (b) They store carbohydrates in the form of starch (c) They convert carbon dioxide and water into carbohydrates in the absence of sunlight (d) They constitute the first trophic level in food chains	**1**
11.	The enzymes pepsin and trypsin are secreted respectively by (a) Stomach and pancreas (b) Salivary gland and stomach (c) Liver and pancreas (d) Liver and salivary gland	**1**
	SECTION-B	
12.	If the speed of light in vacuum is 3×10^8 ms-1, find the speed of light in a medium of absolute refractive index 1.5.	**2**
13.	What are the secretions of gastric glands present in the wall of stomach and also write the function of one of them?	**2**
14.	Write one balanced equation each for the (any two types) decomposition reactions where energy is supplied in the form of heat, light or electricity. **OR** A solution of a substance 'X' is used for white washing. (i) Name the substance 'X' and write its formula. (ii) Write the balanced reaction of the substance 'X' named in (i) above with water.	**2**
	SECTION-C	
15.	Give reasons for the following: (a) We apply paint on iron articles (b) Sodium is kept immersed in kerosene (c) Respiration considered an exothermic reaction	**3**
16.	A concave lens of focal length 15 cm forms an image 10 cm from the lens. How far is the object placed from the lens? Also find the size and nature of the image.	**3**

17.	Give schematic representation of different pathways of breakdown of glucose molecule. **OR** (a) Name the site of exchange of material between the blood and surrounding cells. (b) Draw a schematic representation of transport and exchange of oxygen and carbon dioxide in human body.	**3**
	SECTION-D	
18.	A divergent lens has a focal length of 30 cm. At what distance should an object of height 5 cm from the optical centre of the lens be placed so that its image is formed 15 cm away from the lens? Find the size of the image and draw a labelled ray diagram to show the formation of image in the above case. **OR** (a) Explain the following terms related spherical lenses (i) Optical centre (ii) Centre of curvature (iii) Principal axis (iv) Aperture (v) Principal focus (vi) Focal length b) A converging lens has focal length of 12 cm. Calculate at what distance should the object be placed from the lens so that, it forms an image at 48 cm on the other side of the lens.	**5**
19.	Draw neat labeled diagram of nephron and describe the process of urine formation. **OR** What do the following transport? (Give the answer for any five) (i) Xylem (ii) Phloem (iii) Pulmonary vein (iv) Vena cava (v) Pulmonary artery (vi) Aorta	**5**
	SECTION-E	
20.	**CASE STUDY** Heterotrophic nutrition is a mode of nutrition in which organisms obtain readymade organic food from outside sources. The organisms that depend upon outside sources for obtaining organic nutrients are called heterotrophs. Heterotrophic nutrition is of three types: saprophytic, parasitic and holozoic nutrition. (i) In which of the following groups of organisms food material is broken outside the body and absorbed? (a) Mushroom, green plants, Amoeba (b) Yeast, mushroom, bread mould (c) Paramecium, Amoeba, Cuscuta (d) Cuscuta, lice, tapeworm (ii) Which of the following is a parasite? (a) Yeast (b) Taenia (c) Amoeba (d) Earthworm (iii) Which of the following is an example of saprotroph? (a) Grass (b) Mushroom (c) Amoeba (d) Paramecium (iv) Heterotrophic nutrition involves (a) production of simple sugar from inorganic compounds (b) utilisation of chemical energy to prepare food (c) utilisation of energy obtained by plants (d) all of these.	**4**

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