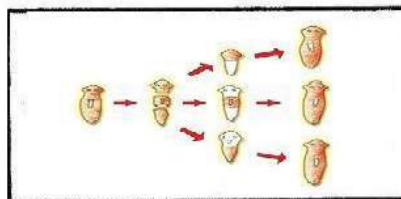
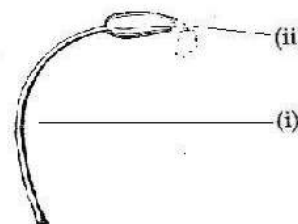


SECTION-A

- 1 Identify the functional group in the following compounds : 1
(i) CH_3COCH_3 (ii) HCOOH
- 2 In case of round yellow and green wrinkled, which is a dominant trait ? 1
- 3 Draw the conclusion for, if all the herbivores are removed from the grassland. 1
- 4 Name the condition that results due to the eye lens becoming cloudy. Suggest any one way by which this defect is rectified. 2
- 5 How does mining disturb ecological balance ? 2
- 6 Explain the formation of ozone in the higher levels of atmosphere, by giving relevant chemical equations. 2
- 7 Why should we prefer vegetable oils over animal fats for cooking food ? Give a balanced chemical equation for the reaction for hydrogenation of vegetable oils. Name the catalysts in this reaction. 3
- 8 Write balanced chemical equation of the reaction of ethanoic acid with : 3
(i) Sodium carbonate
(ii) Sodium hydrogen carbonate
(iii) Sodium hydroxide
- 9 Differentiate between soap and detergent through any three differences. 3
- 10 (a) Identify the elements amongst the following that would belong to the same group: 3
H, He, Li, B, C
(b) State the group number of the recognized elements.
(c) Name another one element placed in the same group.
- 11 Different types of gametes are produced by human males and females. Explain the types of gametes produced. 3
- 12 How do species of two isolated subpopulations become two different species ? 3
- 13 Study the diagrams given below and answer the questions that follow. 3



- (a) Identify the processes shown above.
(b) Name the organisms which use the above processes.
(c) Give one distinguishing feature for both these organisms.
- 14 (a) Identify the parts of the structure given below : 3
(b) Name the above structure.
(c) Name the female reproductive part of a flower.
(d) Give one example each of a unisexual and bisexual flower.



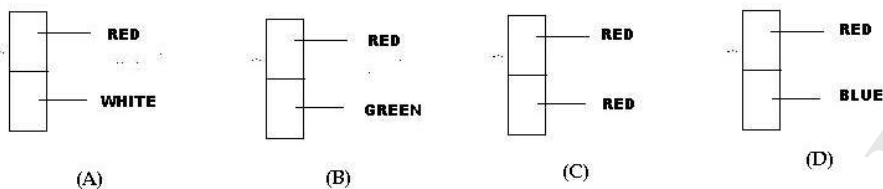
- 15 Human beings have eyes and planaria has eyespots.
(a) Give one distinguishing feature between eyes and eyespot.
(b) Name any one organism other than planaria having eyespot.

- 16 (a) Name the part of eye that :
 (i) Controls the amount of light entering into eye
 (ii) Regulates the size of the passage through which light enters
 (b) Why are we not able to see immediately after we enter a dark hall from a lighted place?
- 17 A student using a convex lens of focal length 20 cm, formed image of an object placed in front of the lens on one side a screen placed on the other side of the lens. He noted the following reading for object distance (u) and image distance (v) from lens. 3
- | S.No | 1 | 2 | 3 | 4 | 5 | 6 |
|--------|----|----|----|----|----|----|
| u (cm) | 60 | 45 | 40 | 32 | 35 | 15 |
| v (cm) | 30 | 36 | 45 | 53 | 25 | 10 |
- Without using lens formula, comment, which of these observations are wrong. Justify your answer.
- 18 Due to the active and willing participation of the local community, the Sal forests of Arabari underwent a remarkable recovery by 1983. A previously worthless forest was valued Rs 12.5 crores. 3
- (a) Explain how it became possible to bring such a change.
 (b) Mention any two values shown in this approach of forest management.
- 19 The formulae of oxides of two elements X and Y are XO and Y_2O_3 respectively. 5
- (a) Find the valencies of X and Y.
 (b) Identify the groups in which they would be placed in the modern periodic table.
 (c) Name one more element belonging to each of these groups.
- 20 The gene for blue eyes (b) is recessive to gene for brown eye (B). The given figure shows both brown and blue eyes. 5
- | | | | |
|----|----|----|----|
| | BB | | bb |
| | Bb | | ? |
| bb | Bb | Bb | bb |
- (a) Write the symbol of the mother (genotype) ?
 (b) What is the phenotype of grandmother and grandfather ?
 (c) What is the ratio of individuals with brown and blue eyes respectively ?
- 21 Give reasons as to why are the below mentioned organs important in the process of fertilization : 5
- (a) Ovaries
 (b) Testis
 (c) Vas Deferens
 (d) Vagina
 (e) Uterus
- 22 A pencil partly immersed in water appears to be bent at water surface, explain it with the help of a labelled diagram. State whether the bending of pencil will increase or decrease if water is replaced by another liquid which is optically more dense than water, explain. 5
- 23 (a) Draw a diagram to explain how a rainbow is formed. Also state the conditions in which a rainbow is formed. 5
 (b) Write the seven colours seen in a rainbow in increasing order of their wavelength.
- 24 An object of height 3 cm is placed at a distance of 10 cm from a convex mirror of focal length 10 cm. Find nature, position and size of the image formed. 5

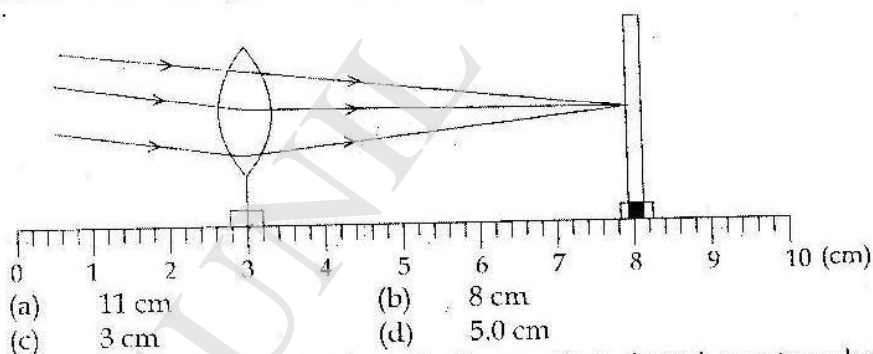
SECTION - B



- 25 The correct statement for the composition of soap is that it is a :
 (a) sodium or potassium salt of higher fatty acid
 (b) sodium salt of long chain benzene sulphonic acid
 (c) sodium salt of branched chain benzene sulphonic acid
 (d) calcium salt of higher fatty acid
- 26 After performing saponification reaction, Rupal dipped half strip of red litmus paper in the resulting mixture. Which of the following is correct observation ?



- 27 Riya performs two sets of experiments to study the length of foam formed which are as follows
 SET 1 : She takes 10 ml distilled water in the test tube A and adds 5-6 drops of liquid soap in it and shakes the test tube vigorously.
 SET 2 : She takes 10 ml distilled water in test tube B and adds 5-6 drops of liquid soap along with half teaspoonful of calcium sulphate in it and shakes the test tube vigorously.
 The correct observation could be:
 (a) height of foam is more in test tube A as it is hard water.
 (b) height of foam is more in test tube A as it is soft water.
 (c) height of foam is more in test tube B as it is soft water.
 (d) height of foam is more in test tube B as it is hard water.
- 28 A convex lens forms an erect and magnified image of an object placed at a distance of 15 cm from it. The focal length of the given lens is :
 (a) less than 15 cm (b) more than 15 cm
 (c) equal to 15 cm (d) more than 15 cm but less than 30 cm
- 29 Parallel rays from a distant object are incident on a convex lens to form an image on the screen as shown in the figure. The focal length of the convex lens in the given experimental setup is



- 30 In an experiment on tracing the path of a ray of light through a rectangular glass slab, four students A, B, C and D used the following values of angle of incidence and the distance between the two pins (fixed on the line representing the incident ray) :
- (A) $(30^\circ, 45^\circ, 60^\circ)$ and 2 cm
 (B) $(30^\circ, 45^\circ, 60^\circ)$ and 8 cm

(C) (20°, 50°, 70°) and 2 cm

(D) (20°, 50°, 70°) and 8 cm

The student who has taken the correct values is :

- (a) (A) (b) (B)
 (c) (C) (d) (D)

31 In order to trace the path of ray of light through a triangular glass prism, which of the following option should not be chosen by a student ? 1

- (a) always use white paper to place the prism.
 (b) always use black paper to place the prism.
 (c) prism table should be levelled properly.
 (d) use proper straight pins as object.

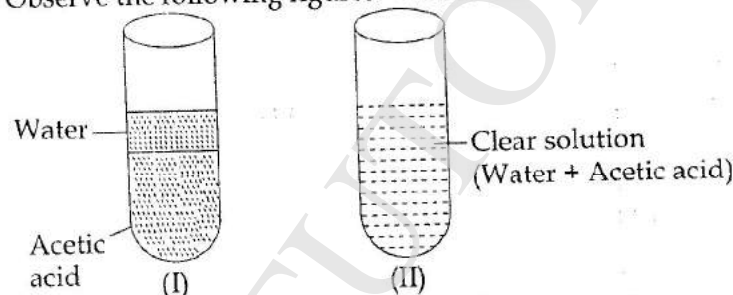
32 Homologous structure among animals provide evidence for evolution that these structures are : 1

- (a) different in different animals, but are modifications of the same basic structures.
 (b) similar in function but of different basic structure.
 (c) all shown in the fossil record.
 (d) all produced by the same gene.

33 The condition needed by most seeds to break dormancy is : 1

- (a) exposure to heat (b) exposure to moisture
 (c) exposure to cold (d) sowing in soil.

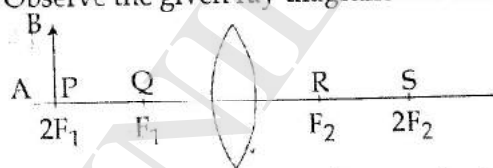
34 (a) Observe the following figures. Which one of the two is correct and why ? 2



(b) How will you test the acidic nature of acetic acid ?

35 A student tried to observe the slide of binary fission in amoeba under a microscope. After focussing on the slide he was not able to get a clear view even after adjusting the diaphragm. Suggest two possible modes of adjustments of the microscope to get a clear view of the slide. 2

36 Observe the given ray diagram and answer the following questions : 2



- (a) Complete the ray diagram for image formation by a convex lens.
 (b) Mention the size and nature of image formed in above case.

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