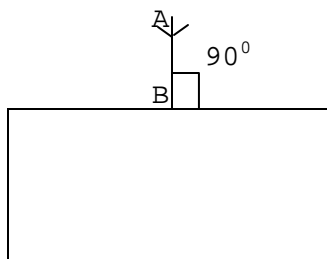


1. Name the functional group present in :-  
 a)  $\text{CH}_3\text{COOH}$             b)  $\text{CH}_3\text{COCH}_3$             c)  $\text{CH}_3\text{CH}_2\text{OH}$             d)  $\text{HCHO}$
2. Name the compound formed when ethanoic acid reacts with ethanol in the presence of concentrated sulphuric acid.
3. Explain myopia with the help of suitable ray diagrams. How can this defect of vision be corrected?
4. A boy uses spectacles of focal length -50 cm. Name the defect of vision he is suffering from. Calculate the power of this lens.
5. What is the name given to a set of unpaired chromosomes of an organism?
6. What is meant by "homologous organ"?
7. Name any two organs that are homologous to human hand. To which category of organs would you place wings of birds and wings of insects?
8. Draw a labeled diagram of the longitudinal section of pistil of a flower.
9. Differentiate between biodegradable and non-biodegradable substances. Classify the following under the above two categories  
 DDT,                      Paper,                      Cotton Clothes,                      Plastics  
 Vegetable peels,                      Waste from cattle shed
10. Name the types of sex chromosomes present in  
 a) Human male and  
 b) Human female  
 What will be the sex of the child produced if a sperm carrying 'Y' chromosome fertilizes the egg?
11. Alkanes are commonly called as:-  
 a. Olefins                      b. Paraffin                      c. Easters                      d. None of these
12. List three phenomenon of light responsible for formation of rainbow in the sky.
13. Why do stars twinkle whereas plants do not?
14. An object is placed perpendicular to the principal axis of a convex lens of focal length 10 cm. The distance of the object from the optical centre of the lens is 15 cm. Find the position and nature of the image formed.
15. Define the power of accommodation of human eye.
16. Why are coal and petroleum called fossil fuels?
17. Explain why?  
 a) Elements in a group of the periodic table have similar chemical properties.  
 b) Elements in group 17 are called Halogens.  
 c) Elements of group 18 are called noble gases/zerovalent.
18. What are the reasons for opposition to construction of dams?
19. a) Name the gland which produce sperm cells and also name the hormone produced by this gland?  
 b) Name the site where fertilization of ovum in human females takes place.
20. What is vegetative propagation? List three advantages of vegetative propagation and identify the plants for which this practice is used.  
 Banana,            Rice,            Tomato,            Rose

21. Define power of a lens and write its S.I. unit.
22. A ray of light AB is incident on a glass slab as shown below. Draw the ray diagram and show the refracted ray. Also write the values of angle of incidence and refraction.



23. The refractive index of diamond is 2.42. Calculate the speed of light in diamond if the speed of light in air/vacuum is  $3 \times 10^8$  m/s.
24. Explain the cleansing action of soap. Also draw a diagram to show the micelle formed by soap molecules.
25. Briefly explain the sex determination in Human beings with the help of a diagram and justify that "the sex of a new born depends on his/her father not on mother".
26. What are acquired traits? Why acquired traits not able to direct evolution?
27. Name three methods of contraception. Name the medical term used for removal of vas deference in males and fallopian tubes in females.
28. Draw a ray diagram for the object placed :-  
 a) Between optical centre and principal focus of a convex lens.  
 b) Between F and 2F of a convex lens.  
 c) At 2F of a convex lens.
29. Name the compound formed on heating  $\text{CH}_3\text{CH}_2\text{OH}$  with Conc.  $\text{H}_2\text{SO}_4$  at 443 K.
30. Name the organ where fertilized egg gets implanted and explain how does embryo gets nourishment there?
31. Name the male and female reproductive parts of the flower. Give two examples of each Unisexual and bisexual flower.
32. Differentiate between self and cross fertilization. How fertilization is different from pollination?
33. Which of the following is a common characteristic of a covalent compound?  
 a) High melting point.  
 b) Conduct electricity when it is in the molten / aqueous state.  
 c) Consists of molecules.  
 d) Always soluble in water.
34. Duralumin is an alloy of  
 a) Al and Cu      b) Cu and Sn      c) Al and Ag      d) Al and Fe
35. Formation of chloroform ( $\text{CHCl}_3$ ) from methane and chlorine is an example of :  
 a) Addition      b) Dehydration      c) Substitution      d) Elimination
36. Identify the following substances:  
 a) An Alkane which can also be called a green house gas.  
 b) A chemical used to deplete ozone layer.  
 c)

37. Name the following with chemical formulae:

- First member of Alkane series.
- Second member of Alkane series.
- Third member of aldehyde series.
- Second member of carboxylic acid.
- Fourth member of alcohol series.

38. On the basis of the periodic table answer the following questions:-

- Name the second last element of the 3<sup>rd</sup> period.
- Name the element which has the highest electro negativity.
- Name the element which may be placed in group 1<sup>st</sup> but is a non-metal.
- What is the name given to group 1<sup>st</sup> and group 2<sup>nd</sup>.

39. What is denatured alcohol?

40. Give two important uses of ethanol.

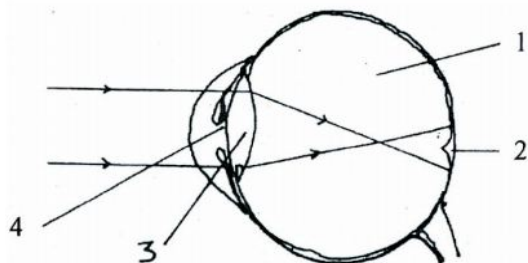
41. Write the equation for the preparation of acetic acid by ethyl alcohol.

42. When a ray of light passes from air to glass, for what angle of incidence, the ray will not show any deviation?

43. Name the lens that always forms a virtual and erect image of an object.

44. Draw a ray diagram to illustrate how a ray of light incident obliquely on one face of a rectangular glass slab of uniform thickness emerges.

45. Given below is the diagram depicting a defect of the human eye. On the basis of the diagram answer the following questions:-



a) Name the defect shown in the diagram.

b) Name two possible reasons for this defect of the eye in the human beings.

c) Name the part labeled 1 to 4.

d) Draw the diagram to show how the above mentioned defect is rectified using an appropriate lens.

46.

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