

# SUMMATIVE ASSESSMENT—II

## SCIENCE (*Unsolved*)

### CLASS—X

Time allowed : 3 Hrs.

Max. Marks : 90

General Instructions : Same as Sample Paper—1 (*Solved*)

#### SECTION—A

1. Write the name and molecular formula of an alkyne having four carbon atoms. [1]
2. Define speciation. [1]
3. Where will the image be formed by a concave mirror when an object is placed between the pole and the focus point of the mirror ? [1]
4. Consider the following elements :  
Na, Ca, Al, K, Ng, Li
  - (a) Which of these elements belong to the same period of the periodic table ?
  - (b) Which of these elements belong to the same group of the periodic table ?
5.
  - (i) What is genetic drift ?
  - (ii) Which type of organism will have more variation-sexually and asexually reproducing organisms ? Justify.
6. A student sitting in the last row of the class-room is not able to read clearly the writing on the blackboard :
  - (a) Name the type of defect of vision he is suffering from.
  - (b) How can this defect be corrected ?
7. Why does micelle formation take place when soap is added to water ? Will a micelle be formed in other solvents such as ethanol also.
8. The atomic number of *k* and Ca is 19 and 20 respectively and they belong to the same period.
  - (a) Which amongst them would have smaller size ?
  - (b) Which one would be more electropositive ?
  - (c) To which group would each of them belong ?
9. With the help of a diagram, describe the structure of a flower.
10. With the help of an example, explain how new species are produced.
11. A 2 cm high candle flame is placed at a distance of 80 cm from a white screen. On placing a convex lens exactly at the mid-point of the candle and the screen, a distinct image of the flame is seen on the screen. What is the focal length of the lens and the size of the candle flame image formed ? Draw a ray diagram to show the formation of the image in the case.

[Ans.  $f = +20$  cm, size =  $-2$  cm]

12. A person cannot read a book at distances less than 50 cm. Name the defect of vision he is suffering from. How can it be corrected ? Draw ray diagrams to show the image formation:
  - (i) by defective eye and
  - (ii) after using corrective lens
13. (a) Distinguish between producers and decomposers.  
 (b) Classify the following as products and decomposers :  
 Green plants, Bacteria , Fungi, Blue-green algae.
14. State three advantages of constructing dams across the rivers
15. Petroleum reserves under the earth could last for another forty years and coal reserves could last for another two hundred years. Preeti asked her friend Nikita, "what our next generation would do without petroleum and coal ? Nikita said, "There is nothing to feel dejected. We had the principle of three R's.
  - (i) Explain the principle of three R's
  - (ii) What is sustainable development ?
  - (iii) What values one shown by Preeti and Nikita ?
16. "It is a matter of chance whether a couple will give birth to a male child or a female child". Justify this statement with the help of a flow chart showing the fusion of sex chromosomes.
17. (a) What happens to basic character of oxides down the group and why ?  
 (b) What happens to acidic character of oxides along the period and why ?
18. Will the impact of removing all the organisms in a trophic level be different for different trophic level ? Can the organisms of any trophic level be removed without causing any damage to the ecosystem.
19. (a) Give reasons for the following :
  - (i) Unsaturated hydrocarbons show addition reaction.
  - (ii) Conversion of ethanol to ethanoic acid is an oxidation reaction.
  - (iii) Alcohol supplied for industrial purpose is mixed with copper sulphate
- (b) Write chemical equation to represent the preparation of ethane from ethanol.
- (c) State the role of concentrated sulphuric acid in an esterification reaction.
20. Draw a labelled diagram of the human female reproductive system and explain its working.
21. Define the term 'evolution'.  
 Evolution can not be equated with progress. Justify this statement.
22. (i) Arrange the following elements in the increasing order of their metallic character.  
 (ii) An element X (atomic number 17) reacts with an element Y (atomic number 20) in form a divalent halide.
  - (a) Where in the periodic table are elements X and Y placed ?
  - (b) Classify X and Y as metal (s), non-metal (s) or metalloids (s).
  - (c) What will be the nature of oxide of element Y ? Identify the nature of bonding in the compound formed.
  - (d) Draw the electron dot structure of the divalent halide.
23. What is meant by scattering of light ? Mention the factor on which it depends. Explain why the colour of the clear sky is blue ? An Astronaut in space finds sky to be dark. Explain reason for this observation.

24. (i) Define real image of an object  
 (ii) Name the mirror that :  
 (a) can give real as well as virtual image of an object.  
 (b) will always give virtual image of same size of an object.  
 (c) will always give virtual and diminished image of an object.  
 (d) is used by a doctor in examining teeth.  
 (e) With the help of a ray diagram, explain the use of concave mirror as solar concentration.

### SECTION—B

25. The part of embryonal axis that forms shoot is :  
 (a) Epicotyl (b) Plumule  
 (c) Hypocotyl (d) Cotyledons
26. Which one of the following pairs of vegetables is an example of analogous structures ?  
 (a) potato and sweet potato (b) radish and sweet potato  
 (c) carrot and tomato (d) tomato and radish
27. Analogous organs have :  
 (a) similar function (b) similar origin  
 (c) similar form (d) similar ancestor
28. Which acid among following can be used for the preparation of soap ?  
 (a) stearic acid (b) citric acid  
 (c) oxalic acid (e) formic acid.
29. Sodium bicarbonate solution is added to dilute ethanoic acid. It is observed that :  
 (a) a gas evolves (b) a solid settles at the bottom  
 (c) the mixture becomes warm  
 (d) the colour of the mixture becomes light yellow
30. A student added dilute Acetic acid to an unknown white solid (A) kept in a test tube. It was observed that a colourless gas (B) was evolved. The gas was passed through lime water which turned milky. The solid (A) and the gas (B) could be  
 (a) solid A is  $\text{Pb}(\text{NO}_3)_2$  and the gas B is  $\text{NO}_2$   
 (b) solid A is  $\text{FeSO}_4 \cdot \text{ZnH}_2\text{O}$  and the gas B is  $\text{SO}_2$   
 (c) solid A is  $\text{NaHCO}_3$  and the gas B is  $\text{CO}_2$   
 (d) solid A is  $\text{CH}_3\text{COONa}$  and the gas B is  $\text{O}_2$
31. A student focussed the image of a distant object using a device 'X' on a white screen 'S' as shown in the figure. If the distance of the screen from the device is 40 cm, select the correct statement about the device.

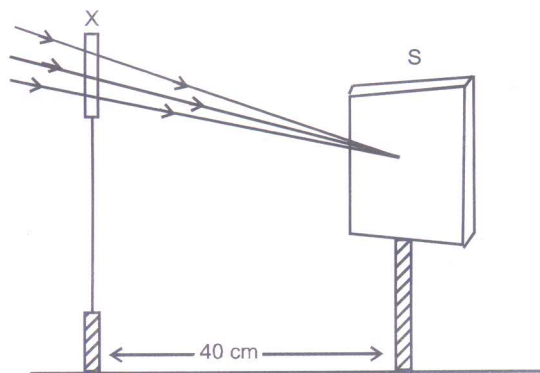


Fig. 1.



- (a) The device X is a convex lens of focal length 20 cm.  
 (b) The device X is a concave mirror of focal length 40 cm.  
 (c) The device X is a concave mirror of radius of curvature 40 cm.  
 (d) The device X is a convex lens of focal length 40 cm.
32. Four students draw a ray diagram showing the dispersion through a glass prism. When a narrow beam of white light is incident on the glass prism as shown in figure A, B, C and D. Which of the following is correct ray diagram ?

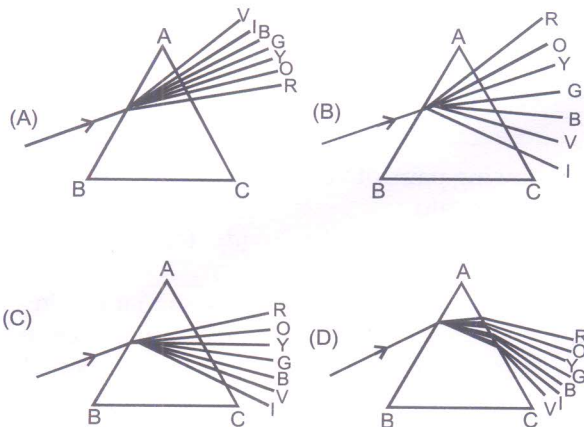


Fig. 2.

- (a) A  
 (b) B  
 (c) C  
 (d) D
33. Following diagrams were drawn by the four different students on having seen a prepared slide of budding in yeast :

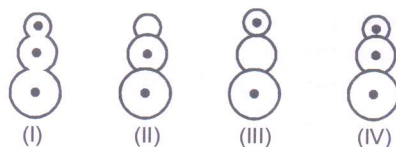


Fig. 3.

The correct diagram is

- (a) I  
 (b) II  
 (c) III  
 (d) I and IV
34. Vinegar was taken in a test tube and blue litmus solution was added to it. A change in colour was observed. Then on adding sodium hydroxide solution to the test tube, the blue colour was restored. Explain the observations.
35. If an object lies beyond the centre of curvature of concave mirror, where is the image formed ? What will be its nature ?
36. What kind of reproduction is seen in Amoeba ? How will you identify it as different from an extension for pseudopodia ?