

SUMMATIVE ASSESSMENT - II (2014-15) SCIENCE

Time allowed : 3 hours

TEQQ17C

Maximum Marks : 90

1. Draw the structure of propanone.
2. A tall plant is crossed with a dwarf plant. What will be the ratio of homozygous tall and homozygous dwarf plants in F₂ generation ?
3. Define biological magnification.
4. Mention the factor on which scattering of light depends. Why does the sky appear dark in space ?
5. With the increasing human population demand for the resources has also increased at an exponential rate. What can be done for management of our natural resources ?
6. Suggest any two methods that should be adopted to ensure that the local air and local water bodies are not polluted.
7. Write the names of the following functional groups.
(i) $\begin{array}{c} \diagup \\ \text{C}=\text{O} \\ \diagdown \end{array}$ (ii) $-\text{Cl}$ (iii) $-\text{CHO}$
8. Atom of an element contains five electrons in its valence shell. This element is major component of air. It exists as a diatomic molecule.
(i) Identify the element.
(ii) Show the bond formed between two atoms of this element.
(iii) Write the nature of the bond between the two atoms.
9. Why metals are electropositive and non-metals electronegative in nature ? Illustrate giving example of each. Why metallic character of elements increases down a group ?
10. Name three elements which have completely filled outermost shell. Write their common name and justify it.
11. Mention any two points to differentiate between oxidation and combustion. Give one example of each.
12. In an experiment, Mendel obtained 1014 plants, out of which 787 were having round seeds and 227 had wrinkled seeds in F₂ generation :
(a) What was the approximate ratio obtained in F₂ generation ?
(b) Under which law do you find this ratio ?
(c) Why is this law so called ?
13. How does the bread mould, Rhizopus reproduce ? Draw the structure involved in reproduction. How is Rhizopus benefitted if it reproduces this way ?
14. Draw the female reproductive part of a flower and label the part that is :
(a) Responsible for production of ovules
(b) Sticky portion that receives the pollen grains during pollination
15. (a) How would you relate the following methods to asexual reproduction ?
(i) Binary fission (ii) Spore formation
(b) State any one advantage of using sexual reproduction over asexual reproduction.
16. (a) Name the compounds CH_3COOH and identify its functional group. (b) Give a chemical test to identify this compound. (c) Name the gas evolved when this compound acts on solid carbonate. How would you

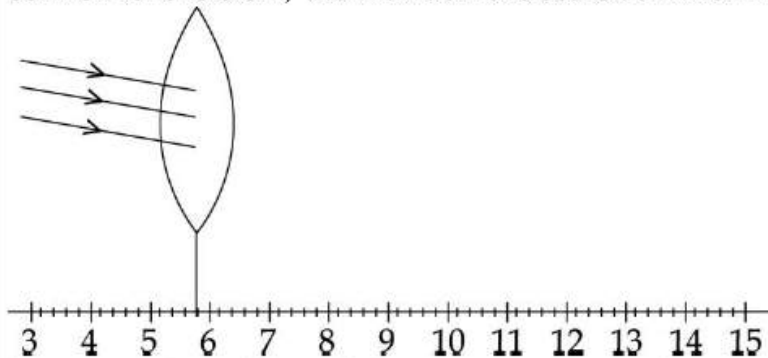
identify this gas?

17. Design an activity using spoon to explain the difference between Concave and Convex mirrors. Also compare the characteristics of the images formed on the two surfaces of the spoon.
18. Narmada Bachao Andolan (NBA) is a social movement consisting of tribles, farmers, environmentalists, and human right activists against a number of large dams being built across the Narmada river. The river flows through the states of Gujarat, and Madhya Pradesh in India. Sardar Sarovar Dam in Gujarat is one of the biggest dams on the river and one of the first focal point of the movement.
- (i) Why do you think there is so much of criticism about construction of of large dams ?
- (ii) List two advantages of building a dam.
- (iii) Many famous personalities are campaigning and supporting the movement. What values are promoted by them ?
- 19 (a) Differentiate between soap and detergent in three points.
(ii) Explain why soaps form scum with hard water whereas detergents do not ?
- 20 (a) Explain whether traits like eye colour or height is genetically inherited. Do power to lift weights and reading french also belong to the same category ?
(b) How do variations affect the evolution of those organisms that reproduce sexually ?
- 21 Different organisms reproduce by different methods suitable to their body designs.
(a) Justify the above statement using examples of **three** different organisms which reproduce by different methods of asexual reproduction.
(b) Differentiate between sexual and asexual modes of reproduction.
- 22 Draw a neat labelled diagram of the structure of the human eye and mention the functions of any four parts.
- 23 A student has three concave mirrors A, B, C of focal lengths 20 cm, 15 cm and 10 cm respectively. For each concave mirror he performs the experiment of image formation for three values of object distance of 30 cm, 10 cm and 20 cm.
Giving reason answer the following :
- (a) For the three object distances identify the mirror which will form an image equal in size to that of object. Find at least one value of object distance.
- (b) Out of the three mirror identify the mirror which would be preferred to be used for shaving purpose.
- (c) For the mirror B draw ray diagram for image formation for any two given values of object distance.
24. (a) Explain the term refraction.
(b) Letters written on a paper when seen through glass slab appear to be raised. Explain this phenomenon with the help of a ray diagram.
(c) Light enters from air into diamond which has a refractive index of 2.42. Calculate the speed of light in diamond. The speed of light in air is $3 \times 10^8 \text{ ms}^{-1}$

Section-B

- 25 To prepare soap oil/fat used is :
- (a) kerosene oil (b) turpentile oil
(c) paraffin (d) vegetable oil

- 26 During saponification, process along with soap, another compound is also formed. The compound is :
 (a) Glycol (b) Glycogen
 (c) Glycerol (d) Glucose
- 27 Soap does not form lather in :
 (a) homogeneous solution of calcium chloride in water (c) rain water
 (b) tap water (d) river water
- 28 A student wants to find the focal length of a concave mirror given to him. He focuses a distant object with this mirror, to obtain a sharp image the chosen object should not be :
 (a) a building (b) a tree
 (c) a window, (d) the sun.
- 29 The teacher asks a student to fix the given screen at an appropriate place in the given experimental setup, so that a clear image can be obtained on the screen. If the focal length of convex lens is 8 cm, the mark on the scale at which he should fix up the screen is :

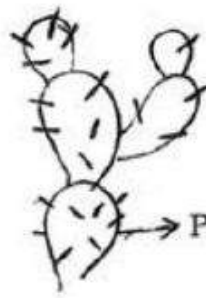


- (a) 12.8 cm (b) 13.0 cm (c) 8 cm (d) 13.8 cm
- 30 Dilip recorded the following sets of observations during the experiment with a rectangular glass slab while tracing the path of a ray of light passing through it for four different values of angle of incidence
- | S. No. | $\angle i$ | $\angle r$ | $\angle e$ |
|--------|------------|------------|------------|
| I | 30° | 19° | 30° |
| II | 40° | 27° | 39° |
| III | 50° | 40° | 50° |
| IV | 60° | 35° | 60° |
- The incorrect observation is at the serial number :
 (a) I (b) II
 (c) III (d) IV
- 32 Two students while doing separately the experiment of tracing the path of ray of light through a triangular glass prism are not able to get the same angle of refraction. This may be due to :
 (a) both used pins of different sizes.
 (b) both students were using prisms of different sizes.
 (c) difference of the length of white paper on which prism was placed.
 (d) both were taking different angles of incidence.

33 The diagrams A and B represents the following relationship :



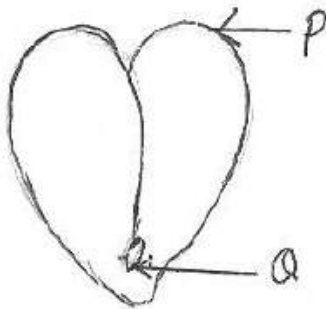
Peepal leaf



Phylloclade of Opuntia

- (a) homologous organs
- (c) vestigial organs
- (b) analogous organs
- (d) rudimentary organs

34 Identify the appropriate labelling of the parts marked P and Q in the adjoining figure.



- (a) P – cotyledon ; Q – radicle
- (b) P – plumule ; Q – cotyledon
- (c) P – Seed coat ; Q – radicle
- (d) P – Seed coat ; Q micropyle

34 Complete the following statements regarding the study of properties of acetic acid :

- (a) Odour of acetic acid resembles with _____.
- (b) On shaking a mixture of 5 ml acetic acid and 5 ml water in a test tube, it was observed that the resulting solution appears _____.
- (c) On adding a few drops of acetic acid to solid sodium hydrogen carbonate it was observed that _____.
- (d) When a drop of acetic acid was put on red litmus paper, the red litmus paper _____.

35 Is parental identity lost in binary fission of amoeba ? Justify your answer with proper reason.

36. A student performed the experiment to find the position of images for the different positions of an object. If centre of curvature of convex lens is 20 cm, then match the following on the basis of above information :

Position of Image	Position of an object
(a) At infinity	(a) Object is 20 cm away from lens
(b) Beyond C	(b) At infinity
(c) Image is 20 cm away from lens	(c) At 10 cm from lens
(d) Image is 10 cm away from lens	(d) Between F and C

Best of luck : Learn Here Serve Every where