



DAV BORL PUBLIC SCHOOL, BINA

CLASS -X.

SUBJECT-SCIENCE.

PRACTICE PAPER FOR SA-II (2015-2016)

Section -A

1. What is meant by homologous organ? Cite an example in plants. 1
2. Write the name and the chemical formula of the simplest alkyne. 1
3. Observable traits that were seen in Mendel's experimental material is 1
known as ____.
4. A student sitting in the last row cannot read clearly the letters written 2
on the blackboard. What could be the defect of vision the student is
suffering from? Suggest the type of lens to correct his vision and
draw ray diagram.
5. List down any two reasons as to why the green coloured beetle arose 2
in the colony predominated by red beetles.
6. Describe in detail the process of double fertilization. 2
7. Which part of Bryophyllum can be used for vegetative propagation? 3
Mention two advantages of vegetative propagation.
8. A 2 cm high object is placed at a distance of 32 cm from a concave 3
mirror. The image is real, inverted and 3 cm in size. Find the focal
length of the mirror and the position where the image is formed?
9. a) Write down any four suggestions that you would like to give to 3
your recently married uneducated maid so that she can restrict
to only one or two offspring in order to ensure good
reproductive health,
10. A child while playing with his father's spectacles burn a hole in a 3
pieces of paper by focusing a small image of the sun on it.
(i) What defect of vision his father is suffering from?
(ii) Write two causes for this defect?
(iii) Draw a ray diagram to show image formation by the defective
eye?
(iv) Draw a ray diagram showing corrected eye using proper lens.
11. Give a labeled diagram of a female reproductive system and label the 3
following parts. 1. Ovary 2. Oviduct 3. Uterus 4. Fimbriaes

12. An organic compound A is an essential constituent of wine and beer. Oxidation of A yields An organic acid B which is present in vinegar. Name the compounds A and B and write their structural formula. What happens when A and B react in the presence of an acid Catalyst? Write the chemical equation for the reaction. 2+1
13. a. What is meant by law of segregation
b. Give a scientific name of the plant that Mendel used as an experimental material.
c. Write down the asexual mode of reproduction in Planaria and Hydra?
14. (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?
15. Differentiate between artificial selection and natural selection giving three points. 3
16. What is global warming? List down its one cause, effect and remedies of it. 3
17. Draw a well labeled diagram showing steps of reproduction seen in Plasmodium. 3
18. List down the names of any two sexually transmitted disease each caused by i) Bacteria ii) Virus 3
19. A pure round seeded plant with axial flower was crossed with a plant having wrinkled seed and terminal flower (recessive feature). Find out how many seeds procured from parents will grow to form homozygous and heterozygous plant with round seed and axial flower in F₁ and F₂ generation respectively with the help of Punnett's square . 5
- Or**
- List down any four evidences of Evolution and describe any two in detail.
20. State the function of each of the following parts of the human eye : 5
(i) Cornea (ii) Iris (iii) Pupil (iv) Retina
Millions of people of the developing countries are suffering from corneal blindness. This disease can be cured by replacing the

defective cornea with the cornea of a donated eye. Your school has organised a campaign in the school and its neighbourhood in order to create awareness about this fact and motivate people to donate their eyes after death. How can you along with your classmates contribute in this noble cause ? State the objectives of organising such campaigns in schools.

- 21 a) Why do we classify elements ? 5
b) What were the two criteria used by Mendeleev in creating his periodic table?
c) In Mendeleev's periodic table, why was there no mention of noble gasses like helium, neon and argon?
d) Why did Mendeleev leave some gaps in his periodic table?
- 22 (i) Rohit claims to have obtained an image twice the size of object with a concave lens. Is he correct? Give reason for your answer. 5
(ii) Where should an object be placed in case of a convex lens to form an image of same size as of the object? Show with the help of ray diagram the position and the nature of the image formed.
(iii) With the help of ray diagram, illustrate the change in position, nature and size of the image formed if the convex lens in case of (ii) is replaced by concave lens of same focal length.

OR

An extended object is placed perpendicular to the principal axis of a concave mirror. Draw neat diagrams to show the image formation in the following cases -

- (a) The object is between $2f$ and infinity.
(b) The object is at $2f$.
(c) The object is between f and $2f$.
- 23 (a) State two characteristics which distinguish between real and virtual images. 5
(b) The magnification produced by a mirror is 6. What does this indicate?
(c) What is Lateral Displacement? State two factors on which it depends.

OR

(a) 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 $3 \times 10^8 \text{ ms}^{-1}$.

(b) Draw ray diagrams to show the formation of virtual image in case of the following mirror

(i) concave mirror

(ii) convex mirror

(c) How can concave mirror help in harnessing Sun's energy?

- 24**
- a. Define homologous series of organic compounds. Mention any two characteristics of homologous series. 3+2
 - b. Name the compound formed on heating ethanol at 443k with excess of conc. H_2SO_4 .
 - c. Describe a chemical test to distinguish between ethanol and ethanoic acid.

OR

- a. Explain the cleansing action of soap
- b. Distinguish between esterification and saponification reactions of organic compounds .

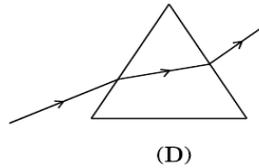
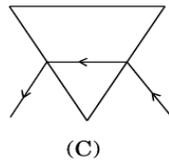
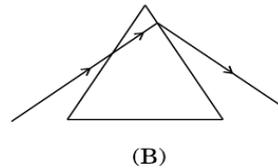
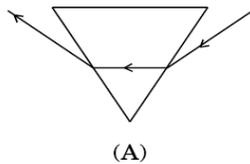
Section -B

- 25** When a stopper of a bottle containing a colourless liquid was removed, the bottle gave out a smell like that of vinegar. The liquid in the bottle could be 1
- a) Hydrochloric acid solution
 - b) sodium hydroxide solution
 - c) Acetic acid
 - d) saturated sodium bicarbonate
- 26** Which of the following reagents gives brisk effervescence with Ethanoic Acid? 1
- (a) Calcium Hydroxide
 - (b) Sodium Chloride
 - (c) Sodium Bicarbonate
 - (d) Ammonium Chloride
- 27** Wings of insects ,birds and bats are examples of 1
- (a) homologous organs
 - (b) analogous organs
 - (c) both
 - (d) none of these
- 28** A convex lens forms a virtual image when an object is placed at a 1

distance of 20cm from it. The focal length

(a) $f = 40$ cm (b) $f = 20$ cm (c) $f > 20$ cm (d) $f < 20$ cm

- 29** While determining the focal length of a convex lens, you try to focus the image of a distant object formed by the lens on the screen. The image formed on the screen, as compared to the object, should be
(A) erect and highly diminished
(B) erect and enlarged
(C) inverted and enlarged
(D) inverted and highly diminished
- 30** In which of the following four diagrams is the correct path of a ray of light passing through a glass prism shown ?



- 31** A teacher held a pencil close to a spherical mirror and asked four students A, B, C, D to identify the nature with the help of image that formed in the mirror. Image was erect and enlarged. The students identified it the mirror as
a. Convex in nature.
b. Concave in nature.
c. plane mirror
d. plane at the center and concave from edges

Correct identification was done by

(a) a (b) b (c) c (d) d

- 32** Which of the following reproduces by spore formation? 1
(a) Rhizopus (b) Yeast (c) Amoeba (d) None of these.
- 33** Which of the following contains seed with one cotyledon? 1

- a) Maize seed
b) Gram seed
c) Mustard seed
d) Both (a) and (c)
- 34 A compound `X` with molecular formula C_2H_4 burns with a sooty flame. It decolourise bromine water. Identify `X`. 2
- 35 A student obtained a sharp image of a lighted candle on a screen using a convex lens. Now he wants to focus a distant lamp on a far away electric pole. In which direction should the lens be move for this purpose with respect to the screen, to get a sharp image on the screen? Justify your answer. 2
- 36 a. How does Hydra reproduces? 2
b. What is the plant body of a Rhizopus known as?