

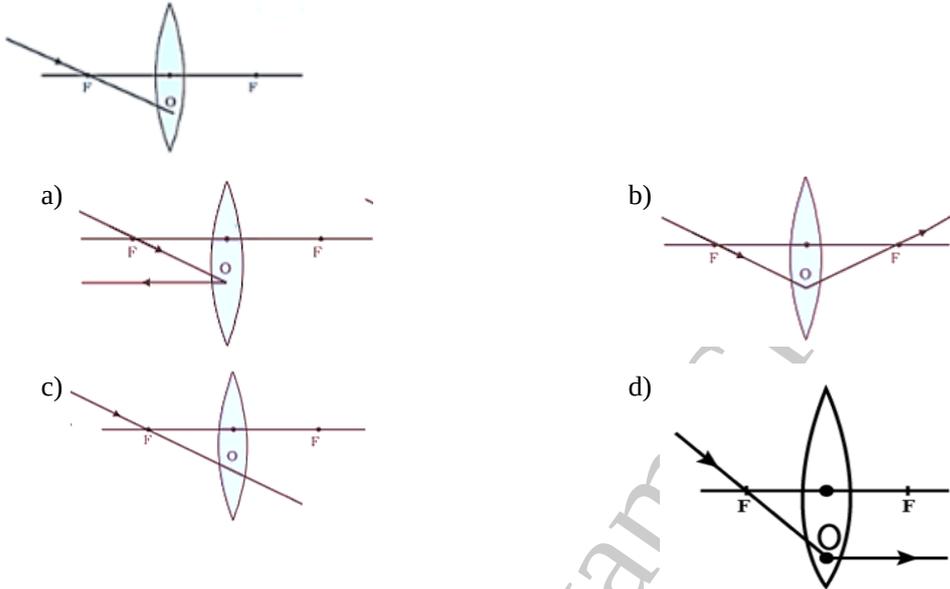


progeny that have round, yellow (RrYy) seeds. When F<sub>1</sub> plants are selfed, the F<sub>2</sub> progeny will have new combination of characters. Choose the new combination from the following

- i. Round, yellow
- ii. Round, green
- iii. Wrinkled, yellow
- iv. Wrinkled, green

- a) (i) and (iv)
- b) (i) and (iii)
- c) (ii) and (iii)
- d) (i) and (ii)

5. Which of the following ray diagrams is correct for the ray of light incident on a lens shown in Fig.? [1]



6. Find the correct statement: [1]

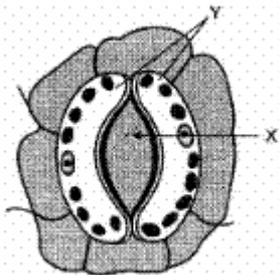
- A. Plant raised by vegetative propagation can bear flowers and traits earlier than those produced from seeds.
- B. Plants grown using tissue culture technique are highly prone to diseases.
- C. A plant grown by vegetative propagation is not prone to diseases.

- a) (B)
- b) (C)
- c) (A)
- d) All of these

7. The focal length of a concave mirror whose radius of curvature is 32cm: [1]

- a) None of these
- b) 32 cm
- c) 12 cm
- d) 16 cm

8. Four students, A, B, C and D, make the records given below, for the parts marked 'X' and 'Y' in this diagram. [1]



Student	X	Y



(i) Ionic bond	(a) NH <sub>3</sub>
(ii) Polar covalent bond	(b) C <sub>60</sub>
(iii) Non-polar bond	(c) N <sub>2</sub>
(iv) Fullerene	(d) NaCl

a) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)                      b) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a)

c) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c)                      d) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)

15. The formulae of two organic acids X and Y are C<sub>10</sub>H<sub>21</sub>COOH and C<sub>19</sub>H<sub>39</sub>COOH. Which of them exists in the liquid state at room temperature? [1]

a) Neither X and Y                      b) Both X and Y

c) Y                      d) X

16. The taste and smell of food changes when kept for a long time in open. It is called [1]

a) Rancidity                      b) Corrosion

c) Oxidation                      d) Reduction

17. **Assertion (A):** pH of ammonium chloride solution is in acidic range. [1]

**Reason (R):** Solution of a salt of weak base and strong acid is acidic.

a) Both A and R are true and R is the correct explanation of A.                      b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.                      d) A is false but R is true.

18. **Assertion (A):** When area of the conductor is halved then the resistance of the material gets doubled when length is kept constant. [1]

**Reason (R):** Because resistance is inversely proportional to the area of a cross-section of the material.

a) Both A and R are true and R is the correct explanation of A.                      b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.                      d) A is false but R is true.

19. **Assertion (A):** Lungs always contain a residual volume of air. [1]

**Reason (R):** It provides sufficient time for oxygen to be absorbed and for carbon dioxide to be released.

a) Both A and R are true and R is the correct explanation of A.                      b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.                      d) A is false but R is true.

20. **Assertion (A):** When a piece of copper metal is added to dilute sulphuric acid, the solution turns blue. [1]

**Reason (R):** Copper reacts with dilute sulphuric acid to form copper (II) sulphate solution.

a) Both A and R are true and R is the correct explanation of A.                      b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.                      d) A is false but R is true.

### Section B

21. What is astigmatism ? How is it corrected ? [2]

OR

What is the colour of an emergent light when white light is passed through a colloidal solution of sulphur? Explain.

22. DDT was sprayed in minute amount on food plants but was detected in high concentration in man? How did it happen? Explain. [2]
23. An object is placed at a distance of 12 cm in front of a concave mirror. It forms a real image four times larger than the object. Calculate the distance of the image from the mirror [2]
24. Draw Human Heart and label its parts. [2]
25. Name the gas evolved when dilute HCl reacts with sodium hydrogen carbonate. How is it recognised? [2]
26. With the help of an example, explain the process of hydrogenation. Mention the essential condition for the reaction and state the change in physical property with the formation of the product. [2]

**Section C**

27. P, Q and R are 3 elements which undergo chemical reactions according to the following equations: [3]
- a.  $P_2O_3 + 2Q \rightarrow Q_2O_3 + 2P$
- b.  $3RSO_4 + 2Q \rightarrow Q_2(SO_4)_3 + 3R$
- c.  $3RO + 2P \rightarrow P_2O_3 + 3R$

Answer the following questions:

- i. Which element is most reactive?
- ii. Which element is least reactive?
- iii. State the type of reaction listed above.
28. Depict diagrammatically a food web in any ecosystem. How many food chains are there in that food web? [3]
29. i. What should be the position of the object when a concave mirror is to be used [3]
- a. as a shaving mirror and
- b. in torches producing parallel beam of light?
- ii. A man standing in front of a mirror, finds his image having a very small head and legs of normal size. What type of mirrors are used in designing such a mirror?

OR

What should be the position of an object with respect to focus of a convex lens of focal length 20cm, so that its real and magnified image is obtained?

30. Observe the following table carefully and match the components of part I with part II of the table. Write them in complete sentences. [3]

Part I	Part II
Unicellular organism	Transpiration
Human beings	Diffusion
Plants	Urination

31. A student sitting at the back of the classroom cannot read clearly the letters written on the backboard. What advice will a doctor give to her? [3]
32. Fertilization is possible if copulation has taken place during middle of menstrual cycle. Give reason. [3]

OR

Answer the following:

- i. With the help of a diagram demonstrate the process of regeneration as seen in Planaria?

- ii. Which type of cells are used by such multicellular organisms to regenerate?
33. Find the direction of magnetic field due to a current carrying circular coil held: [3]
- Vertically in North-South plane and an observer looking it from East sees the current to flow in anti-clockwise direction.
  - Vertically in East-West plane and an observer looking it from South sees the current to flow in anti-clockwise direction.
  - Horizontally and an observer looking at it from below and see the current flowing in clockwise direction.

#### Section D

34. How is plaster of Paris prepared ? Why is temperature control necessary during its preparation ? How does it react with water ? [5]

OR

Discuss the role of pH in (a) digestive system (b) causes of tooth decay.

35. List some functions of the human brain. [5]

OR

With the help of labelled diagram explain the general scheme to illustrate how nervous impulses travel in the body?

36. What precaution should be taken to avoid the overloading of domestic electric circuit ? [5]

#### Section E

37. **Read the text carefully and answer the questions:** [4]

Pea plants can have smooth seeds or wrinkled seeds. One of the phenotypes is completely dominant over the other. A farmer decides to pollinate one flower of a plant with smooth seeds using pollen from a plant with wrinkled seeds. The resulting pea pod has all smooth seeds.

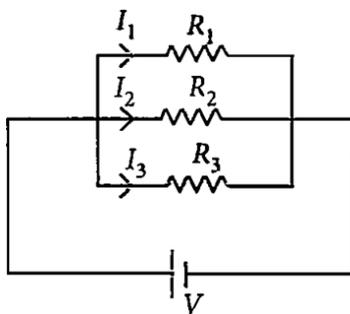
- Which crosses will give smooth and wrinkled seeds in the same proportion?
- Which cross can be used to determine the genotype of a plant with a dominant phenotype?

OR

On the crossing of two heterozygous smooth seeded plants ( $Rr$ ), a total of 1000 plants were obtained in  $F_1$  generation. What will be the respective number of smooth and wrinkled seeds obtained in  $F_1$  generation?

38. **Read the text carefully and answer the questions:** [4]

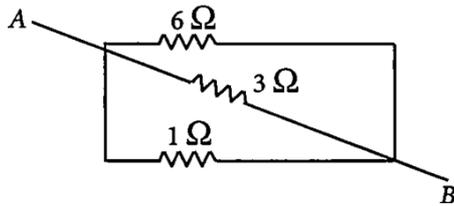
If two or more resistances are connected in such a way that the same potential difference gets applied to each of them, then they are said to be connected in parallel.



The current flowing through the two resistances in parallel is, however, not the same. When we have two or more resistances joined in parallel to one another, then the same current gets additional paths to flow and the overall resistance decreases.

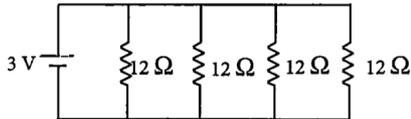
- Three resistances,  $2\ \Omega$ ,  $6\ \Omega$  and  $8\ \Omega$  are connected in parallel, then what will be the equivalent resistance?
- A wire of resistance  $12\ \Omega$  is cut into three equal pieces and then twisted their ends together, then what will be the equivalent resistance?

- (iii) Three resistances are connected as shown. Calculate the equivalent resistance between A and B?



OR

Find the current in each resistance.



39. Read the text carefully and answer the questions:

[4]

When the fats and oil present in the food material get oxidized by the oxygen (of air), their oxidation products have unpleasant smells and tastes. Due to this taste of food material containing fats and oil change and become very unpleasant. The condition produced by aerial oxidation of fats and oils in food marked by unpleasant smell and taste is called rancidity. Rancidity spoils the food material prepared in the fats and oils which have been kept for a considerable time and makes them unfit for eating.

The development of rancidity in food can be prevented in the following ways-

- i. Rancidity can be prevented by adding an antioxidant to foods containing fats and oils.
- ii. Rancidity can be prevented by packaging fat and oil-containing food in Nitrogen gas.
- iii. Rancidity can be prevented by keeping food in a refrigerator.

- (i) What do you understand by oxidation?
- (ii) How does the food become rancid?
- (iii) How can we prevent the rancidity of food?

OR

Which type of food material gets spoiled by the phenomenon of rancidity?

**Join our Telegram Group: <https://t.me/priyamsir>**  
**For solutions of this paper click here or go to this link**  
**<https://cbsestudymaterial.myinstamojo.com/product/3633149/science-special-sam>**  
**To buy MCQ question bank for Chemistry click here**  
**To buy MCQ question bank for Biology click here**  
**To buy MCQ question bank for Physics click here**  
**For more sample papers of science and other subjects click here**

**TO BUY MCQs QUESTION BANK FOR FULL SCIENCE CLICK HERE**