Science Class X

Mock Paper 1 (2026)

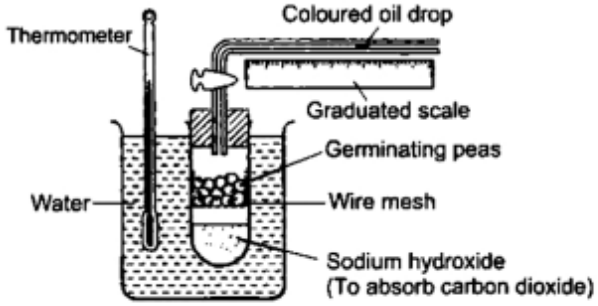
Time Allowed: 3 hours **Maximum Marks: 80**

General Instructions:

1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

Section A

1. Study the given experimental set-up. **[1]**



By measuring the movement of the oil drop in the apparatus, what can be investigated?

a) Carbon dioxide is released during germination
b) Water is produced during germination
c) Heat is released during germination
d) Oxygen is used during germination

2. How are the two strands in a DNA molecule held together? **[1]**

a) Phosphate band
b) Ionic bond
c) Covalent bond
d) Hydrogen bond

3. What will happen if deer is missing in the given food chain? Grass → Deer → Tiger. **[1]**

a) The population of grass will decrease.
b) Tiger will start eating grass.
c) The population of tiger will decreases and the population of grass will increase.
d) The population of tiger will increase.

4. Match the following with correct response. **[1]**

Column A	Column B
(i) The response of a plant to light	(a) Phototropism
(ii) The response of a plant to gravity	(b) Hydrotropism
(iii) The response of a plant to water	(c) Geotropism

(iv) The response of a plant to chemicals	(d) Chemotropism

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

5. Flow of energy in an ecosystem is always: **[1]**

a) No specific direction
b) Multidirectional
c) Bidirectional
d) Unidirectional

6. Which of the following statement(s) is (are) correct? **[1]**

i. Pyruvate can be converted into ethanol and carbon dioxide by yeast
ii. Fermentation takes place in aerobic bacteria
iii. Fermentation takes place in mitochondria
iv. Fermentation is a form of anaerobic respiration

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

7. Which neuron carries impulses from receptor to brain? **[1]**

a) Motor neuron
b) Sensory neuron
c) Both Sensory neuron and Motor neuron
d) Neither Sensory neuron and Motor neuron

8. **Assertion (A) :** Non flowering plants cannot reproduce sexually. **[1]**
Reason (R) : Flower is only reproductive part of the plant that can produce gametes.

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.

9. **Assertion (A):** A food chain can have maximum of three trophic levels. **[1]**
Reason (R): Energy available at each trophic level keeps on decreasing as we move higher up the food chain.

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.

10. i. Write one difference between asexual and sexual modes of reproduction. **[2]**
ii. Which species is likely to have better chances of survival, the one reproducing asexually or the one reproducing sexually? Justify your answer.

11. What would happen, if all the microorganisms are removed from the environment? **[2]**

OR

a. State one important function of ozone layer at the higher level in the atmosphere.
b. How is ozone formed?
c. It has been observed that ozone layer is getting depleted. Name the compound responsible for ozone depletion.

12. How is the movement of leaves of the sensitive plant different from the movement of a shoot towards light? **[2]**

13. A red-eyed individual is crossed with a white-eyed individual to produce F_1 progeny with red eyes. When F_1 individuals are intercrossed, F_2 progeny is formed with both red as well as white-eyed individuals. **[3]**

a. How is the dominant trait identified?

b. What are recessive traits?

c. If 12 individuals are produced in F_2 generation, then how many white-eyed individuals would be obtained?

Calculate the ratio of red-eyed individuals to white-eyed individuals.

14. "If there were no algae there would be no fish in the sea." Comment. **[3]**

15. **Read the following text carefully and answer the questions that follow:** **[4]**

A purebred pea plant with smooth seeds (dominated characteristic) was crossed with a purebred pea plant with wrinkled seeds (recessive characteristic). The F_1 generation was self-pollinated to give rise to the F_2 generation.

i. What will be the genotypic ratio of the given F_2 generation? (1)

ii. What is the expected observation of the F_2 generation of plants? (1)

iii. If a genotype consists of different types of alleles, what is it called? (2)

OR

What is the alternative form of the gene? (2)

16. a. Name the two types of pollination and differentiate between them. **[5]**

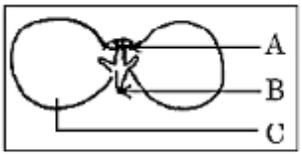
b. Explain the post fertilization changes that occur in the ovary of a flower.

c. Given below is a diagram of a germinating seed. Label the parts that

i. gives rise to future shoot.

ii. gives rise to future root system.

iii. stores food.



OR

a. Why is the use of iodised salt advisable? Name the disease caused due to deficiency of iodine in our diet and state its one symptom.

b. How do nerve impulses travel in the body? Explain.

Section B

17. Which of the given statement is true about Sodium carbonate: **[1]**

A. It is a transparent crystalline white solid

B. It has the chemical formula $Na_2CO_3.10H_2O$

C. It gives acidic solution when dissolved in water

D. It is prepared by reacting with chlorine

a) C and D b) A and C

c) A and B d) All of these

18. Which of the given statement is correct or wrong: **[1]**

Statement A: Oxyacetylene flame is used for welding purposes.

Statement B: Ethyne reacts with HCl in the presence of $HgCl_2$ to form vinyl chloride.

a) Neither statement A nor statement B is true. b) Both the statements A and B are true.

c) Statement B is true; Statement A is false. d) Statement A is true; Statement B is false.

19. What happens when ammonia reacts with hydrogen chloride? $NH_3 + HCl \rightarrow ?$ **[1]**

a) Both H_2 and NH_4Cl

b) Cl_2 gas is evolved.

c) H_2 gas is evolved

d) NH_4Cl is formed

20. Match the following with the correct response: **[1]**

Column A	Column B
(i) Addition reaction	(a) Hydrogenation
(ii) Substitution reaction	(b) Methanol
(iii) Denaturation	(c) Carbon tetrachloride
(iv) Esterification	(d) Ethyl ethanoate

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

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

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

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

21. Aqueous solutions of zinc sulphate and iron sulphate were taken in test tubes I and II by four students A, B, C and D. Metal pieces of iron and zinc were dropped in the two solutions and observations made after several hours were recorded in the form of table as given below: **[1]**

Student	Metal	Solution	Colour change of solution	Deposit/Coating obtained
A	Fe	$ZnSO_4$	Turned green	Silvery grey coating
	Zn	$FeSO_4$	No change	No change
B	Fe	$ZnSO_4$	No change	Black deposit
	Zn	$FeSO_4$	Colour faded	Grey coating
C	Fe	$ZnSO_4$	No change	No change
	Zn	$FeSO_4$	Turned colourless	Black deposit
D	Fe	$ZnSO_4$	No change	Grey deposit
	Zn	$FeSO_4$	No change	Black deposit

The correct reporting has been made in observations:

a) Student B

b) Student A

c) Student C

d) Student D

22. A hydrocarbon with molecular formula C_4H_{10} has: **[1]**

a) 10 covalent bonds

b) 7 covalent bonds

c) 6 covalent bonds

d) 13 covalent bonds

23. Washing soda is a **[1]**

a) neutralized salt

b) acidic salt

c) basic salt

d) amphoteric salt

24. **Assertion (A):** Tap water conducts electricity but distill water does not conducts electricity. **[1]**

Reason (R): Tap water conducts electricity as it contains ions whereas distilled water does not contain ions.

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.

25. State the observations you would make on adding ammonium hydroxide to aqueous solution of (i) Ferrous sulphate (ii) Aluminium chloride? **[2]**

26. i. Why are the chips packets puffed when we buy them from market? **[3]**

ii. Paint is applied on articles made up of iron, why?

OR

What happens when dilute hydrochloric acid is added to iron filings?

27. A zinc plate was kept in a glass container having copper sulphate solution. On examining it was found that the blue colour of the solution is fading slowly. After a few days when the zinc plate was taken out of the solution, a number of small holes were noticed in it. State the reason and give chemical equation of the reaction involved. **[3]**

28. **Read the following text carefully and answer the questions that follow:** **[4]**

Redox reactions are those reactions in which oxidation and reduction occur simultaneously. A redox reaction is made up of two half reactions. In the first half reaction, oxidation takes place and in second half reaction, reduction occurs. Oxidation is a process in which a substance loses electrons and in reduction, a substance gains electrons. The substance which gains electrons is reduced and acts as an oxidising agent. On the other hand, a substance which loses electrons is oxidised and acts as a reducing agent.

i. Illustrate where oxidation and reduction occurs together with an example? (1)

ii. What do you mean by oxidising agent and reducing agent? (1)

iii. For the given reaction, identify the oxidation and reduction parts. (2)

$ZnO + CO \longrightarrow Zn + CO_2$

OR

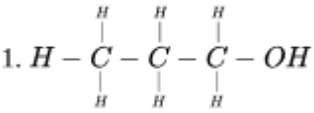
In the following reaction, which substance is reduced? (2)

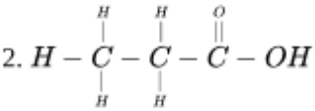
$PbS + 4H_2O_2 \longrightarrow PbSO_4 + 4H_2O$

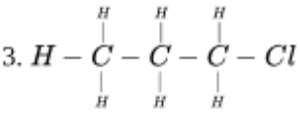
29. What is the difference between soaps and detergents? State in brief the cleansing action of soaps in removing an oily spot from a fabric. Why are soaps not very effective when a fabric is washed in hard water? How is this problem resolved? **[5]**

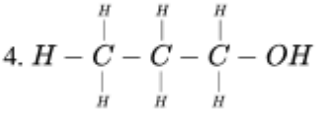
OR

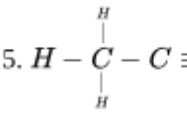
Name the following compounds.

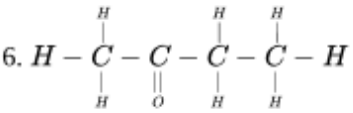
1. 

2. 

3. 

4. 

5. 

6. 

Section C

30. Which of the following statements is true? **[1]**

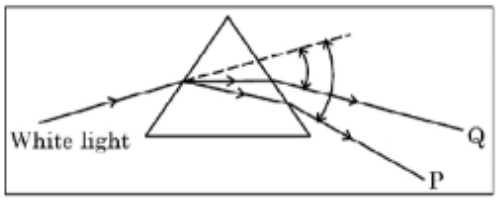
a) A concave lens has 4 dioptre power having a focal length 0.25 m

b) A concave lens has-8 dioptre power having a focal length of 0.25 m

c) A convex lens has –4 dioptre power having a focal length 0.25 m

d) A convex lens has 4 dioptre power having a focal length 0.25 m

31. In the following diagram showing dispersion of white light by a glass prism, the colours **P** and **Q** respectively are- **[1]**



a) Violet and Red

b) Orange and Green

c) Red and Blue

d) Red and Violet

32. **Assertion (A):** Two bar magnets attract when they are brought near to each other with the same pole. **[1]**
Reason (R): Unlike poles will attract each other.

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.

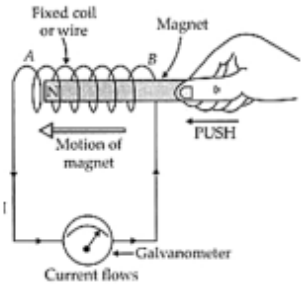
33. Name the factors on which brightness of image in a camera depends and how? **[2]**

34. A potential difference of 220 V is applied across a resistance of 440 Ω in an electric ion. **[2]**
(i) Find the current.
(ii) Heat energy produced is 30s.

OR

Calculate the cost of seeing 2 movies on colour T.V. daily for the month of September.
Given wattage of colour T.V. = 60 W, duration each movie is 2 hours 30 min and 1kWh costs Rs. 4

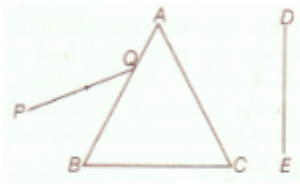
35. A current-carrying wire produces a magnetic field around it. The phenomena in which an electromotive force and current (if the conductor is in the form of a closed circuit) is induced by changing magnetic field (or by passing magnetic field lines) through it is called electromagnetic induction. **[3]**



i. What is the condition of electromagnetic induction?

ii. An induced emf is produced when a magnet is plunged into a coil. The magnitude of induced emf does not depend?

36. A narrow beam PQ of white light is passing through a glass prism ABC as shown in the diagram. **[3]**



Trace it on your answer sheet and show the path of the emergent beam as observed on the screen DE.

i. Write the name and cause of the phenomenon observed.

ii. Where else in nature is this phenomenon observed?

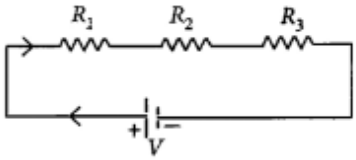
iii. Based on this observation, state the conclusion which can be draw about the constituents of white light.

37. i. A current through a horizontal power line flows in the east to west direction. What is the direction of the magnetic field at a point directly below it and at a point directly above it? **[3]**

ii. List two methods of producing magnetic fields.

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

Two or more resistances are connected in series or in parallel or both, depending upon whether we want to increase or decrease the circuit resistance.

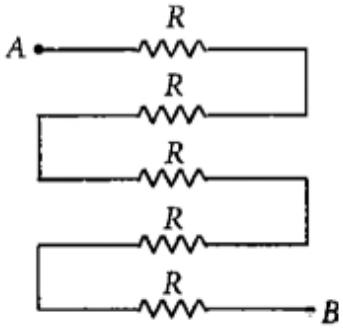


The two or more resistances are said to be connected in series if the current flowing through each resistor is the same.

i. When the three resistors each of resistance R ohm are connected in series then what will be the equivalent resistance? (1)

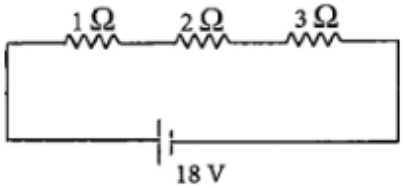
ii. There is a wire of length 20 cm and having resistance 20 Ω cut into 4 equal pieces and then joined in series. What is equivalent resistance? (1)

iii. In the following circuit, find the equivalent resistance between A and B (R = 2Ω) (2)



OR

In the given circuit, what is the current in each resistor? (2)



39. a. A 5 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 30 cm. Find the position, nature and size of the image formed. **[5]**

b. Draw a labelled ray diagram showing object distance, image distance and focal length in the above case.

OR

A concave lens of focal length 60 cm is used to form an image of an object of length 9 cm kept at a distance of 30 cm

from it. Use lens formula to determine the nature, position and length of the image formed. Also draw labelled ray diagram to show the image formation in the above case.