

Class 10th Science Sample Paper 3 Full Syllabus PYQs 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**Question 1 – 9 (1 marks), Question 10 – 12 (2 marks), Question 13 – 14 (3 marks), Question 15 (4 marks), Question 16 (5 marks)**

1. An organism which breaks down the food material outside the body and then absorbs it is
a) a bacteria, Rhizobium b) a plant parasite, Cuscuta c) an animal parasite, Tapeworm d) a fungi, Rhizopus
2. A cross between pea plant with white flowers (vv) and pea plant with violet flowers (VV) resulted in F₂ progeny in which ratio of violet (VV) and white (vv) flowers will be:
a) 3 : 1 b) 1 : 1 c) 2 : 1 d) 1 : 3
3. A food chain will be more advantageous in terms of energy if it has
a) 3 trophic levels b) 2 trophic levels c) 5 trophic levels d) 4 trophic levels
4. Match the following with correct response.

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

5. Some wastes are given below:

1. Garden waste
2. Ball point pen refills
3. Empty medicine bottles made of glass
4. Peels of fruits and vegetables
5. Old cotton shirt

The non - biodegradable wastes among these are:

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

6. Select from the following the correct statement about tropic movement in plants:

- a) It is due to stimulus of touch and temperature.
- b) It does not depend upon the direction of stimulus received.
- c) It is observed only in roots and not in stems.
- d) It is a growth related movement.

7. Which of the following statements is not true about a bud in Hydra ?

- a) It forms due to repeated cell division at one specific site.
- b) It detaches from the parent body as soon as it is produced.
- c) It is an outgrowth.
- d) It becomes a new independent individual.

8. Assertion (A): Testes are located outside the abdominal cavity in the scrotum.**Reason (R):** Because sperm formation requires lower temperature than the normal body temperature.

- 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.

Column A	Column B
(i) Junction between neuron	(a) Thermoreceptors
(ii) The largest cell in the human body	(b) Neuron
(iii) Sense organs for smell	(c) Synapse
(iv) Sense organs for touch	(d) Olfactory receptors

9. Assertion (A): Green plants trap only 1% of the energy of sunlight that falls on their leaves.

Reason (R): All green plants are the producers in a 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. Name the part/organ of the human male reproductive system

- a. which is a common passage for both sperm as well as urine.
- b. where formation of germ cells or sperms takes place.
- c. which is blocked to prevent the transfer of sperm.
- d. which provides nutrition to the sperms.

11. How is ozone layer formed? State its importance to all life forms on earth? Why the amount of ozone in the atmosphere dropped sharply in the 1980s?

OR

Define a food chain. Design a terrestrial food chain of four trophic levels. If a pollutant enters at the producer level, the organisms of which trophic level will have the maximum concentration of the pollutant in their bodies? What is this phenomenon called?

12. Name the phenomenon occurring in plants which are under the control of gravity, water and chemicals with one example each that shows the movement involved.

13. (a) Name the two types of gametes produced by men.

(b) Does a male child inherit X chromosome from his father? Justify.

(c) How many types of gametes are produced by a human female?

14. 1. Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms?

Explain.

2. Draw a diagram of human respiratory system and label - pharynx, trachea, lungs, diaphragm and alveolar sac on it.

15. Read the following text carefully and answer the questions that follow:

The mechanism by which the sex of an individual is determined is called sex - determination. In human beings, sex of a newborn is genetically determined, whereas in some others it is not. There are 46 (23 pairs) chromosomes in human beings. Out of these, 44 (22 pairs) control the body characters and 2 (one pair) are known as sex chromosomes. The sex chromosomes are of two types - X chromosome and Y chromosome. At the time of fertilisation, depending upon which type of male gamete fuses with the female gamete, the sex of the newborn child is decided.

(a) If the gametes always have half the number of chromosomes, then how is the original number of chromosomes restored in the organism? (1)

(b) Why is a pair of sex chromosomes in human beings called a mismatched pair in terms of type and size? (1)

(c) Name two animals whose sex is not genetically determined. Explain the process of their sex determination. (2)

OR

With the help of a flowchart only, show how sex is genetically determined in human beings. (2)

16. What is contraception? List its four different methods. State four reasons for adopting contraceptive methods.

OR

1. Name the hormone secreted by (i) Pituitary, and (ii) Thyroid stating one main function of each. Name the disorder a person is likely to suffer from due to the deficiency of the above mentioned hormones.

2. How is the timing and amount of hormone released regulated? Explain with an example.

Section B

Question 17 – 24 (1 marks), Question 25 (2 marks), Question 26 – 27 (3 marks), Question 28 (4 marks), Question 29 (5 marks)

17. Which of the following statements are correct?

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- A. Chemical name of bleaching powder is calcium oxychloride.
B. Bleaching powder is used for sterilization of drinking water.
C. Bleaching powder is alkaline in nature hence it is used as antacid.
D. Bleaching powder is manufactured by Hasen Cleverprocess.

a) All of these b) A, B and D c) A and C d) B and C

18. Which of the given statement is correct or wrong:

Statement A: Detergent with less branching in the molecule is degraded more easily than branched - chain detergents.

Statement B: Soaps are 100% biodegradable.

- a) Both the statements A and B are true. b) Neither statement A nor statement B is true.
c) Statement B is true; Statement A is false. d) Statement A is true; Statement B is false.

19. A metal X is used in thermite process. When X is burnt in air it gives an amphoteric oxide Y. X and Y are respectively:

- a) Fe and Fe_3O_4 b) Fe and Fe_2O_3 c) Al and Al_2O_3 d) Al and Al_3O_4

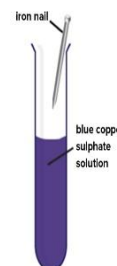
20. Match the following with the correct response:

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

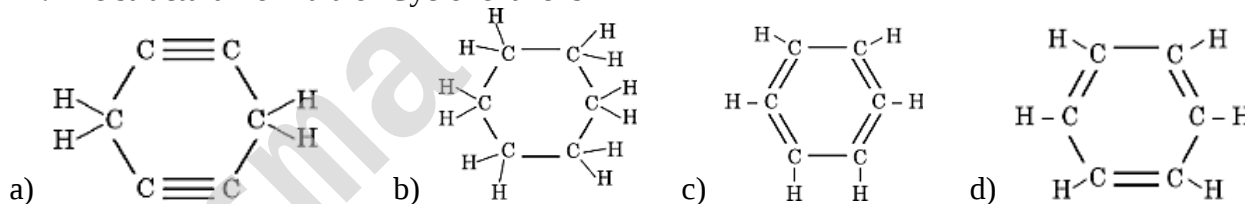
- a) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) b) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)
c) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a) d) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)

21. An iron nail is suspended in CuSO_4 solution and kept for a while. The solution:

- a) Turns green and a coating will be formed on the nail.
b) Remains blue and no coating will be formed on the nail.
c) Remains blue and a coating is found on the nail
d) Turns green and no coating will be formed on the nail.



22. The structural formula of Cyclohexane is



23. Select the correct option from the following:

Salt	Parent acid	Parent base	Nature of salt
(a) Sodium acetate	CH_3COOH	NaOH	Neutral
(b) Sodium carbonate	H_2CO_3	NaOH	Basic
(c) Sodium chloride	HCl	NaOH	Acidic
(d) Sodium nitrate	HNO_3	NaOH	Acidic

- a) Option (c) b) Option (b) c) Option (a) d) Option (d)

24. **Assertion (A):** $\text{pH} = 7$ signifies pure water.

Reason (R): At this pH , $[\text{H}^+] = [\text{OH}^-] = 10^{-7}$

- 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. A student working in the laboratory added some water to a syrupy liquid taken in a tube. The tube immediately cracked and the liquid which escaped out of it, produced blisters on the skin of the student. What actually happened?

26. Identify the type of reactions taking place in each of the following cases and write the balanced chemical equation for the reactions.

1. Zinc reacts with silver nitrate to produce zinc nitrate and silver.
2. Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide.

OR

Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions.

27. (i) Name a metal for each case:

- (a) It does not react with cold as well as hot water but reacts with steam.
- (b) It does not react with any physical state of water.

(ii) When calcium metal is added to water the gas evolved does not catch fire but the same gas evolved on adding sodium metal to water catches fire. Why is it so?

28. Read the following text carefully and answer the questions that follow:

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.
- a. What do you understand by oxidation? (1)
 - b. How does the food become rancid? (1)
 - c. How can we prevent the rancidity of food? (2)

OR

Which type of food material gets spoiled by the phenomenon of rancidity? (2)

29. 1. Write the names and structures of (i) an alcohol, and (ii) an aldehyde with four carbon atoms in their molecules.

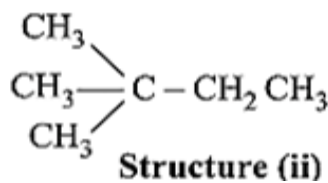
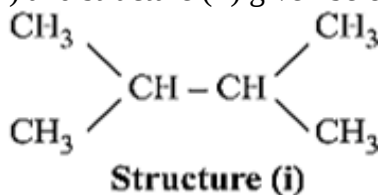
2. List two differences between saturated and unsaturated hydrocarbons

OR

1. Draw the structure of the following compounds:

- (i) Butanoic acid
- (ii) Chloropentane

2. How are structure (i) and structure (ii) given below related to one another? Give reason to justify your answer.



Draw one more possible structure for above case.

3. Differentiate between saturated and unsaturated carbon compounds on the basis of their general formula.

Section C

Question 30 – 32 (1 marks), Question 33 – 34 (2 marks), Question 35 – 37 (3 marks), Question 38 (4 marks), Question 39 (5 marks)

30. Consider the following properties of virtual images:

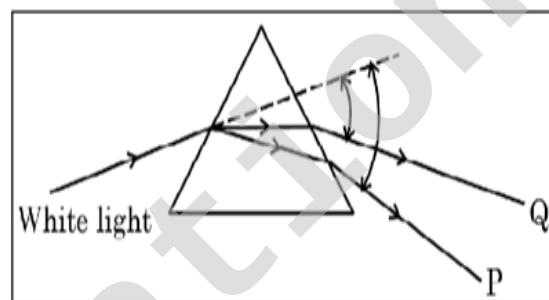
- | | |
|--------------------------------------|---|
| A. cannot be projected on the screen | B. are formed by both concave and convex lens |
| C. are always erect | D. are always inverted |

The correct properties are:

- a) (A), (B) and (D) b) (A) and (B) c) (A) and (D) d) (A), (B) and (C)

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

- a) Violet and Red b) Orange and Green
c) Red and Blue d) Red and Violet



32. Assertion (A): Iron filings are kept near a magnet it gets arranged in a particular fashion.

Reason (R): Magnetic field is a scalar quantity.

- 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?

34. An electric heater rated 1100 W operates at 220 V. Calculate (i) its resistance, and (ii) the current drawn by it.
OR

1. State the relation correlating the electric current flowing in a conductor and the voltage applied across it. Also draw a graph to show this relationship.
2. Find the resistance of a conductor if the electric current flowing through it is 0.35 A when the potential difference across it is 1.4 V.

35. Find the direction of magnetic field due to a current carrying circular coil held:

1. Vertically in North - South plane and an observer looking it from East sees the current to flow in anti - clockwise direction.
2. Vertically in East - West plane and an observer looking it from South sees the current to flow in anti - clockwise direction.
3. Horizontally and an observer looking at it from below and see the current flowing in clockwise direction.

36. Why do we observe difference in colours of the Sun during sunrise, sunset and noon?

37. What is a Solenoid? Draw the pattern of the magnetic field lines around a current carrying solenoid. Mark on the pattern the region where the magnetic field is uniform.

38. Read the following text carefully and answer the questions that follow:

The electrical energy consumed by an electrical appliance is given by the product of its power rating and the time for which it is used. The SI unit of electrical energy is Joule. Actually, Joule represents a very small quantity of energy and therefore it is inconvenient to use where a large quantity of energy is involved. So for commercial purposes, we use a bigger unit of electrical energy which is called kilowatt - hour. 1 kilowatt - hour is equal to 3.6×10^6 joules of electrical energy.

1. The energy dissipated by the heater is E. When the time of operating the heater is doubled, what would be the energy dissipated? (1)
2. The power of a lamp is 60 W. What will be the energy consumed in 1 minute? (1)
3. The electrical refrigerator rated 400 W operates 8 hours a day. The cost of electrical energy is ₹ 5 per kWh. Find the cost of running the refrigerator for one day. (2)

OR

Calculate the energy transformed by a 5 A current flowing through a resistor of $2\ \Omega$ for 30 minutes. (2)

39. (1) Define power of a lens and write its SI unit. Name the type of lens whose power is negative.
(2) A convex lens forms a real and inverted image of finite size at a distance of 50 cm from it. Where is the object placed in front of the lens? Give all possible positions of the object stating reason in each case.
(3) Draw labelled ray diagram for any one position of the object mentioned in (b) above.

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.
