

KENDRIYA VIDYALAYA SANGATHAN
LUCKNOW REGION, LUCKNOW
1st PRE-BOARD EXAM: 2022-23
CLASS: X
SUBJECT: SCIENCE

Time Allowed: 3 hours

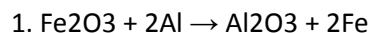
Max. Marks: 80

General Instructions:

- i. This question paper consists of 39 questions in 5 sections.
- ii. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions
- iii. Section A consists of 20 objective type questions carrying 1 mark each.
- iv. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should in the range of 30 to 50 words.
- v. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should in the range of 50 to 80 words.
- vi. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
- vii. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION – A

Select and write one most appropriate option out of the four options given for each of the questions 1 – 20.



The above reaction is an example of a

- (a) combination reaction. (c) double displacement reaction.
(b) decomposition reaction. (d) displacement reaction. 1

2. No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be

- (a) only plane. (c) only concave. (b) only convex.
(d) either plane or convex. 1

3. A solution turns red litmus blue, its pH is likely to be

- (a) 1 (b) 4 (c) 5 (d) 10

OR

Which one of the following types of medicines is used for treating indigestion?

- (a) Antibiotic (b) Analgesic (c) Antacid (d) Antiseptic

1

4. The human eye can focus on objects at different distances by adjusting the focal length of the eye lens. This is due to (a)

- (a) presbyopia. (c) accommodation.
(b) near-sightedness. (d) far-sightedness.

OR

The least distance of distinct vision for a young adult with normal vision is about 1

- (a) 25 m. (b) 2.5 cm. (c) 25 cm. (d) 2.5 m.

5. Food cans are coated with tin and not with zinc because

- (a) zinc is costlier than tin. (c) zinc has a higher melting point than tin.
(b) zinc is more reactive than tin. (d) zinc is less reactive than tin 1

6. An element reacts with oxygen to give a compound with a high melting point. This compound is soluble in water. The element is likely to be

- (a) Calcium (b) Carbon (c) Silicon (d) Iron

7. Ethane, with the molecular formula C_2H_6 has 1
 (a) 6 covalent bonds. (c) 7 covalent bonds.
 (b) 8 covalent bonds. (d) 9 covalent bonds. 1
8. Joule's law of heating states that heat produced in a resistor is
 (a) directly proportional to the square of current for a given resistance.
 (b) directly proportional to resistance for a given current.
 (c) directly proportional to the time for which the current flows through the resistor.
 (d) All the above. 1
9. The autotrophic mode of nutrition requires
 (a) carbon dioxide and water. (c) sunlight.
 (b) chlorophyll. (d) all of the above. 1
10. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in
 (a) cytoplasm. (c) chloroplast.
 (b) mitochondria. (d) nucleus. 1
11. Which of the following correctly describes the magnetic field near a long straight wire?
 (a) The field consists of concentric circles centred on the wire.
 (b) The field consists of straight lines parallel to the wire.
 (c) The field consists of radial lines originating from the wire.
 (d) The field consists of straight lines perpendicular to the wire. 1
12. The gap between two neurons is called a
 (a) dendrite. (c) synapse.
 (b) axon. (d) impulse.

OR

Which of the following is a plant hormone? 1

- (a) Insulin (c) Thyroxin
 (b) Oestrogen (d) Cytokinin.
13. Asexual reproduction takes place through budding in
 (a) amoeba. (c) yeast.
 (b) plasmodium. (d) leishmania. 1
14. The anther contains
 (a) Pollen grains. (c) ovules.
 (b) pistil. (d) sepals. 1
15. A cross between a tall plant (TT) and short pea plant (tt) resulted in progeny that were all tall plants because
 (a) tallness is the dominant trait
 (b) shortness is the dominant trait
 (c) tallness is the recessive trait
 (d) height of pea plant is not governed by gene 'T' or 't' 1
16. Exchange of genetic material takes place in
 (a) vegetative reproduction (c) asexual reproduction
 (b) sexual reproduction (d) budding 1

Q. no 17 to 20 are ASSERTION - REASONING based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A
 (b) Both A and R are true and R is not the correct explanation of A
 (c) A is true but R is false
 (d) A is False but R is true

17. Assertion (A): After white washing the walls, a shiny white finish on the wall is obtained after two to three days.

Reason (R): Calcium oxide reacts with Carbon dioxide to form Calcium Hydrogen Carbonate which gives shiny white finish. 1

18. Assertion (A): A geneticist crossed a pea plant having violet flowers with a pea plant with white flowers, he got all violet flower in the first generation.

Reason(R): White colour genes are not passed into next generation. 1

19.Assertion(A): Double fertilisation is unique in angiosperms.

Reason (R): Triple fusion occurs in asexual reproduction.

OR

Assertion (A): Surgical methods are most effective methods of contraception.

Reason (R): Surgical method blocks gametes transport and hence prevent fertilization. 1

20.Assertion (A): Two bar magnets attract when they are brought near to each other with the same pole.

Reason (R): Unlike poles will attract each other. 1

SECTION – B

Q. no. 21 to 26 are VERY SHORT ANSWER questions.

21.(a) Balance the following chemical equation.



(b) Find the substance oxidised and substance reduced in the reaction.

OR

Which gas is usually liberated when an acid reacts with a metal? Illustrate with an example. How will you test for the presence of this gas? 1

22.Label the parts A, B, C and D in the given figure.1

23. How will an organism be benefitted if it reproduces through spore formation?2

OR

Name two sexually transmitted diseases each caused by bacteria and virus in humans. 2

24.Explain why stars twinkle and planets do not twinkle.

OR

What do you understand by spectrum? Which colour wavelength bends the

(a) Least

(b) Most

2

25. Describe double circulation in human beings. Why is it necessary? 2

26. Define 1 dioptre of power of a lens. Find the power of a concave lens of focal length 2m.

OR

Name the type of mirror used in the following situations:

(a) Solar Furnace

(b) Side / rear – view mirror of a vehicle. 1, 1

SECTION – C

Q.no. 27 to 33 are SHORT ANSWER questions.

27. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of the image. 3

28. Sahil performed an experiment to study the inheritance pattern of genes. He crossed tall pea plants (TT) with short pea plants (tt) and obtained all tall plants in F1 generation.

(a) What will be set of genes present in the F1 generation?

(b) Give reason why only tall plants are observed in F1 progeny.

(c) When F1 plants were self - pollinated, a total of 800 plants were produced. How many of these would be tall, medium height or short plants?

29. (a) State Ohm's Law.

(b)How is an ammeter connected in an electric circuit?

(c)The power of a lamp is 100W. Find the energy consumed by it in 1 minute 1

30. (a) What are plant hormones?

(b) Name the plant hormones responsible for the following:

(i) Growth of stem

(ii) Promotion of cell division

(iii) Inhibition of growth

(iv) Elongation of cells 1

31. (a) How many isomers are possible for the compound with the molecular formula C_4H_8 ?
(b) How will you prove that C_4H_8 and C_5H_{10} are homologues?

OR

A carbon compound 'A' having melting point 156K and boiling point 351K, with molecular formula C_2H_6O is soluble in water in all proportions.

- (a) Identify 'A'.
(b) Give the molecular formulae of any two homologues of 'A'. 3
32. (a) Write chemical name and chemical formula of bleaching powder.
(b) Write a chemical equation for its preparation in the laboratory.
(c) Give two applications of bleaching powder. 3
33. Name the hormones secreted by the following endocrine glands and write one function of each hormone:
Thyroid gland, Pancreas, Adrenal gland

OR

Illustrate with an example that plants show stimulus towards light. 3

SECTION – D

Q.no. 34 to 36 are LONG ANSWER questions.

34. Define pollination. Explain the different types of pollination. List two agents of pollination.

OR

- (a) Identify the given diagram. Label any 4 parts from 1 to 5.
(b) What is the function of Placenta?
(c) Give two changes seen during puberty in male. 5

35.

- (a) What is a solenoid?
(b) Draw the pattern of magnetic field lines of
i. a current carrying solenoid and
ii. a bar magnet.

OR

- (a) What is right hand thumb rule?
(b) Write four properties of magnetic field lines 5
36. A student is sitting on the front bench of the class is unable to read the board. Identify and define the defect he is suffering from. What could be the possible causes? How this defect could be removed? Draw the suitable diagram for defective and corrective eye. 5

SECTION – E

Q.no. 37 to 39 are CASE BASED questions.

37. Metals are lustrous, malleable, ductile and are good conductors of heat and electricity. They are solids at room temperature, except mercury which is a liquid. Metals combine with oxygen to form basic oxides. Different metals have different reactivities with water and dilute acids. Non-metals have properties opposite to that of metals.

Read the above passage carefully and give the answers of the following questions.

- (a) Name the property of metals by which they can be drawn into thin wires.
(b) Write any metal which is not malleable.
(c) Name two metals that have low melting point.

OR

- (c) Why do we keep some metals under kerosene.

38. The figure shown below represents an activity to prove the requirement for photosynthesis. During this activity, two healthy potted plants were kept in the dark for 72 hours. After 72 hours, KOH is kept in the watch glass in setup X and not in setup Y. Both these setups are airtight and have been kept in light for 6 hours. Then iodine test is performed with only from each of the 2 plants X & Y.

Read the above passage carefully and give the answers of the following questions.

(a) The above experimental setup is used to prove essentiality of which of the component requirements of photosynthesis?

(b) What is the function of Potassium hydroxide in the process.

(c) Write the chemical equation involved in the process of photosynthesis.

OR

(c) Write the chemical equation that take place anaerobically in plants. 4

39. Study this table related to material and their resistivity and answer the questions that follow.

- (a) Which material is used in transmission wires?
- (b) Which is the best conducting metal?
- (c) Which of the following is used as a filament in electric bulbs?
 - (i) Nichrome (ii) Tungsten (iii) Manganese (iv) Silver
- (d) What is the range of resistivity in metals, good conductors of electricity?
 - i. 10^{-8} to $10^{-6} \Omega m$
 - ii. 10^{-6} to $10^{-4} \Omega m$
 - iii. 10^{10} to $10^{14} \Omega m$
 - iv. 10^{12} to $10^{14} \Omega m$ 4