

S.A-1 MODEL QUESTION PAPER

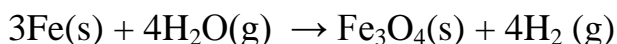
SCIENCE

CLASS : 10

MARKS : 80

Four alternatives are given for each statement. Choose the appropriate one and write with its serial number. 1x8=8

1. Which of the following statements about the given reaction are correct?



- i. Iron metal is getting oxidized
- ii. Water is getting reduced
- iii. Water is acting as reducing agent
- iv. Water is acting as oxidizing agent

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

2. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is

- a) Acidic
- b) Neutral
- b) basic
- d) Corrosive

3. Which one of the following metals do not react with cold as well as hot water?

- a) Sodium
- b) Calcium
- c) Magnesium
- d) Iron

4. Choose the event that does not occur in photosynthesis

- a) Absorption of light energy by chlorophyll
- b) Reduction of carbon dioxide to carbohydrate
- c) Oxidation of carbon to carbon dioxide
- d) Conversion of light energy to chemical energy

5. Choose the incorrect statement about the insulin

- a) It is produced from pancreas
- b) It regulates growth and development of the body
- c) It regulates blood sugar level
- d) Insufficient secretion of insulin will cause diabetes.

6. What is the minimum resistance which can be made using five resistors each of $1/5 \Omega$?

- a) $1/5 \Omega$
- b) $1/25 \Omega$
- c) $1/10 \Omega$
- d) 25Ω

7. Commercial electric motors do not use
- a) An electromagnet to rotate the armature
 - b) Effectively large number of turns of conducting wire in the current carrying coil
 - c) A permanent magnet to rotate the armature
 - d) A soft iron core on which the coil is wound

8. Which of the following limits the number of trophic levels in a food chain?
- a) Decrease in energy at higher trophic levels
 - b) Deficient food supply
 - c) Polluted air
 - d) Water

Answer the following in a word or a phrase

1x8=8

9. What is chemical combination reaction?
10. In an experiment a metal carbonate has been added to an acid and liberated gas has been passed through calcium hydroxide solution. Name the gas liberated if the solution turned white.
11. Name the metal which is in the liquid state at room temperature.
12. Which acid is produced by stomach?
13. State Ohm's law.
14. Name any two devices which work on the principle of Joule's law of heating.
15. Why do we use split rings on making of simple electric motor?
16. What is biomagnifications?

Answer the following questions in two or three sentences.

2x8=16

17. Write the differences between oxidation and reduction.
18. Why is the amount of gas collected in one of the test tube in electrolysis of water double of the amount collected in the other? Name this gas.
19. Draw a neat diagram to show that acid solution in water conducts electricity.
20. Write any two general characters of ionic compounds.
21. Name the part given in the figure. What role does it play in opening and closing of stomata?



22. Write a neat diagram to show the structure of a neuron.
23. Name different methods of inducing current in a conducting coil.
24. Write an example for a food chain and mark the trophic levels.

Answer the following questions.

3x9=27

25. a. What is neutralization reaction? Write its general equation.
b. Name the gas liberated when an acid reacts with a metal.
- 26.

S.No	Solution	pH
1	Stomach juice	1.2
2	Milk of magnesia	10
3	Sodium hydroxide	14
4	Lemon juice	2.2
5	Pure water	7.4

Answer the following questions with reference to the above table.

- a. Which solutions turn blue litmus red?
b. Which of the above solutions can be used as antacids?
c. Which among these solutions has more hydroxyl ions?
27. “Generally solder is used for welding electrical wires together.”
a. How is the above mentioned material special?
b. What special quality does solder has, as it is used in welding of wires?
c. Which are the important components of solder?
28. Write a neat labeled diagram to show electrolytic refining of copper.

29.



Answer the following questions with reference to the above figure.

- a. Which property of plant does the figure indicate?
b. Which is the external stimulus for the movement of plant parts?
c. Why do the roots and stem of the plant grow in opposite direction?
30. a. Write the formula to find out resistivity of a conductor.
b. Write the S.I unit of resistivity.
c. How is the resistivity different from resistance of a conductor?

31. An electric oven of 2 kW power rating is operated in a domestic electric circuit (220V) that has a current rating of 5A. What result do you expect? Explain.
32. Write a neat labeled diagram to show an illustration of the principle of electric generator.
33. a. It is suggestible to use clothe bags instead of plastic bags while going for shopping.
Why?
- b. We generally do not clean ponds or lakes. But the aquarium needed to be cleaned frequently. Why?

Answer the following questions.

4x4=16

34. Ramesh comes across the following doubts while observing an aquarium. Clarify his doubts with proper reasons.
- Why do fishes open and close their mouth very frequently?
 - Do fishes respire fast than us? Why?
 - Which is the respiratory organ among fishes?
35. Write a neat diagram to show human excretory system and label the following parts.
- Urinary bladder
 - Kidneys
36. a. Write the differences between series connection and parallel connection.
b. Write the circuit symbols for the following.
- * Open plug key
 - * Wire joint
37. a. What are the functions of the following parts in the brain?
- * Medulla
 - * Cerebellum
- b. Write the difference between walking and reflex action.

Answer the following question.

5x1=5

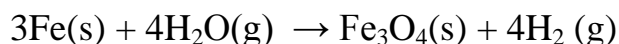
38. Explain an activity to show electrolysis of water with a proper diagram.

KEY ANSWERS

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Multiple Choice Questions

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1

2. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is

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1

3. Which one of the following metals do not react with cold as well as hot water?

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- b) Calcium
- d) Iron**

1

4. Choose the event that does not occur in photosynthesis

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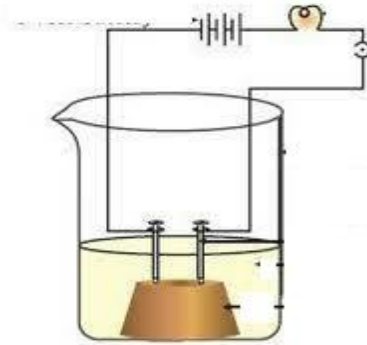
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- b) It regulates growth and development of the body**
- c) It regulates blood sugar level
- d) Insufficient secretion of insulin will cause diabetes.

1

18. * Water contains two parts of hydrogen and one part of oxygen.
 * Therefore the amount of hydrogen and oxygen produced during electrolysis of water is in a ratio 2 : 1.
 * The gas collected more is hydrogen. 1+1

19.

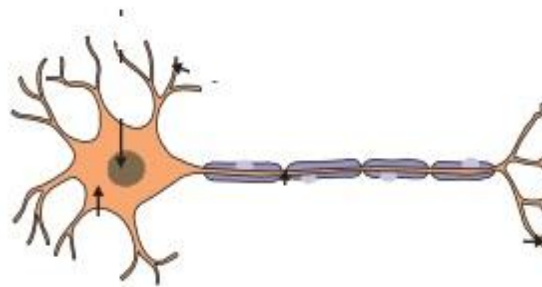


2

20. * Ionic compounds have high melting point and boiling points
 * They conduct electricity in their molten state. 1+1

21. * Guard cells
 * The guard cells swell when water flows into them, causing the stomatal pore to open. Similarly the pore closes if the guard cells shrink. 1+1

22.



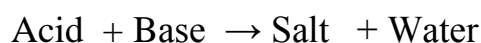
2

23. * Moving a magnet in a stationary coil.
 * Moving a coil keeping a magnet stationary 1+1

24. Grass → Grasshopper → Frog → Snake → Eagle
 1 2 3 4 1+1

Three marks questions.

25. a) The formation of salt and water by the reaction between acids and bases is known as neutralization reaction.



- b) Hydrogen

2+1

26. a. Stomach juice and Lemon juice

b) Milk of magnesia

c) Sodium hydroxide.

1+1+1

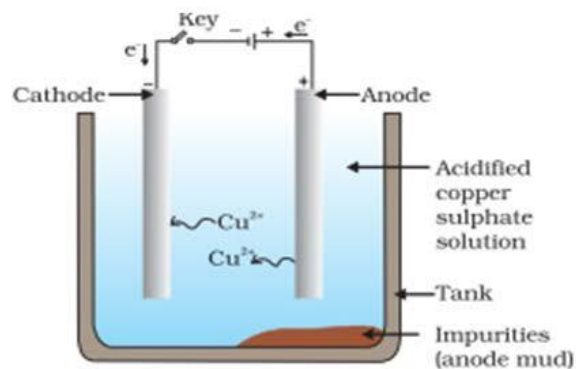
27. a) Above mentioned solder is an alloy.

b) It has a low melting point

c) Lead and tin

1+1+1

28.



2+1

29. a) Geotropism.

b) The force of attraction by the earth.

c) Roots show positive geotropism and stem show negative geotropism.

1+1+1

30. a) $\rho = \frac{RA}{l}$

b) Ωm

c) Resistivity for a given material is always constant where as resistance of a given material can vary along with its length and area of cross section.

1+1+1

31. Given :

Power rating : $P = 2 \text{ kW} = 2000 \text{ W}$

Current rating of the device : $I_0 = 5\text{A}$

Voltage : $V = 220\text{V}$

Current consumed : $I = ?$

1

$$I = \frac{P}{V}$$

$$= \frac{2000}{220}$$

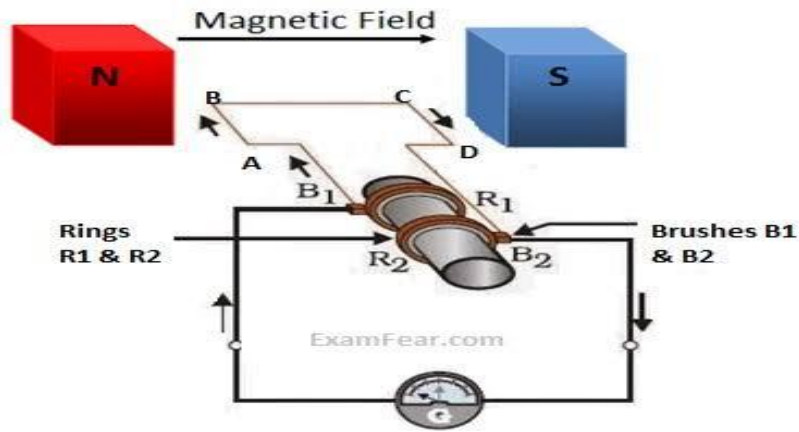
$$= 9.09 \text{ A}$$

1

Hence the current drawn by the electric oven is 9.09 A , which exceeds the safe limit of the circuit. Fuse element of the electric fuse will melt and break the circuit.

1

32.



2+1

33. a) Because plastic bags are non biodegradable and cause pollution.
 b) Lakes and ponds contain decomposers which decay waste products and clean the ecosystem. But as the aquarium is an artificial ecosystem, it does not have decomposers. Hence it must be cleaned frequently.

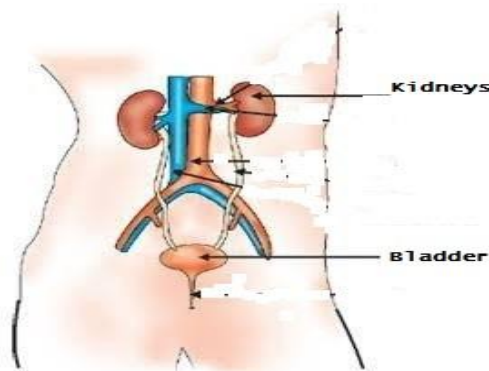
1+2

Four marks questions

34. a) In order to use dissolved oxygen fishes need to intake water through mouth.
 b) Yes. Because the amount of oxygen dissolved in water is much lesser than the amount of oxygen in air.
 c) Gills

2+1+1

35.



1+1+2

36. a)

Series connection	Parallel connection
• Voltage differs	Current differs
• Effective resistance increases	Effective resistance decreases

b) *



*



2+1+1

37. a. **Medulla** : Controls involuntary actions like blood pressure, salivation etc
Cerebellum : Responsible for precision of voluntary actions and maintaining posture and balance of the body.

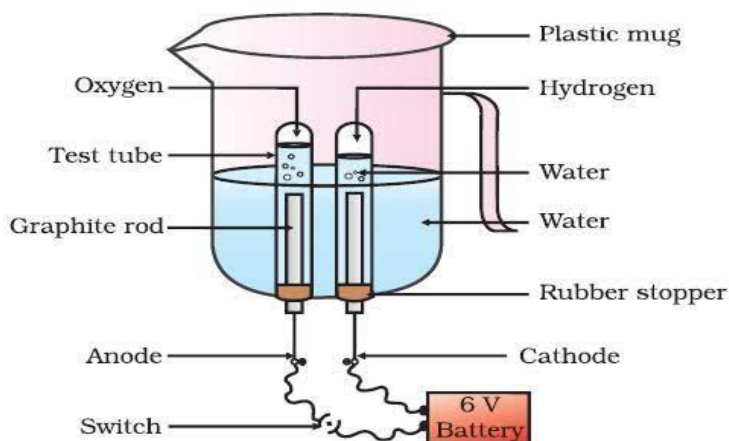
b)

Walking	Reflex action
<ul style="list-style-type: none"> • Voluntary action 	Involuntary action
<ul style="list-style-type: none"> • Controlled by brain 	Controlled by spinal cord

1+1+2

Five marks question

38.



- * Arrange the apparatus as shown in the figure.
- * Connect the electrodes to a 6V battery.
- * Fill the mug with water such that the electrodes are immersed. Add a few drops of dil.sulphuric acid.
- * take two test tubes filled with water and invert them over the two carbon electrodes.
- * Switch on the current and leave for some time.

Observation : Bubbles are formed near the electrodes. Gas will be collected at each test tubes. The amount of gas collected in one test tube is double than the gas collected in the other test tube.

Inference : On electrolysis water produced hydrogen and oxygen.

2+2+1