ADARSH PUBLIC SCHOOL (CBSE) VITA

Kundal Road, Bhavaninagar, Vita

CLASS 10 - SCIENCE

Practice Examination- I

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

General Instructions:

1. The question paper comprises three sections – A, B and C. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type questions. They are to be answered in one word or in one sentence.
5. All questions in Section B are three-mark, short-answer type questions. These are to be answered in about 50 - 60 words each.
6. All questions in Section C are five-mark, long-answer type questions. These are to be answered in about 80 – 90 words each.
7. This question paper consists of a total of 30 questions.

Section A

1. Indicate the oxidizing and reducing agent in the reaction. **[1]**
   $H_2 + Br_2 \rightarrow 2HBr$
2. Out of Na, Al, Si, P which element exhibits maximum number of valence electrons? **[1]**
3. **Answer the questions that follows on the basis of your understanding of the following paragraph and the related studied concepts:** **[4]**
   In ancient times, wood was the most common source of heat energy. The energy of flowing water and wind was also used for limited activities. The exploitation of coal as a source of energy made the industrial revolution possible. Increasing industrialisation has led to a better quality of life all over the world. It has also caused the global demand for energy to grow at a tremendous rate. The growing demand for energy was largely met by fossil fuels – coal and petroleum. Our technologies were also developed for using these energy sources. But these fuels were formed over millions of years ago and there are only limited reserves. Fossil fuels are non-renewable sources of energy, so we need to conserve them. If we were to continue consuming these sources at such alarming rates, we would soon run out of energy. In order to

avoid this, alternate sources of energy were explored.

i. What do you mean by non- renewable sources of energy?

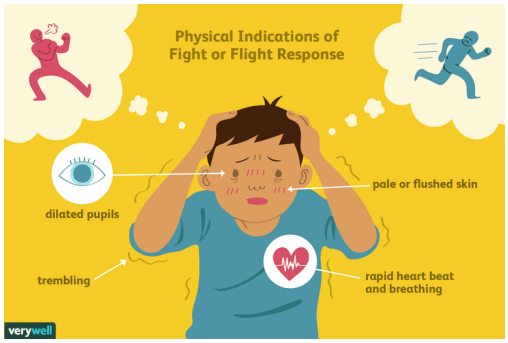
ii. Write five examples of non-renewable energy sources.

iii. Which is the main element in fossil fuels?

iv. Which type of environmental hazard is not contributed by the combustion of fossil fuels?

4. **Answer the questions that follow on the basis of your understanding of the following paragraph and the related studied concepts:** **[4]**

Adrenaline is secreted directly into the blood and carried to different parts of the body. The target organs or the specific tissues on which it acts include the heart. As a result, the heart beats faster, resulting in the supply of more oxygen to our muscles. The blood to the digestive system and skin is reduced due to contraction of muscles around small arteries in these organs. This diverts the blood to our skeletal muscles. The breathing rate also increases because of the contractions of the diaphragm and the rib muscles. All these responses together enable the animal body to be ready to deal with the situation. Such animal hormones are part of the endocrine system which constitutes the second way of control and coordination in our body.



Answer the following questions:

i. How does chemical coordination take place in animals?

ii. Which hormone is called an emergency hormone?

iii. Where are adrenal gland present in our body?

iv. How does our body respond when adrenaline is secreted into the blood?

5. A student obtained a sharp image of the grill of a window in the laboratory on a screen, using a convex lens. For getting better results, her teacher suggested focusing of a distant tree instead of the grill. In which direction should the lens be moved for this purpose to get a sharp image on the screen? **[1]**

a) behind the screen

b) very far away from the screen

c) towards the screen

d) away from the screen

OR

A student has to do the experiment on finding the focal length of a given convex lens by using a distant object. She can do her experiment if she is also made available with

a) a lamp and a screen

b) a scale and a screen

c) a lamp and a scale

d) only a screen

6. What is UASB? **[1]**

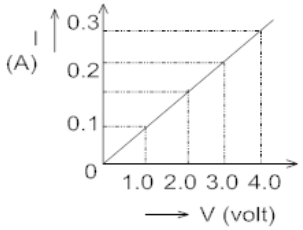
a) up flow aerobic sledge Blanket

b) up flow anaerobic sledge Blanket

c) United aerobic sledge Blanket

d) United anaerobic sledge Blanket

7. In an experiment on Ohm's law, a student obtained a graph as shown in the diagram. The value of resistance of the resistor is: **[1]**



a) $100\,\Omega$

b) $0.1\,\Omega$

c) $1.0\,\Omega$

d) $10\,\Omega$

8. When carbon dioxide gas is passed through calcium hydroxide solution it forms **[1]**

a) calcium carbonate

b) calcium

c) calcium bicarbonate

d) calcium chloride

OR

Ayush and Ishoo were given one test tube each. One of the test tube contained water and the other contained a solution of sodium hydroxide. They were asked to identify the test tube containing NaOH solution. Which one of the following can be used for correctly identifying the required test tube?

a) Dilute hydrochloric acid

b) Red litmus

c) Blue litmus

d) sodium carbonate solution

9. An agriculture / crop land is: **[1]**

a) A community of plants & animals only

b) A natural ecosystem

c) An artificial ecosystem

d) A biome

10. Which of the following is biodegradable? **[1]**

a) Polythene

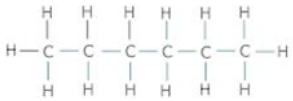
b) Paper

c) Aluminium foil

d) Plastic

11. Which of the following represent the formula C_6H_{14}? **[1]**

A



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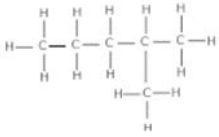

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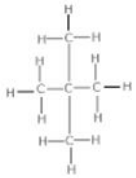
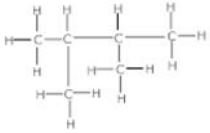


D



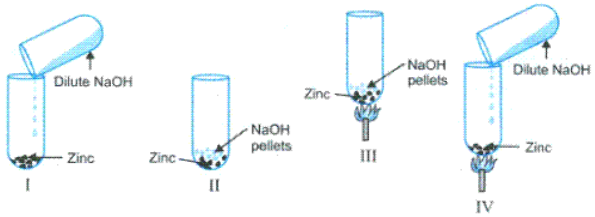
a) A, B and D

b) A and C

c) All of these

d) A and B

12. The figures below show set-ups for studying the reaction of zinc with sodium hydroxide. **[1]**



The correct set-up is

a) I

b) III

c) IV

d) II

13. **Assertion:** CH_3Cl is obtained from CH_4 by the action of Cl_2 in the presence of sunlight. **[1]**

Reason: It is obtained by addition reaction.

a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

14. **Assertion:** The connecting wires are made of copper. **[1]**

Reason: The electrical conductivity of copper is high.

a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

Section B

15. Define the following terms: **[3]**

i. Mineral

ii. Ore

iii. Gangue

16. Why do fire flies glow at night? **[3]**

OR

A solution of a substance 'X' is used for whitewashing

i. Name the substance 'X' and writes its formula.

ii. Write the reaction of the substance 'X' named in (i) above with water.

17. A student reports the police about the illegal vending of alcohol near his school. He also knew about denatured alcohol. **[3]**

i. What is denatured alcohol?

ii. What would happen if somebody consumes denatured alcohol?

18. Explain the correct way to observe guard cells and their nuclei under microscope. **[3]**

OR

What are the functions of gastric glands present in the wall of the stomach?

19. Draw ray diagram showing the image formation by a convex lens when an object is placed between optical centre and focus of the lens. **[3]**

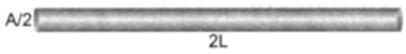
20. Give two reasons for the appearance of variations among the off springs formed by sexual reproduction. **[3]**

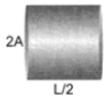
21. What does the autonomous nervous system include? What is the main function? **[3]**

22. Compare the power used in the 2Ω resistor in each of the following circuits: **[3]**
(i) a 6 V battery in series with 1Ω and 2Ω resistors,and
(ii) a 4 V battery in parallel with 12 Ω and 2Ω resistors.

23. Figure (a), (b) and (c) show three cylindrical copper conductors along with their face areas and length. Which of the conductors will have highest resistance and why? **[3]**

i. 

ii. 

iii. 

24. A current of 30 mA is flowing through a wire of resistance of 50Ω. what is the potential difference between two ends of the wire ? **[3]**

OR

"The magnification produced by a spherical mirror is -3." List four information you obtain from this statement about the mirror/image.

Section C

25. i. Why does an aqueous solution of acid conduct electricity? **[5]**

ii. How does the concentration of hydrogen ions $[H_3O]^+$ changes when the solution of an acid is diluted with water?

iii. Which has higher pH. A concentrated or dilute solution of HCL?

iv. What would you observe on adding dil HCL acid to

a. Sodium bicarbonate placed in a test tube.

b. Zinc metal in a test tube.

26. The electronic configuration of three elements X, Y and Z are given below: **[5]**

X = 2; Y = 2, 6; Z = 2, 8,2

i. Which element belongs to the second period?
ii. Which element belongs to the eighteenth group?
iii. Which element belongs to the second group?
iv. What is the valency of Y?
v. Y and Z are metal or non-metal.

27. a. Name the process and explain the type of nutrition found in green plants. List the raw materials required for the process. Give chemical equation for the mentioned process. **[5]**
b. Write the three observation that occur during this process.

28. a. What is variation? How is variation created in a population? How does the creation of variation in a species promote survival? **[5]**
b. Explain how, offspring and parents of organisms reproducing sexually have the same number of chromosomes.

OR

A man with blood group A married a person with blood group O. Their daughter has blood group O. Is this information enough to tell you which of the blood group trait A or O is dominant. Why or why not?

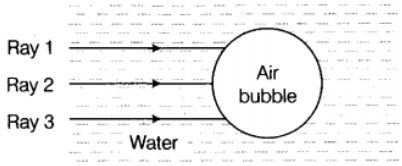
29. Give the principle, construction and working of an electric motor. Where is it used ? Write the function of a split ring in electric motor. **[5]**

30. A 14 year old student is not able to see clearly the questions written of the black board placed at a distance of 5 m from him. **[5]**

a. Name the defect of vision he is suffering from?
b. Draw the diagram to show this defect?
c. Name the type of lens used to correct this defect?
d. Name two possible cause of this defect.
e. Draw the diagram to show how this defect can be corrected.

OR

An air bubble in water is shown in the figure. Three rays of light are incident on the air bubble.



The angle of incidence of ray 1 on the air bubble is greater than the critical angle. The angle of incidence of ray 2 on the air bubble is less than the critical angle. Ray 3 is perpendicular to the surface of the bubble.

i. In figure at the point where ray 1 meets the air bubble, mark
   a. the normal to the surface
   b. the angle of incidence
ii. Complete the ray diagram to show how all three rays continue after they meet the air bubble.
iii. Define refractive index of water. If the speed of light in air is 3×10^8 ms^{-1} and the speed of light in water is 2.2×10^8 ms^{-1}. Calculate the refractive index of water.