** SINDHI HIGH SCHOOL, BENGALURU.**

**ANNUAL EXAMINATION (2023-24)**

**SUBJECT: SCIENCE**

**CLASS: IX MAX MARKS: 80**

**DATE:. 02.2024 Reading Time: 8:30 to 8:45 am**

**NO OF PRINTED SIDES: 8 Writing Time: 8:45 to 11:45 am**

**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 be 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 be in the range of 50 to 80 words.

vi. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answers to these questions should be in the range of 80 to 120 words.

vii. Section E consists of 3 source-based/case-based assessment units of 04 marks each with sub-parts.

|  |  |  |
| --- | --- | --- |
| **S NO.** | **QUESTIONS** | MARKS |
|  | **SECTION A** |  |
|  | **Select and write the most appropriate option out of the four options given for each of the questions 1 – 20.** |  |
| 1 | Observe the given graph: What is the physical state of matter at points 1,3 and 5 respectively?    a) 1-Solid, 3-Liquid, 5-Gas b) 1-Solid, 3-Gas, 5-Liquid  c) 1-Liquid, 3-Gas, 5-Solid d) 1-Liquid, 3-Solid, 5-Gas | 1 |
| 2 | Which of the following are chemical changes?  i. decaying of wood ii. burning of wood  iii. sawing of wood iv. hammering of nail into wood  (a) i and iii (b) ii and iii (c) i and ii (d) i and iv | 1 |
| 3 | If the number of electrons in an ion X3- is 10, the atomic number of element X will be:  a) 8 b) 5 c) 10 d) 7 | 1 |
| 4 | Shaving cream produces foam. What kind of colloid is shaving cream? a)  Liquid dispersed in a gas b)  Gas dispersed in a liquid  c)  Solid dispersed in a liquid d)  Solid dispersed in a gas | 1 |
| 5 | Which of the following represents the correct electron distribution in magnesium ion?  a) 2,8 b) 2,8,4 c) 2,8,8 d) 2,8,2 | 1 |
| 6 | Two chemical species X and Y combine together to form a product P which contains both X and Y. X+Y→P, X and Y cannot be broken down into simpler substances by simple chemical reactions. Which of the following concerning the species X, Y and P are correct? (i) P is a compound (ii) X and Y are compounds (iii) X and Y are elements (iv) P has a fixed composition  (a) (i), (ii) and (iii) (b) (i), (ii) and (iv) (c) (ii), (iii) and (iv) (d) (i), (iii) and (iv) | 1 |
| 7 | The chemical formula of sodium carbonate is \_\_\_\_\_\_\_\_\_.  (a) Na2CO3 (b) NaHCO3 (c) NaCO3 (d) Na2HCO3 | 1 |
| 8 | A B  Difference between Mitochondria and Plastids - An overview  The major difference between the given two organelle is  a. A is found in eukaryotic cell B is found in prokaryotic cell only  b. A is independent of light whereas B is dependent on light to function  c. A has plasmid B has ribosomes.  d. A is filled with enzymes B is filled with light. | 1 |
| 9 | Sania experiments to know how plant cells lose or gain water through osmosis. She cuts out 5 cm long potato strips. She puts three potato strips in each of the following beakers:   • Beaker 1 containing only water  .• Beaker 2 containing 1% salt solution   • Beaker 3 containing 2% salt solution  Sania leaves the potato strips in the beaker for 5 hours.  What can Sania conclude from her experiment of beaker 3?  (a) Cells gain water through osmosis when kept in a hypertonic solution.  (b) Salt molecules from the cell move out when kept in hypotonic solution (c) Cells in isotonic solution first gain water and then gradually lose water.  (d) Water molecules move out of the cell in hypertonic solution. | 1 |
| 10 | The diagram shows an animal cell with some of its organelles. X is also a cell organelle.  What would be the consequence if X doesn’t function?  (a) cell doesn’t reproduce  (b) Cell will die due to lack of energy.  (c) Membrane Biogenesis doesn’t occur  (d) Vacuole cannot be formed. | 1 |
| 11 | Which of these organelle is involved in maintaining osmoregulation in Amoeba?  (a) Food vacuole. (b) Lysosomes. (c) Chloroplast . (d) Contractile Vacuole | 1 |
| 12 | The given picture explains which concept of Aqua culture?  Biofloc Fish Farming Food And Feeding Habits Of Different, 57% OFF(a) Composite fish culture  (b) Fish farming  (c) Inter fishing  (d) Organic farming | 1 |
| 13 | An electric train is moving with a velocity of 30m/s. How much distance will it travel in 30s?  (a) 900 (b) 390m (c) 930m (d) 920m | 1 |
| 14 | A car travels on a straight road with a velocity of 25km/h in first one hour and in the next one hour it changes its speed to 35 km/h. What is the average velocity of the car?  (a) 5 km/h (b) 10 km/h(c) 30 km/h (d) 60 km/h | 1 |
| 15 | Blood transports various types of materials which includes nutrients, gases and nitrogenous wastes, name the tissue with which it is made up of  (a) Stratified squamous epithelium (b) Connective tissue  (c) Spindle fibres (d) Unstriated muscle | 1 |
| 16 | Exotic or foreign breeds (for example, Jersey, Brown Swiss) are selected for long lactation periods, while local breeds (for example, Red Sindhi, Sahiwal) show excellent resistance to diseases. The two can be cross-bred to get animals with both the desired qualities.  i. milk producing requirement, is the type of food required during the lactation period.  ii. maintenance requirement, which is the food required to support the animal to live a healthy life,  iii. milk producing requirement, is the amount of food required during the calf stage of growth.  iv. maintenance requirement, which is the water required to support the animal to live a healthy life,  (a) i and ii (b) i and iv (c) ii and iii (d) iii and iv | 1 |
|  | **Note: In the following questions 4 to 6, a statement of Assertion is followed by a statement of Reasoning. Choose the correct answer from the following options.**  **(a) Both assertion and reason are correct statements, and reason is the correct explanation for assertion.**  **(b) Both assertion and reason are correct statements but reason is not the correct explanation for assertion.**  **(c) Assertion is correct, but reason is the wrong statement.**  **(d) Assertion is wrong, but reason is the correct statement.** |  |
| 17 | Assertion (A): The rate of evaporation increases with increase in temperature. Reason (R): Increase in temperature decreases the kinetic energy of the particles. | 1 |
| 18 | Assertion (A): Some cells like Neuron cannot divide.  Reason (R): All living cells divide to replace their old cells or damaged cells. | 1 |
| 19 | |  | | --- | | Assertion (A): Ligament contains very little matrix | | Reason (R): Ligament has no elasticity but has considerable strength | | 1 |
| 20 | Assertion (A): Uniform circular motion is also called accelerated motion.  Reason (R): Direction of motion changes at every point. So velocity is not constant. | 1 |
|  | **Section B** |  |
| 21 | (a) Write the formula and calculate the no of atoms in the polyatomic anion  present in potassium sulphate (b) Write the formula of the compound formed from the following sets of  elements  (i) Sodium and oxygen (ii) Calcium and fluorine | 2 |
| 22 | Draw a neat labelled diagram of the master of the cell and represent equational division. | 2 |
| 23 | Discuss on various ways by which storage of grains is affected. | 2 |
| 24 | Explain why it is difficult to push a tin can into water keeping its mouth upwards than when its mouth is kept downwards towards the water? | 2 |
| 25 | What happens to Kinetic energy and potential energy of a stone if it is thrown upwards?  **OR**  State the conditions for zero work done. | 2 |
| 26 | Identify the meristematic tissues A,Band C given in the image.Identify the given picture and mention one character of A,B,C | 2 |
|  | **Section C** |  |
| 27 | (a) **How much oxygen will be added with 36 g carbon to give 132 g carbon dioxide?**  (b) Calculate the molecular mass of **C2H5OH**. | 3 |
| 28 | NCERT Solutions For Class 9 Science Chapter 2 Is Matter Around Us Pure Textbook Questions Q3T**he solubility of potassium nitrate at different temperatures and collected, the data as given below (results are given in the following table, as grams of substance dissolved in 100 grams of water to form a saturated solution).**  **Temperature in Kelvin and solubility in g/L**  (a) Define solubility**.**  **(b)What mass of potassium nitrate would be needed to produce a saturated solution of it 50 grams of water at 313 K?**  **( c)**At 293K how would you convert this solution into a suspension? Justify.  **OR**  (a) Calculate the mass of iodine and the mass of alcohol required to make **25g** of **10%** tincture of iodine. (b) Give some examples of Tyndall effect observed in your surroundings | 3 |
| 29 | Draw neat labelled diagram of  a) The tissue which is mainly involved in protection.  b) The tissue which consists of three dead cells and only one living cell.  c) The tissue which is multinucleated and is voluntary in function. | 3 |
| 30 | Four men lift a 250 kg box to a height of 1m and hold it without raising or lowering it.  (a) How much work is done by the men in lifting the box?  (b) How much work do they do in just holding it?  (c) Why do they get tired while holding it? | 3 |
| 31 | Prove that momentum is conserved when two objects collide with each other. | 3 |
| 32 | (a) A steel needle sinks in water but a steel ship floats. Explain how.  (b) Why do you prefer a broad and thick handle for your suitcase? | 3 |
| 33 | i) Give any two characters of prokaryotic cells which make them inferior to eukaryotic cells.  ii) Why does Meiosis occur in reproductive organs?  iii) Why is Plasmolysis considered as an important phenomenon in plant cells? | 3 |
|  | **Section D** |  |
| 34 | (a) Mention the drawbacks of Rutherford’s atomic model?  (b) An element X , has atomic number is17 and mass number 35  i. Write the electronic configuration of the element X .  ii. Find its valency .  iii. What will be the formula of the compound formed between X and Y,  if the metal Y has three valence electrons ?  iv. How many neutrons are there in the element.  (c) Define Atomic number.  (d)Which of the following pairs are isobars? Why?    (i) **150Sm62 and 150Eu63 (ii) 129Te52 and 128Sb51**   **OR**  (a) Enlist the observations drawn by Rutherford from his α-ray scattering experiment.   |  |  |  | | --- | --- | --- | | Sample | A | B | | Mass Number | 40 | x | | Atomic number | 20 | y | | Protons | z | 20 | | Neutrons | 20 | 18 |   (b) Complete the following table. How are A and B related? . | 5 |
| 35 | Given below is the diagrammatic sketch of an areolar tissue. Identify the  parts labelled. A, B, C and D and select the right option about them.a) Identify the given tissue and give any one function and location for the same.  b) Draw a neat labelled diagram of the muscle present in your stomach and mention any one structural feature and one function for the same.  **OR**  Draw a well labelled diagram of T.S. of dicot stem? - Sarthaks eConnect |  Largest Online Education Community(a) (i) Identify the given diagram.  (ii) Name any three tissues present in the picture along with their function.  (iii) Name two tissues present in the diagram which are involved in providing mechanical strength.  b) Draw any one simple permanent tissue and one complex permanent tissue. | 5 |
| 36 | (a)What are wavelength, frequency and time period of a sound wave?  (b) Calculate the wavelength of a sound wave whose frequency is 220 Hz and speed is 440 m/s in a given medium.  (c) Why sound waves are called mechanical waves?  **OR**  (a) Find the displacement of the body in first 10 seconds in the following graph  (b) Distinguish between displacement and distance covered by a body in given time. (Any three points) | 5 |
|  | **Section E** |  |
| 37 | Matter is anything that has mass and occupies space. Pen, paper, clips, sand, air and ice etc are different forms of matter. Every matter is made of small particles. Modern day scientists have classified matter based on their physical properties and chemical nature.  Read the above passage and answer the following questions.  (a) With the help of a labelled diagram, describe an activity to show that the particles of matter have spaces between them. Materials given are 100ml beaker, spatula, water and salt.  (b) Sponge though compressible is a solid. Why?  (c) Arrange the following in the increasing order of forces of attraction  between the particles and justify. Water, sugar and oxygen  **OR**  (c) Which possess higher heat content ? Steam at 1000C or than water at 1000C.Explain why? | (2)  (1)  (1)  (1) |
| 38 | Improvement in Food Resources Class 9 Extra Questions Science Chapter 15 -  Learn CBSE(a) What concept is understood from the given graph?  (b) Mention one difference between plot A and plot B.  (c) Explain the classification of manure. What are the major components of fertilisers?  **OR**  (c) Mention the short term benefits of fertilisers and long term benefits of manures. | 4 |
| 39 | When a wave reaches the boundary between one medium another medium, a portion of the wave undergoes reflection and a portion of the wave undergoes transmission across the boundary. The amount of reflection is dependent upon the dissimilarity of the two media. For this reason, acoustically minded builders of auditoriums and concert halls avoid the use of hard, smooth materials in the construction of their inside halls.  (a) State laws of reflection.  (b) What are the conditions for an echo to be heard?  (c) What is reverberation? How it can be reduced? OR  What are ultrasonic and infrasonic sounds? | 4 |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*