

Series:

Code No. H1E1S38

Roll No.

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Candidates must write the Code No on the title page of the answer-book

1. Please check that this question paper contains 7 printed pages
2. Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
3. Please check that this question paper contains 27 questions.
4. Please write down the Serial Number of the question before attempting it.
5. 15 minute time has been allotted to read this question paper. During these time students are not allowed to write answers

HALF YEARLY EXAMINATION 2018

SCIENCE CLASS: IX

Time: 3 hours

Max.Marks : 80

General Instructions

- (i) The question paper comprises of two sections A and B. You have to attempt both the sections
- (ii) All the questions are compulsory
- (iii) There is no overall choice. However internal choice has been provided in 2 five mark question
- (iv) Question numbers 1-2 are one mark questions. These are to be answered in one word or one sentence
- (v) Question numbers 3-5 are two marks questions. These are to be answered in 30 words each.
- (vi) Question numbers 6 to 15 are three mark questions. These are to be answered in about 50 words
- (vii) Question numbers 16-21 are five mark questions. These are to be answered in about in 70 words.
- (viii) Question numbers 22 – 27 are practical based questions and carry 2 marks each .

SECTION A

1	Symbol of Boron is B and that of Barium is Ba. Write the symbols for Carbon and Calcium	1
2	When a bus suddenly starts moving, the passengers tend to fall backward. What is it due to?	1
3	Define the following	2

	a) Latent heat of fusion b) latent heat of vaporization	
4	While diluting a solution of salt in water, a student by mistake added acetone (boiling point 56°C). What technique can be employed to get back the acetone? Justify your choice Smoke and fog both are aerosols. In what way are they different?	2
5	Draw diagram to show the location of apical, intercalary and lateral meristems in plant body	2
6	Tabulate the differences in the following characteristics of states of matter a) Compressibility b) kinetic energy c) fluidity	3
7	Enumerate any four major differences in the physical properties of metals and non-metals Two elements are liquids at room temperature. Identify them	3
8	Write one difference between a) Prokaryotic and eukaryotic cell b) Unicellular and multicellular organisms c) Diffusion and osmosis	3
9	Differentiate between voluntary and involuntary muscles. Give one example of each type. Name the different types of epithelium How tendons are different from ligaments	3
10	Explain the significance of the following practices in modern agriculture a) Mixed cropping b) Inter cropping c) Crop rotation	3
11	Explain composite fish farming. Mention the major challenge in this	3

	method? How is this challenge solved?	
12	Differentiate between a. Vector quantity and Scalar quantity b. Distance and displacement c. Velocity and acceleration	3
13	Derive the first equation of motion by graphical method .(velocity time relation)	3
14	Give reason and explain a. Cricket players lower their hands while collecting a catch b. As the sailor jumps out in forward direction , the boat moves backwards c. It is difficult for a fireman to hold an hose which ejects large amount of water at a high velocity	3
15	State the law of conservation of momentum and derive the mathematical expression for it .	3
16	You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with well labeled diagram. It is a hot summer day; Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why? You want to wear your favorite shirt to a party, but the problem is that it is still wet after a wash. What steps would you take to dry it faster? OR Comment on the following statements: (a) Evaporation produces cooling. (b) Rate of evaporation of an aqueous solution decreases with increase	5

	<p>in humidity.</p> <p>(c) Sponge though compressible is a solid.</p> <p>Why does the temperature of a substance remain constant during its melting point or boiling point?</p>	
17	<p>Classify each of the following, as a physical or a chemical change. Give reasons.</p> <p>(a) Drying of a shirt in the sun.</p> <p>(b) Rising of hot air over a radiator.</p> <p>(c) Burning of kerosene in a lantern.</p> <p>(d) Change in the colour of black tea on adding lemon juice to it.</p> <p>(e) Churning of milk cream to get butter.</p> <p>During an experiment the students were asked to prepare a 10% (Mass/Mass) solution of sugar in water. Ramesh dissolved 10g of sugar in 100g of water while Sarika prepared it by dissolving 10g of sugar in water to make 100g of the solution.</p> <p>(a) Are the two solutions of the same concentration</p> <p>(b) Compare the mass % of the two solutions.</p>	5
18	<p>Draw a plant cell and label the parts which</p> <p>(a) determines the function and development of the cell</p> <p>(b) packages materials coming from the endoplasmic reticulum</p> <p>(c) provides resistance to microbes to withstand hypotonic external media without bursting</p> <p>(d) is site for many biochemical reactions necessary to sustain life.</p> <p>(e) is a fluid contained inside the nucleus</p> <p>What are the consequences of the following conditions?</p>	5

	<p>(a) A cell containing higher water concentration than the surrounding medium</p> <p>(b) A cell having low water concentration than the surrounding medium.</p> <p>(c) A cell having equal water concentration to its surrounding medium</p> <p style="text-align: center;">OR</p> <p>Draw a neat labelled diagram of an animal cell.</p> <p>Differentiate between rough and smooth endoplasmic reticulum. How is endoplasmic reticulum important for membrane biogenesis?</p> <p>In brief state what happens when</p> <p>(a) Dry apricots are left for some time in pure water and later transferred to sugar Solution?</p> <p>(b) A Red Blood Cell is kept in concentrated saline solution?</p> <p>(c) The Plasma-membrane of a cell breaks down?</p> <p>(d) Rheo leaves are boiled in water first and then a drop of sugar syrup is put on it?</p> <p>(e) Golgi apparatus is removed from the cell?</p>	
19	<p>Differentiate between sclerenchyma and parenchyma tissues</p> <p>Give reasons for</p> <p>(a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.</p> <p>(b) Intercellular spaces are absent in sclerenchymatous tissues.</p> <p>(c) We get a crunchy and granular feeling, when we chew pear fruit.</p> <p>(d) Branches of a tree move and bend freely in high wind velocity.</p>	5

	(e) It is difficult to pull out the husk of a coconut tree. List the characteristics of cork. How are they formed? Mention their role.	
20	A sprinter in a 100m race , covers 4 m in first second, 30m in next four second , 52 m in another 4 s and finishes the race in 10 seconds a. Calculate velocity of the sprinter. b. In which time interval, the average velocity attained by the sprinter is maximum? c. Plot the distance time graph for the motion of the sprinter d. Find out the distance moved by the sprinter at the end of 6s with the help of graph?	5
21	State law of conservation of momentum Derive the equation with proof A bullet of mass 20g is horizontally fires with a velocity 150m/s from a pistol of mass 2kg. What is the recoil velocity of the pistol?	5
SECTION B		
22	Draw diagram of parenchyma and collenchymas tissue with label indicating prominent characteristics of the tissues	2
23	Compare the following properties of transparency, filtration criterion, stability in case of true solution and colloid	2
24	Differentiate between non striated muscle and striated muscle.	2
25	List two precautions to be taken while determining the melting point of ice	2
26	Name the stains used to prepare temporary mount of a) onion peel b) Cheek cell	2
27	How will you separate a mixture of ammonium chloride and sand? Draw diagram	2