SGS

CLASS : IX 9/2012

SUBJECT : SCIENCE (SET-I)

Time : 3 Hrs. **M.M.: 90**

General Instructions :

1. ***The question paper comprises of two sections, A and B. You are to attempt both the sections.***
2. ***All questions are compulsory.***
3. ***There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.***
4. ***All questions of Section A and all questions of Section B are to be attempted separately.***
5. ***Questions 1 to 3 in Section A are one mark questions. These are to be answered in one word or in one sentence.***
6. ***Questions 4 to 7 in Section A are two marks questions. These are to be answered in about 30 words each.***
7. ***Questions 8 to 19 in Section A are three marks questions. These are to be answered in about 50 words each.***
8. ***Questions 20 to 24 in Section A are five marks questions. These are to be answered in about 70 words each.***
9. ***Questions 25 to 42 in Section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.***

SECTION-A

Q1. State one difference between a gas and a vapour. (1)

Q2. List any two single celled (unicellular) organisms. (1)

Q3. State the meaning of balanced forces. (1)

Q4. Give reason why we are able to sip hot tea or milk faster from a saucer rather than a cup? (2)

Q5. On dissolving chalk powder in water, a suspension is obtained. Give any four reasons to support the fact that mixture so obtained is a suspension only. (2)

Q6. State the role of ligaments and tendons in our skeletal system. (2)

Q7. Tabulate any two points of difference between 'g' and 'G'. (2)

Q8. Define draught animals. Mention the desired qualities which will be seen in a cross-breed between a Brown Swiss and a Sahiwal? What are concentrates in a cattle feed? (3)

Q9. Why are manures and fertilizers used in fields? A farmer irrigated his field excessively just after applying fertilizers. Explain why is this not a correct practice? (3)

Q10. (a) What happens when acetone is poured on the palm? (3)

(b) Name the process involved in the following changes

(i) liquid to solid (ii) gas to liquid

(iii) solid to gas (iv) solid to liquid

Q11. Write two points of difference between simple distillation and fractional distillation. Write an example where fractional distillation is used. (3)

Q12. (a) Draw a diagram of a plant cell and label it's any two parts. (3)

(b) Write one difference between an animal cell and a plant cell. (3)

Q13. Write the location and one function of each of the following :

(a) Cuboidal epithelium (b) Glandular epithelium

(c) Columnar epithelium

Q14. Identify the simple permanent plant tissue with the following descriptions and also mention their location in the plant body : (3)

(a) Cells have irregular wall thickenings

(b) Tissues with large inter cellular spaces and cells having large air cavity

(c) Cells are long, narrow and dead in nature

Q15. Plot velocity-time graph for a body whose initial velocity is 5 m/s and is moving with a retardation of 1 m/s^2, comes to rest in 2 seconds. Also calculate the distance covered by it. (3)

Q16. A scooter is moving with a velocity of 25 m/s and it takes 5 s to stop after the brakes are applied. If the mass of the scooter along with the rider is 180 kg, find the change in momentum in this case. (3)

Q17. (a) When two bodies X and Y collide with each other, X exerts a force of 5N on Y towards east direction. What is the force exerted by Y on X? Justify your answer stating the law.

(b) When a striker hits the bottom of the pile of coins placed at the centre of a carrom board, only the lowest coin is removed. Give reason for it. (3)

Q18. Sohan is playing with a ball. If he throws the ball in vertically upward direction with a velocity of 10 m/s, find the maximum height reached by the ball and time taken by it to attain the maximum height. (3)

Q19. (a) The moon is acted by the gravitational pull of earth, still it does not fall into earth. Explain why?

(b) Determine the ratio of weight of an object of mass 50 kg on earth and on moon (Given acceleration due to gravity on moon, $g_{moon} = 1/6^{th}$ of g on the earth). (3)

Q20. (a) A student visited a fish farm where he found Catla, Rohu, Mrigals, Common Carps and Grass Carps cultured in the same pond. Name the type of fish farming observed by the student.

(b) Mention the advantages of such farming system.

(c) What is the main problem in such fish farming? How do farmers overcome such problems? (5)

OR

(a) List the different ways in which biotic and abiotic factors affect stored food grains.

(b) What preventive and controlling measures need to be taken before and after storing the grains?

(c) Name two weeds.

Q21. (a) Define evaporation.

(b) Explain how the following factors affect the rate of evaporation of a liquid.

(i) temperature of a liquid

(ii) area of the exposed surface

(iii) moisture in the surrounding air

(iv) increase in wind speed. (5)

OR

(a) Arrange iron nail, kerosene and oxygen gas in the increasing order of -

(i) force of attraction

(ii) intermolecular space

(b) The rate of diffusion of liquids is higher than that of solids. Why?

(c) Carbondioxide gas was taken in an enclosed cylinder and allowed to cool.

(i) Which state of matter will be obtained after completion of the process?

(ii) Name and define this process.

Q22. (a) Name the appropriate methods to separate the following mixtures :

(i) Nitrogen from air (ii) dye from blue ink

(iii) cream from milk (iv) pigments from natural colours

(b) Crystallisation is better technique than simple evaporation. Give one reason to justify the statement.

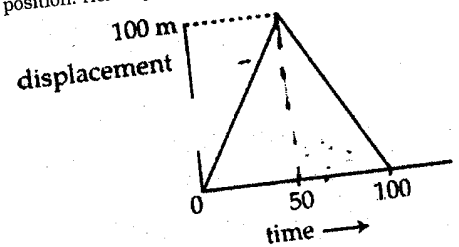
(c) Draw a labelled diagram to show the process of separation of two immiscible liquids. (5)

OR

(a) Write any three differences between a physical change and a chemical change.

(b) When a solution is said to be saturated? How can you change a saturated solution to an unsaturated solution without adding any more solvent to it? Explain in brief.

Q23. A girl walks along a straight path to drop a letter in the letter box and comes back to her initial position. Her displacement time graph is as shown below.



(s)

After studying the above graph answer the following questions :

(a) Give the value of initial displacement and final displacement of the girl.

(b) Determine her velocity at t = 0, t = 50s and t = 100s respectively.

(c) Using above information plot a velocity-time graph for the same. (5)

OR

Define average speed. How is it different from average velocity? A motorcyclist drives from A to B with a uniform speed of 30 km/h and returns back with a uniform speed of 20 km/h. Find his average speed.

Q24. (a) Explain why seat belts are provided in cars.

(b) State the law governing above observation.

(c) Mathematically show how Newton's first law is a special case of Newton's second law. (5)

OR

(a) State Newton's First and Third law of motion.

(b) Two objects of masses 100g and 200g are moving along the same direction with velocities 2 m/s and 1 m/s respectively. The collide and after collision, the first object moves at the velocity of 1.67 m/s. Determine the velocity of second object.

SECTION-B

Q25. Out of the under mentioned groups of food items, the group which will not turn blue black when treated with iodine solution is : (1)

(a) rice, potato, bread (b) bread, wheat, corn flour

(c) rice, boiled potato, corn starch (d) dal, fish, meat

Q26. Rama washed a small amount of arhar dal in water. The water became yellow. She put a few drops of Conc. HCl in test tube containing yellow water. The sample turned pink. This shows that : (1)

(a) dal is not adulterated (b) dal contains protein

(c) dal is adulterated with metanil yellow (d) dal is coloured with turmeric

Q27. To determine the melting point of ice, the precaution which is not correct to be followed is : (1)

(a) zero mark of the thermometer remains above the ice surface.

(b) keep stirring the mixture and look at the thermometer.

(c) crush the ice into small pieces.

(d) do not dip the bulb of the thermometer in crushed ice.

Q28. A thermometer has 20 equal divisions between 90°C and 100°C marks. A student while determining the boiling point of water finds that the mercury thread becomes stationary at the 19th mark above 90°C. He should record the boiling point of water as : (1)

(a) 90.19°C (b) 99.5°C

(c) 109°C (d) 119°C

Q29. The first step involved in the separation of mixture of sand, common salt and ammonium chloride is : (1)

(a) Magnetic separation (b) Chromatography

(c) Sublimation (d) Sedimentation and decantation

Q30. The correct procedure for preparing a colloidal solution of egg albumin in water is : (1)

(a) to break the egg shell, take only white portion and add water with constant stirring.

(b) to break the egg shell, take only the yellow portion and add boiling water with constant stirring.

(c) to boil the egg first, to break the egg shell, to add the white portion to the cold water and mix.

(d) to break the egg shell take both white and yellow portions and add boiling water with constant stirring.

Q31. In the mixture of iron filings and sulphur powder : (1)

(a) only iron filings get attracted towards magnet.

(b) only sulphur powder gets attracted towards magnet.

(c) both sulphur powder and iron filings get attracted towards magnet.

(d) neither iron filings nor sulphur powder get attracted towards magnet.

Q32. Rakshita was doing an experiment on chemical reactions. She added dil. Sulphuric acid to zinc granules. She will observe that : (1)

(a) a precipitate is formed

(b) the container becomes cool

(c) the reaction mixture turns yellow

(d) bubbles start coming out from the surface of zinc granules

Q33. Mohan heated a mixture of sulphur and iron filings in a china dish til a grey-black product was formed. On adding carbon disulphide and stirring the contents he observed that : (1)

(a) particles of sulphur dissolve (b) particles of iron dissolve

(c) grey black product dissolves (d) no change takes place

Q34. The crystals of copper sulphate turn white on heating due to : (1)

(a) loss of sulphate ions

(b) loss of copper ions

(c) loss of water of crystallization

(d) decomposition of copper sulphate

Q35. The correct method of obtaining an onion peel is to : (1)

(a) take the thinnest bit after crushing an onion leaf.

(b) make thin section of a thick scale leaf using a blade.

(c) use of forceps to pull out a thin transparent peel from a concave surface of a scale leaf.

(d) use a needle and forceps to remove a thin transparent peel from convex surface of a scale leaf.

Q36. The precaution which is incorrect in an experiment to prepare temporary mount of onion peel is : (1)

(a) the folding of peel should be avoided

(b) use a brush to transfer the peel from watch glass to the slide

(c) remove extra water or glycerine coming out of the cover slip with the help of another cover slip.

(d) While putting a cover slip, bubbles should be avoided.

Q37. Human cheek cells are commonly stained with (1)

(a) methylene blue (b) safranin

(c) acetocarmine (d) eosine

Q38. While observing the slide of a tissue Suresh found that the cells have thickened cell walls and inside the cell, there is no protoplasm. The given tissue must be : (1)

(a) parenchyma (b) collenchyma

(c) sclerenchyma (d) phloem

Q39. A student was asked to write the characteristic features of nerve cell after viewing it under the microscope. The correct features will be : (1)

(a) Oval shaped cells with lobed nucleus

(b) Spindle shaped cells with bands

(c) Loosely packed cells floating in matrix

(d) A cell body with branched cytoplasmic extensions at one end and a long projection at the other end.

Q40. In an experiment to calculate the percentage of water absorbed by raisins a student recorded the mass of dry raisins as 16g and the mass of raisins after soaking in water for four hours as 20g. The percentage of water absorbed by raisins is : (1)

(a) 25% (b) 30%

(c) 60% (d) 40%

Q41. While doing an experiment to establish relationship between weight of a rectangular wooden block lying on a horizontal table and the minimum force required to just move it. Student A performed the experiment on wooden table and calculate force as F_A, student B on table covered with sand calculated force as F_B, student C on table covered with oil poured on it calculated force as F_C. Then : (1)

(a) $F_A < F_B < F_C$ (b) $F_A < F_B > F_C$

(c) $F_A = F_B = F_C$ (d) $F_A > F_B > F_C$

Q42. While performing an experiment to establish relationship between weight of a rectangular wooden block lying on a horizontal table and the minimum force required to just move it using a spring balance, a student calculated the minimum force required as 180 gwt. to move the wooden block of 400 gwt. If he places another block of weight 100 gwt. over it, then the force required will : (1)

(a) remain same (b) decrease

(c) increase (d) may decrease or increase