KENDRIYA VIDYALAYA SANGATHAN

(PATNA REGION)

Summative Assessment – 1 (2014 – 15)

CLASS- IX **F.M.-90**

SUB – SCIENCE **TIME – 3 HOURS**

General Instructions:

(i) The question paper comprises of two sections, A and B. You are to attempt both the sections.
(ii) All questions are compulsory.
(iii) There is no choice in any of the question.
(iv) All questions of section A and all questions of section B are to be attempted separately.
(v) Question numbers 1 to 3 in section A are one mark questions. These are to be answered in one word or one sentence.
(vi) Question numbers 4 to 6 are two mark questions, to be answered in about 30 words each.
(vii) Question numbers 7 to 18 are three mark questions, to be answered in about 50 words each.
(viii) Question numbers 19 to 34 are five mark questions, to be answered in about 70 words each.
(ix) Question numbers 25 to 33 are multiple choice questions based on practical skills and each question carries one mark.
(x) Question numbers 34 to 36 are explanatory questions based on practical skills and each carry two marks.
(xi) The question paper contains value based question to the extent of 3–5 marks.

PTB.

Q.1. **What is the state of water at 0^0 C and 100^0C.**

Q.2. Name the cell organelle which is known as suicide bag.

Q.3. Define inertia.

Q.4. Name the process or the separation technique you would follow to separate the following mixtures.

(i) Muddy water **(ii) Kerosene and water**

(iii) Iron filings and sand **(iii) Sulphur and charcoal**

Q.5. What happens to an animal cell when it is placed in a very dilute external medium ? Why

Q.6. The weight of an object on the surface of moon is 1.67 N and its mass on its surface is 1 kg. Calculate its weight and mass on the surface of earth. (g_e = 10 m/s^2)

Q.7. Ravi Prasad, a farmer has 25 acres of land. He noticed some infection on the leaves of his crops. He called his friend Raghav, Who advised him to use DDT. However, Ravi Prasad preferred to use dry powder of neem leaves as an insecticide.

Answer the following questions based on the above information;

(i) Why did Ravi Prasad prefer using neem powder?

(ii) In your opinion, did he take the right decision?

(iii) Write the values associated with decision taken by Ravi Prasad.

Q.8. (i) Discuss two ways of incorporating desirable characteristics in crop varieties.
(ii) What is intercropping? How are crops selected for intercropping?

Q.9. With the help of a labelled diagram, describe an activity to show that the particles of matter are very small. Use the following materials that have been provided to you.
4 beakers, spatula, 4 test tubes, distilled water and few crystals of potassium permanganate.

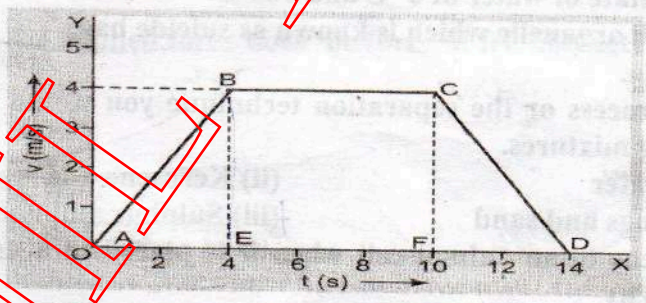
Q.10. (i) Under which category of mixtures will you classify alloys and why?
(ii) A solution is always a liquid. Comment.
(iii) Can a solution be heterogeneous?

Q.11. Draw a plant cell and label important organelles found in it.

Q.12. (i) Wax is heated in a china dish. How will the following change during heating?
(a) Kinetic energy of particle
(b) Inter-particle distance
(ii) Melting points of three substances A, B, C are 52^0C, 175^0C, and 80^0C. Arrange them in the decreasing order of the inter-particle force of attraction in each of them. Give reason for your answer.

Q.13. Why are xylem and phloem called complex tissues? How are they different from one another?

Q.14. Study the given graph and answer the following questions from it.



(i) Which part of the graph shows accelerated motion? Calculate the acceleration.
(ii) Which part of the graph show retarded motion? Calculate the retardation.
(iii) Calculate the distance travelled by the body in first 4 seconds of journey, graphically.

Q.15. (i) When a horse suddenly starts running, a careless rider falls backwards, Explain why.
(ii) State the action and reaction in the swimming action of a swimmer.

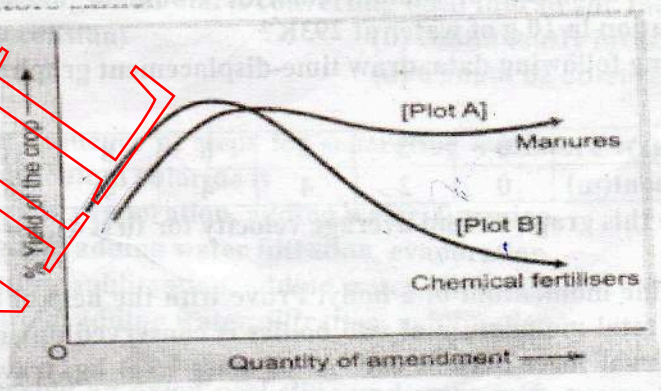
Q.16. What is momentum? Interpret force in terms of momentum. Represent the following graphically.
(i) Momentum versus velocity when mass is fixed.
(ii) Momentum versus mass when velocity is constant.

Q.17. A stone is thrown vertically upwards with a velocity of 40 m/s and is caught back. Taking g = 10 m/s^2, calculate the maximum height reached by the stone. What is the net displacement and the total distance covered by the stone?

Q.18. State the universal law of Gravitation.
The mass of the sun is 2×10^{30} kg and that of the earth is 6×10^{24} kg. If the average distance between the sun and the earth is 1.5×10^{11} m, calculate the force exerted by the sun on the earth and also by the earth on the sun.

Q.19. Comment on the following statements.
(i) Evaporation results in cooling.
(ii) Rate of evaporation of an aqueous solution decreases with increase in humidity.
(iii) Sponge though compressible is a solid.

Q.20. The figure given below shows the two crop fields [plots A and B] have been treated by manures and chemical fertilisers, respectively, keeping other environmental factors same.



Observe the graph and answer the following questions.
(i) Why does plot B show sudden increase and then gradual decrease in yield?
(ii) Why is the highest peak in plot A graph slightly delayed?
(iii) What is the reason for the different pattern of the two graphs?

Q.21. Rama tested the solubility of four substances at different temperatures and found in grams of each substance dissolved in 100 g of water to form a saturated solution.

S. No.	Substance Dissolved (in grams)	Temperature (K)		
		293 K	313 K	333 K
		Solubility		
(i)	Ammonium chloride	37 g	41 g	55 g
(ii)	Potassium chloride	35 g	40 g	46 g
(iii)	Sodium chloride	36 g	36 g	37 g
(iv)	Potassium nitrate	32 g	62 g	106 g

(i) Which substance is least soluble in water at 293K?
(ii) Which substance show maximum change in its solubility when temperature is raised from 293K to 313K?
(iii) Find the amount of ammonium chloride that will separate out when 155 g of its solution at 333 K is cooled to 293 K.
(iv) What is the effect of change of temperature on the solubility of a salt?
(v) What mass of sodium chloride would be needed to make a saturated solution in 10 g of water at 293K?

Q.22. Using following data, draw time-displacement graph for a moving object.

Time(s)	0	2	4	6	8	10	12	14	16
Displacement(m)	0	2	4	4	4	6	4	2	0

Use this graph to find average velocity for first 4s, for next 4 s and for last 6s.

Q.23. Define momentum of a body. Prove with the help of third law of motion that the total momentum of two bodies is conserved during collision, provided no external force acts. A car 'A' of mass 1500 kg, travelling at 25 m/s collides with another car 'B' of mass 1000 kg travelling at 15 m/s in the same direction. After collision, the velocity of car A becomes 20 m/s. Calculate the velocity of car B after collision.

Q.24. (i) What are complex permanent tissues? Name the two types of complex permanent tissues.
(ii) Name the living component common to both the complex permanent tissues found in plants. What is its function?

(iii) Give any two ways in which these tissues differ functionally from each other.

SECTION – B

Q.25. Deepak was asked to prepare two samples of suspension by his teacher. When he went near the lab shelf he found the following substances.
(i) Fine sand (ii) Common salt (iii) Starch powder
(iv) Alum (v) Egg albumin (vi) Clay
To make a suspension Deepak should select
(a) (i) and (ii) b) (i) and (vi) (c) (ii) and (iii) (d) (iv) and (v)

Q.26. Which one of the following will result into the formation of compound of iron and sulphur?
(a) Mixing of iron filings and sulphur powder at room temperature.
(b) Adding iron filings to molten sulphur
(c) Heating the mixture of iron filings and sulphur powder.
(d) Addition of carbon disulphide to a mixture of iron filings and sulphur powder.

Q.27. Rama sets up an apparatus to find the melting point of ice. When half of the ice had melted, the temperature shown by the thermometer is
(a) more than 0^0C. (b) less than 0^0C. (c) 0^0C. (d) 100^0C.

Q.28. When on heating water starts converting itself into steam, the temperature
(a) remains constant (b) continuously increases
(c) decreases (d) Cannot be observed.

Q.29. The correct sequence of steps for separating a mixture of sand, ammonium chloride and sodium chloride is
(a) sublimation, evaporation, adding water, filtration
(b) sublimation, adding water filtration, evaporation.
(c) evaporation, sublimation, adding water, filtration
(d) evaporation, adding water, filtration, sublimation

Q.30. While observing an onion peel slide under the microscope, Rita noted some characteristics. Which of the following characteristics did she observe?
(a) Presence of single nucleus in a cell.
(b) Cells attached edge to edge without intercellular spaces.
(c) Presence of cell wall around each rectangular cell.
(d) All of these.

Q.31. Arun, Deepa, Uma and Priya were asked to select a plant material which would not give blue-black colour with iodine solution. Who did not select the right material?

(a) Arun selected maize grains. **(b) Deepa selected wheat grains.**
(c) Uma selected groundnut seeds. **(d) Priya selected potato.**

Q.32. Deepak washed a few grains of tuvar dal in water. The water became yellow. He then added a few drops HCl to the same test tube, the water turned pink in colour, From the above test Deepak conclude that suvar dal contains.

(a) proteins. **(b) starch.** **(c) turmeric** **(d) metanil yellow**

Q.33. A permanent slide shows thin walled isodiametric cells with a large vacuole. The slide contains

(a) parenchyma cells **(b) nerve cells**
(c) sclerenchyma cells **(d) collenchyma cells**

Q.34. On burning magnesium ribbon, a white ash is obtained that turns a red litmus solution to blue. What is the name and nature of the white ash?

Q.35. A student put five raisins in two beakers A and B. Beaker A contained 50 ml of distilled water and beaker B had 50 ml of saturated sugar solution. What would the student observe after some time?

Q.36. In which direction of the applied force does the force of friction act?

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