NAIR COACHING ACADEMY

| Class: 9 | SA1: Paper 2 | Date: 7/9/14 |
| Time: 180 min | Science (Set 1) | Marks: 90 |

Q no 1 to 3 and 25 to 33 carry 1 mark each	4 to 6 and 34 to 36 carry 2 marks each
7 to 18 carry 3 marks each	19 to 24 carry 5 marks

SECTION A

1. Why does the smell of hot cooked food reach you several metres away within second?

2. Apart from changing the magnitude of velocity of an object (or) changing the direction of motion of an object what other changes can force bring on an object?

3. Name the process in which diffusion takes place through a selective permeable membrane.

4. Define a solution. Give an example of (i) gas in liquid solution (ii) gas in gas solution

5. (a) In which form does the mitochondria release energy? Write its full form.

   (b) The inner membrane of mitochondria is deeply folded. What is the advantage of these folds?

6. A man weighs 600 N on the surface of earth. Find his mass and weight on surface of moon

   ($g_{earth} = 10$ m/s^2)

7. (i) Arrange the following substances in increasing order of force of attraction between the particles.

   (a) water (b) hydrogen (c) sand

   (ii) Why does the temperature remain constant at the melting point?

   (iii) Which property of gases makes it possible to fill large volume of gases in small cylinders?

8. What are the advantages of composite fish culture?

9. (a) Differentiate between chemical and physical change? (b) Give one example of each. (2 + 1)

10. A car travels from stop A to stop B with a speed of 30 km/h and then returns back to A with a speed of 50 km/h. Find its: (i) Displacement.(ii) Total distance travelled. (iii) Average speed.

11. (a) Statement of Newton's first law of motion.

    (b) In the given experimental set-up, a student gives the card a sharp, fast horizontal flick with a finger.
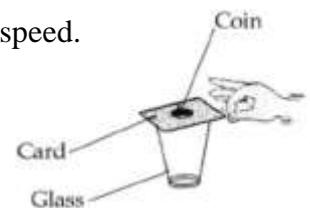
(i) What will happen to the coin? (ii) State reason for your answer. (1 + 2)

12. (a) Define acceleration due to gravity. (b) A stone is released from the top of a tower of height 19.6 m. Calculate its final velocity just before touching the ground. ($g = 9.8$ m/s^2) (1 + 2)

13. (i) What type of tissue is bone? (ii) What is the hard matrix made up of?

(iii) Write the functions of ligaments and tendons.

14. Derive expression for force of attraction between two bodies.

15. Describe an activity to demonstrate endosmosis and exosmosis. Draw a diagram also.

16. Mention the types of honey bee you will prefer to rear if you are running an apiary. Give any three reasons for your choice. List any two factors on which the quality of honey depends.

17. (a) Define the term inertia. Name the quantity that measures it.

(b) Which physical quantity corresponds to rate of change of momentum?

18. Arnesh is a science student. In his holidays, he went to his native village. He observed that kerosene oil in the stove was not burning well. He asked his grandmother about this. She told him that the kerosene was mixed with water due to falling of a water tub in the kerosene can. Arnesh separated kerosene from mixture. Now, Arnesh's grandmother was happy and she was satisfied with the education of Arnesh. (a) Name the instrument used by Arnesh to separate the mixture of kerosene and water. (b) Write the principle of technique used by Arnesh. (c) Write one industrial application of this technique.

19. (a) List any four properties of a colloid and mention any two properties in which colloids differ from suspension. (b) State what is Tyndall effect? Which of the following solutions will show Tyndall effect? Starch solution, sodium chloride solution, Tincture iodine, air (3 + 2)

20. Compare in tabular form , the properties of Solids, Liquids and Gases with respect to :

(a) Shape (b) Volume (c) Compressibility (d) Diffusion (e) Fluidity or Rigidity

21. (i) Distinguish between striated, Unstriated and cardiac muscles on the basis of their structure and location in the body. (ii) Name the type of tissue that forms the lining of : (a) blood vessels (b) kidney tubules (c) small intestine (d) respiratory tract

22. (a) How are new varieties of poultry birds with desired traits produced?

   (b) Mention any four desirable traits for which new varieties are produced?

   (c) List the management practices that are common between dairy and poultry farming. (1+2+2)   Or

22. *Explain five different factors for which varietal improvement is carried out by the farmers.*

23. (a) Draw a velocity time graph for an object using given data:

Time (s)	0	5	10	15	20	25
Velocity (m/s)	0	10	20	30	40	50

   (b) State the kind of motion the graph represents.

   (c) Calculate the distance travelled by the object in 15s. (2+1+2)

24. (a) Define momentum. (b) Explain why a player moves his hands backwards while trying to catch a swiftly moving cricket ball. (c) A bullet of mass 20g is fired at a speed of 400 m/s from a gun of mass 4 kg. Find the recoil velocity of the gun. (1 + 2 + 2)

SECTION B

25. Four students took four beakers A, B, C, D half filled with water. They dissolved soil, chalk powder, sugar, fine sand in them and after observation found that –
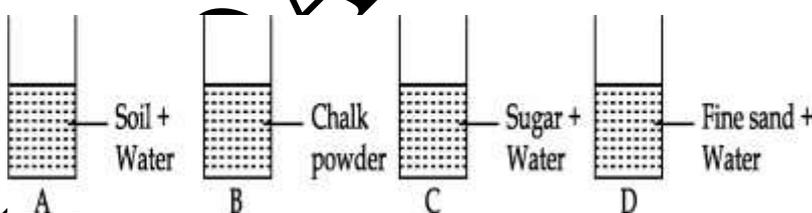
(a) A, B, D are suspensions   (b) B, C, D are suspensions

(c) C, B, A are suspensions   (d) A, C, D are suspensions

26. Colour of compound of Iron and Sulphur is :

 (a) Black   (b) Green   (c) Yellow   (d) None of these

27. The colour of Sulphur powder and $CuSO_4$ crystals respectively is :

 (a) blue and yellow   (b) both yellow   (c) yellow and blue   (d) both blue

28. Separation of sand from ammonium chloride depends on the physical property of :

    (a) density   (b) Volatility   (c) Specific gravity   (d) melting point

29. On examining the onion peel which statement is not found correct?

    (a) Intercellular space is absent   (b) Intracellular space is present

    (c) Vacuole is present   (d) Nucleus is present.

30. One of the following is not visible in cheek cells.

    (a) Cell membrane   (b) Cell wall   (c) nucleus   (d) cytoplasm

31. Samples of Arhar dal were taken in four test tubes with some water in each and labeled P, Q, R & S. A few drops of the following were added to the test tubes; distilled water to P, HCl to Q, NaOH to R and alcohol to S. We would be able to confirm adulteration of the dal with metanil yellow in test tube :

    (a) P   (b) Q   (c) R   (d) S

32. A student soaked 10 g raisins in 75 ml of distilled water in two beakers A and B. He maintained beaker A at 20 °C and beaker B at 40 °C. After an hour, the percentage of water absorbed will be :

    (a) Same in beaker A and B   (b) more in A than in B

    (c) more in B than in A   (d) twice as much in B as in A

33. The normal reaction of the body is always equal to the :

    (a) mass of body   (b) weight of body   (c) volume of body   (d) none of these

34. What happens when a mixture of iron filings and sulphur powder is heated?

35. The correct observation to identify sclerenchyma tissue is _ _ _ _.

36. 5 g of raisins were placed in distilled water for 24 hours. The mass of soaked raisings was found to be 10 g. The percentage of water absorbed by raisins is _ _ _ _.

Excellence is a continuous process and not an accident.

Anyone who has never made a mistake has never tried anything new.

So make mistakes confidently, but avoid repeating them to achieve Excellence .

ALL THE BEST 👍

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For solutions: Contact Nair Sir on 9850667744 between

10 am to 11 am.