MAHD AL ULOOM INTERNATIONAL SCHOOL - JEDDAH
SUMMATIVE ASSESSMENT- 1 (MODEL), JUNE 2014
SCIENCE

Class: IX
Date: 22-06-2014

Hall Ticket No. ________________
Max. Marks: 90
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 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.
(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 in one sentence.
(vi) Question numbers 4 to 7 in Sections-A are two marks questions. These are to be answered in about 30 words each.
(vii) Question numbers 8 to 19 in Section-A are three marks questions. These are to be answered in about 50 words each.
(viii) Question numbers 20 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
(ix) Question numbers 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

1. Arrange the three states of matter in increasing order of their compressibility.

2. A ball is thrown vertically upwards. What is its momentum at the highest point? What is the value of acceleration at this point?

3. Name the plastid which stores starch, oils and protein granules.

4. What is meant by concentration of a solution? A solution contains 50g common salt in 350g of water. Calculate the concentration of the solution.

5. List in tabular form, any two differences between mass and weight

6. Which cell organelle is called the suicidal bag of the cell and why?
7. What are complex permanent tissues? Give two examples

8. What is meant by free fall? A ball is dropped from the roof of a building. It takes 10 seconds to reach the ground. Find the height of the building. \( (g=9.8 \text{m/s}^2) \)

9. (a) State Newton’s first law of motion.

(b) Look at the diagrams given below and answer the following question.

![Diagram](image)

In which case will the object move and in which direction? Give reason in support of your answer.

10. State Newton’s universal law of gravitation. Express it mathematically. Mention any two Phenomena which were explained on the basis of this law.

11. What are complex tissue? Name the two types of complex permanent tissue present in plants? Give one function of each complex tissue.

12. (a) Write two points of difference between nuclear region of a bacterial cell and nuclear region of an animal cell.

(b) Which structure present in the nuclear region of a living cell bear genes?

13. Why is mitochondria called power house of cell? List any two similarities and one difference between mitochondria and plastid.

14. List any six desirable agronomic characteristics for crop improvement.

15. Identify the animal tissues from the given descriptions and also mention their location in the human body.

Tissue ‘A’ - cells are filled with fat globules and the tissue acts as an insulator.
Tissue ‘B’ - has cylindrical branched cells and the tissue shows rhythmic contraction and relaxation thought life.

16. Convert the following :-

a) \( 573 \text{K} \)  
   b) \( 36 ^\circ \text{C} \)  
   c) \( 373 ^\circ \text{C} \)
17. a) Explain why some of the leaves may get detached from a tree if we vigorously shake its branch.

    b) When a fast moving horse stops suddenly a careless rider falls in the forward direction. Give reason for it.

18. Two bodies ‘P’ and ‘Q’ having masses m\(_1\) and m\(_2\), when separated by a distance d\(_1\) exert a force ‘F’ on each other. What happens when

   (a) masses of both the objects are doubled.
   (b) distance between the two bodies is reduced to half.
   (c) the space between the two objects has no air and it is complete vacuum.

19. Study the diagram shown below and answer the following questions:

   ![Diagram of a beaker with a watch glass, ink, and water]

   (i) Name and define the process shown in the diagram.
   (ii) Which type of substance can be separated by this method?
   (iii) What can we interpret about the nature of ink?

20. (a) What do the terms ‘macronutrients’ and ‘micro-nutrients’ signify?
    (b) Briefly describe the formation of vermicompost and green manure.
    (c) List two advantages of using manure for nutrient management

    OR

    (a) Ajay, an illiterate farmer does not understand the difference between manure and fertilizers. Help him to differentiate between the two, in terms of their composition.
    (b) Justify the use of manure highlighting two of its advantages.
    (c) Mention one drawback of excessive use of fertilizers.

21. Define the following terms: (any two)

    (i) Rigidity
    (ii) Compressibility and
    (iii) Density

   Compare any two states of matter on the basis of above defined properties.

    OR

    (a) State one similarity and one difference between evaporation and boiling.
    (b) Account for the following:

        (i) We wear cotton clothes in summer.
        (ii) A wet handkerchief is placed on the forehead of a person suffering from high fever.
        (iii) Wet clothes dry slowly during rainy season.
22. (a) List any three characteristic of colloid.
   (b) Name the two components of a colloid.
   (c) Identify colloid from the following mixtures:
       Muddy water, sugar in water, ink, blood, soda water, foam
       OR
   (a) Enumerate any two differences between simple distillation and fractional distillation
   (b) Draw a labeled diagram showing the process of fractional distillation

23. The graph given alongside shows how the speed of a car changes with time.
   (i) What is the initial speed of the car?
   (ii) What is the maximum speed attained by the car?
   (iii) Which part of the graph shows zero acceleration?
   (iv) Which part of the graph shows varying retardation?
   (v) Find the distance travelled in first 8 hours.

![Graph showing speed vs time](image)

OR

   a) Define force.
   b) The velocity-time graph of a car of 1000 kg mass is given below.

![Graph showing velocity vs time](image)

When is the maximum force acting on the car? Give reason for your answer.

(ii) What is the retarding force?
(iii) For how long is there no force acting?
24. a) Define ‘inertia’. A shopkeeper shows three toys to a child made up of aluminium, steel and wood, of same shape and volume. Which one of them would have highest inertia? Why?

(b) Describe in brief an activity to illustrate the property of inertia of rest.

OR

An object starts linear motion with a velocity „u‟ and under uniform acceleration „a‟ it acquires a velocity „v‟ in time „t‟. Draw its velocity time graph. From this graph obtain the following equations.

a) \( V = u + at \)

b) \( S = u + \frac{1}{2}at^2 \)

Section-B

25. Which of the following solutions will be maximum stable?

(a) Salt and sugar in water  (b) Milk and blood
(c) Mud and sand in water  (d) sand in kerosene

26. When a true solution is filtered, the residue left on the filter paper is:

(a) Very less in amount  (c) Large in amount
(b) Pale yellow in colour  (d) Zero

27. When dilute sulphuric acid is added to zinc granules, it is observed that:

(a) a precipitate is formed
(b) the reaction mixture turns yellow
(c) the container becomes hot
(d) bubbles start coming out from the surface of zinc granules

28. In the determination of melting point of ice, correct reading of melting point is noted in the thermometer when:

(a) temperature starts rising
(b) temperature becomes constant
(c) ice starts melting
(d) whole of the ice gets melted

29. The process used to separate ammonium chloride from a mixture of common salt, sand and ammonium chloride is:

(a) Filteration  (c) Distillation
(b) Sublimation  (d) Evaporation
30. The colour of the mixture of iron filings and sulphur powder after heating changes to :

(a) yellow  (c) black
(b) brown   (d) green

31. Out of sand, common salt and ammonium chloride. The substance that dissolves in water is :

(a) sand only
(b) common salt only
(c) both sand and common salt
(d) both common salt and ammonium chloride

32. A student recorded the mass of dry raisins as 5g and the mass of raisins after soaking in water as 48g while performing the above experiment. The percentage of water absorbed by raisin is :

(a) 20%  (b) 30%  (c) 60%  (d) 40%

33. For observing onion peel cells the stain generally used is :

(a) Methylene blue  (b) Safrin
(c) Phenolphthalein  (d) Glycerine

34. Carefully see the figure. The food sample has :

(a) Sugars  (b) proteins
(c) starch   (d) fats

35. Abhay observed a slide of plant tissue under the microscope and drew the sketch as under. The correct identification of the tissue is:-

(a) Parenchyma (c) (c)Sclerenchyma
(b) Collenchyma (d) (d)None of these
36. The correct labeling of the diagram shown below is:

![Diagram](image)

(a) A – cotton plug, B – impure NH₄Cl, C - mixture of NH₄Cl and common salt
(b) A – NH₄Cl vapours, B - pure NH₄Cl, C - mixture of NH₄Cl and common salt
(c) A – cotton plug, B – pure NH₄Cl, C - mixture of NH₄Cl and common salt
(d) A – NH₄Cl vapours, B – impure NH₄Cl, C - mixture of NH₄Cl and common salt

37. Fathima, Nubula, Hannath and thanveer made the arrangement I, II, III, IV for determination of boiling point of water. Which one of them has made the correct set up?

![Diagram](image)

(a) I
(b) II
(c) III
(d) IV

38. When a piece of magnesium ribbon is brought near the flame of Bunsen burner, it is observed that:

(a) Tip of the magnesium ribbon becomes red hot but it does not burn with a flame.
(b) The magnesium ribbon burns with a dazzling white flame.
(c) The magnesium ribbon melts.
(d) Lot of smoke is produced.

39. A mixture contains only Iodine, Ammonium chloride and Sand. Only Iodine and Ammonium chloride sublime. Only Iodine dissolves in carbon tetra chloride. How will you separate the three components? Sequence of steps will be

(a) By sublimation addition of CCl₄
(b) Addition of CCl₄, filtration, sublimation
(c) Sublimation, addition of H₂O, filtration.
(d) evaporation, distillation, crystallization
40. While preparing a temporary mount of onion peel cells or human check cells, a coverslip is put on the mounted material on a slide very gently to:

(a) avoid the crushing of mounted material
(b) avoid the entry of air bubbles
(c) avoid oozing of stain
(d) avoid oozing of glycerine

41. The following substances are added to water in a beaker as shown below. The mixture is stirred well. A true solution is found in the beaker

![Diagram of solutions](image)

(a) A    (b) B    (c) C    (d) D

42. How much force is required to move an object with a lowest velocity?

a) No force is required  
   b) Force should be greater than frictional force
   c) Force should be less than frictional force  
   d) None of these

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