SUMMATIVE ASSESSMENT – I, 2012 SC1-020

SCIENCE

Class – IX

TIME 3 HOURS MM 90

GENERAL INSTRUCTIONS :

i) The question paper consists 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 such question 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, to be answered in one word or one sentence.
vi) Question numbers 4 to 7 in section A are two mark questions, to be answered in about 30 words each.
vii) Question numbers 8 to 19 in section A are three mark questions, to be answered in about 50 words each.
viii) Question numbers 20 to 24 in section A are five mark questions, 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 one mark questions. You are to choose the most appropriate answer out of the 4 provided to you.

SECTION-A

1. The molecules of water have more energy as compared to molecules of ice at same temperature. Justify this statement. (1)

2. Identify and name the following cell structures : (1)
(a) The undefined nuclear region of prokaryotic cell.
(b) Site of energy release inside the cell.

3. Name the unbalanced force which slows down a moving bicycle when we stop pedalling it. (1)

4. 2 ml of dettol is added to a beaker containing 500 ml of water and stirred. State four observations that you make. (2)

5. Properties of a compound are different from its constituents, while a mixture shows the properties of its constituent elements. Justify this statement taking the example of iron and sulphur. (2)

6. (a) Voluntary muscles are also known as skeletal muscles. Justify.
(b)Give two structural characteristics of these voluntary muscles. (2)

7. A coin and a piece of paper are dropped simultaneously from the same height. Which of the two will touch the ground first ? What will happen if they are dropped in vacuum ? Give reason for your answer. (2)

8. (a) Name one indigenous and one exotic breed of domestic fowl.
(b) What are the two main products obtained from raising domestic fowl ?
(c) Name two vitamins that should be included in high amount in poultry feed. (3)

9. (a) State two characteristics of an ideal cattle shed.
(b) Cattles are mainly reared for milk or performing agricultural tasks. What are these two categories of cattles known as?
(c) Name two indigenous breeds of cattles. (3)

10. Carbon dioxide was taken in an enclosed cylinder and compressed by applying pressure
(a) Which state of matter will we obtain after completion of the process?
(b) Name and define this process.
(c) What is the common name of the product obtained in the above process? (3)

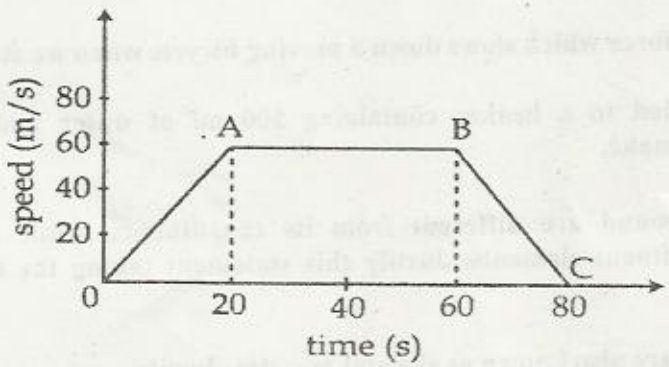
11. Write any two differences between physical and chemical changes. Give one example in which both physical and chemical changes take place. (3)

12. (a) List any two structural differences and two similarities between a plant cell and an animal cell.
(b) What would happen if an animal cell is kept in distilled water for 24 hours ? (3)

13. State one distinguishing feature and one similarity between the two types of transporting tissues present in plants. (3)

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

15. Study the speed time graph of a car along side and answer the following questions.



(a) What type of motion is represented by OA ?
(b) Find acceleration from B to C.
(c) Calculate the distance covered by the body from A to B. (3)

16. A passenger in a moving car slips to one side of the seat when the car takes a sharp turn. Give reason for it. (3)

17. A constant force of friction of 50 N is acting on a body of mass 200 kg moving initially with a speed of 15 m/s. How long does the body take to stop ? What distance will it cover before coming to rest ? (3)

18. Write three differences between gravitational constant and acceleration due to gravity. (3)

19. The gravitational force between two objects is 100 N. How should the distance between these objects be changed so that force between them becomes 50 N. (3)

20. (a)What are the common names of *Apis dorsata, Apis florae and Apis cerena indica*?
(b) Name one Italian bee variety. Also justify the use of Italian bee for honey production giving two reasons.
(c)State one factor which affects the quality of honey produced. (5)

OR

(a) How do the following factors improve the crop yield ?
(i) Shorter maturity duration.
(ii) Biotic and abiotic resistance.
(iii) Wider adaptability.

(b) State any two methods of improving crop variety.

21. (a)Arrange the following in the increasing order of
(i) force of attraction
(ii) Intermolecular space
(iii)Iron nail, kerosene and oxygen gas.

(b)Define the following terms
(i) Rigidity
(ii) Compressibility
(iii) Diffusion (5)

OR

5 mL of water was taken in a test tube and china dish separately. These samples were then kept under different conditions as below
(a) Both the samples are kept under a fan.
(b) Both the samples are kept inside a cup board.
State in which case evaporation will be faster ? Give reason to support your answer.
How will the rate of evaporation change if above activity is carried out on a rainy day. Justify your answer.

22. (a) Tabulate the difference between suspension and true solution with respect to.
(i) Filtration
(ii) Transparency
(iii) Stability

(b) Give two examples from daily life where Tyndal effect is observed. (5)

OR

(a) Outline a scheme to separate the constituents of mixture containing Iron fillings, common salt and sand.

(b) Write any two applications of crystallisation.

23. (a) Derive second equation of motion graphically, where the symbols have their usual meanings.

(b) A car accelerates uniformly from 18 km/h to 36 km/h in 5 seconds. Calculate the acceleration and the distance covered by the car in that time. (5)

OR

(a) Define uniform circular motion.

(b) Ram goes for a morning walk in a circular park daily. He completes one revolution of the park in 4 minutes. Find his speed if the diameter of the park is 420 m.

(c) Draw velocity-time graph for uniform motion along a straight line. How can you find distance covered by a body from this graph ?

24. (a) Define inertia. You are provided with three bodies made up of wood, rubber and iron of the same shape and size. Which one of them will have greater inertia. Explain it.

(b) When a striker hits the bottom of the pile of coins placed at the centre of a carom board, only the lowest coin is removed. Give reason for it. (5)

OR

(a) Define momentum. Write its S.I. unit.

(b) A car and a truck have same momentum. Whose velocity is more and why?

(c) A bullet of mass 20 g moving with a speed of 500 m/s strikes a wooden block of mass 1 kg and gets embedded in it. Find the speed with which block moves along with the bullet?

SECTION B

25. Ekta added 2 – 3 drops of iodine solution to potato extract. The colour change which she is likely to observe is

a) Colour changes to brown
b) Colour changes to blue black
c) Colour changes to black
d) Colour changes to deep orange

26. The colour change which would be observed when Conc. Hydrochloric acid is added to the extract of dal adulterated with metanil yellow is

a) colour of extract changes to deep pink
b) colour of extract changes to deep yellow
c) colour of extract disappears
d) colour of extract changes to deep orange

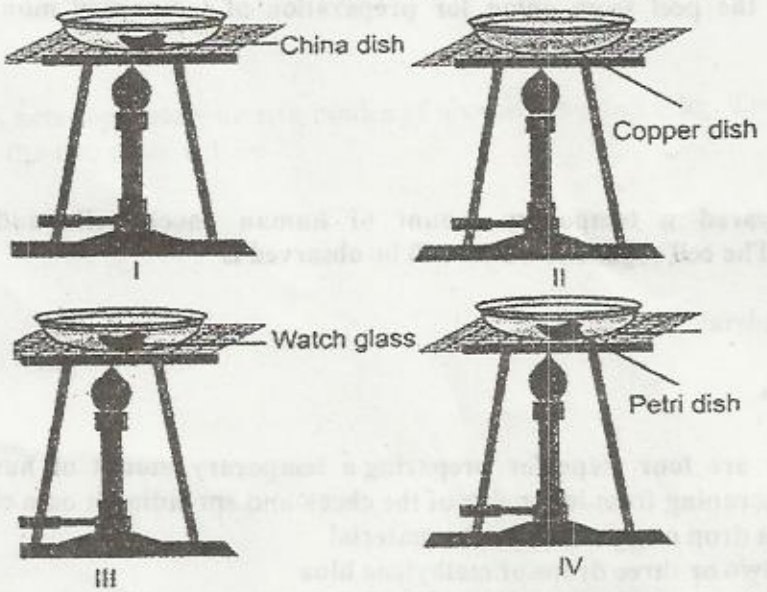
27. A beaker contains 50 g of ice and water mixture. The temperature of this mixture is
a) Less than $0\ ^0C$
b) Less than $0\ ^0C$
c) $0\ ^0C$
d) $4\ ^0C$

28. In order to find the boiling point of water is that the bulb of the thermometer should not touch the sides of the beaker. This precautions is taken because:
a) Sides of the beaker are slightly at a higher temperature than 100C.
b) Sides of the beaker are at slightly lower temperature than 100C.
c) The bulb of thermometer is likely to break.
d) None of the above.

29. The current sequence of steps taken for separating the mixture of ammonium chloride , sand and common salt is:
a) Filtration, evaporation ,sublimation and dissolving in water
b) Sublimation, dissolving in water, filtration and evaporation
c) Filtration , dissolving in water, sublimation and evaporation
d) Evaporation, dissolving in water, filtration, sublimation

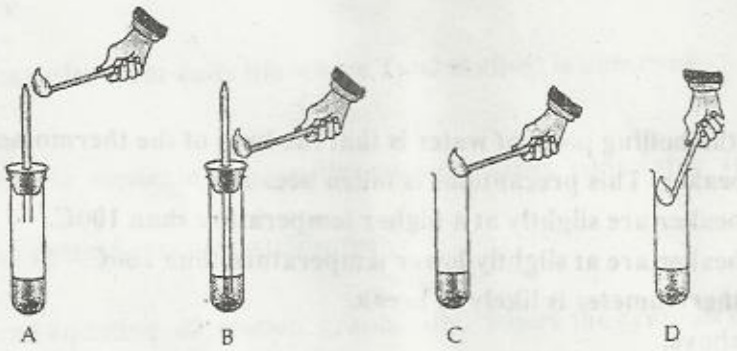
30. A student was asked to prepare a true solution of sugar in water. By chance, he added sugar in excess. He stirred for quiet sometime but some of it settled down. He filtered the contents. The filtrate will be
a) True solution
b) Colloidal solution
c) Suspension
d) Can be a true or colloidal solution

31. The correct procedure of heating a mixture of iron filings and a mixture of sulphur powder is:



a) i b) ii c) iii d) iv

32. Ankur was doing an experiment to carry out the reaction of zinc granules with dil. Sulphuric acid. He observed that a gas is being evolved. The safest method to detect whether the gas produced is hydrogen is:



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

33. When a magnet is moved repeatedly through a mixture of iron filings and sulphur powder , the observation which is correct is:
   a) Iron filings will stick to the magnet
   b) A black mass of iron sulphide will be produced
   c) Sulphur powder will be left in a tray
   d) Both (a) and (c)

34 An iron nail is kept in a beaker containing copper sulphate solution. In the beaker a sensitive thermometer is suspended and the temperature of copper sulphate solution is recorded. The nail is taken out after 10 minutes and the temperature is again recorded. The thermometer at the end of the experiment records.
   a) Higher temperature
   b) Lower temperature
   c) No change in temperature
   d) Change in temperature depends upon the amount of copper sulphate solution taken

35 To take out the peel from onion for preparation of temporary mount of it we use
   a) Needle
   b) Brush
   c) Forceps
   d) Knife

36 Raman prepared a temporary mount of human cheek cells and observed it under a microscope. The cell organelle which will be observed is
   a) Cell wall
   b) Mitochondria
   c) Nucleus
   d) Nucleolus

37 Given below are four steps for preparing a temporary mount of human cheek cells
   I. Taking scraping from inner side of the cheek and spreading it on a clean slide
   II. Putting a drop of glycerine on the material
   III. Adding two or three drops of methylene blue
   IV. Rinsing the mouth with fresh water and disinfectant solution

The correct option is

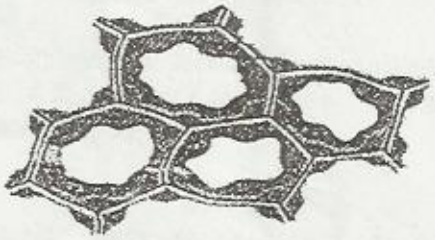
a) (i) (ii) (iii) (iv)
b) (iv) (i) (iii) (ii)
c) (iv) (i) (ii) (iii)
d) (i) (iii) (ii) (iv)

38 While preparing a temporary mount of onion peel or cheek cells, a coverslip is placed on the mounted material very gently to avoid

a) Crushing of the material
b) Avoid entry of air bubbles
c) Avoid oozing of stain
d) Avoid oozing of glycerine

39 Raman observes a permanent slide of plant tissue under a microscope as shown in the figure below. He identifies the tissue as

a) Transverse section of collenchymas
b) Longitudinal section of collenchymas
c) Transverse section of sclerenchyma
d) Longitudinal section of sclerenchyma



40 While conducting an experiment to calculate the percentage of water absorbed by raisins which of the following materials is not required?

a) Blotting paper
b) Dry raisins
c) Weighing balance
d) Needle

41. A force 15 N acts separately on two bodies of masses 3 kg and 5 kg. The ratio of accelerations produced in the two cases will be

a) 5:3
b) 3:5
c) 8:15
d) 15:8

42. What is the S.I unit of weight?

a) g wt
b) Newton
c) Dyne
d) Kg wt

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