

QUESTION BANK FOR MCQ'S class 9th Science SA1

(Practical Based)

Experiment-1. Analysing starch and adulterants in food items

Aim of the experiment: To test: (a) the presence of starch in the given food sample (b) the presence of the adulterant metanil yellow in dal.

1. Which of the under mentioned food groups will not turn blue-black when treated with iodine?
 - (1) Rice, potato, bread
 - (2) bread, wheat, corn flour
 - (3) rice water, boiled potato, corn starch
 - (4) dal, fish, meat
2. Metanil yellow, an adulterant used in arhar dal, is basically:
 - (1) An acid used in toilet cleaner.
 - (2) An inorganic dye used in leather, paper and textile industries.
 - (3) A detergent used as washing powder.
 - (4) An organic dye used in cooking.
3. Ravjna was trying to test the presence of starch in potato tuber. She forgot the reagent with which the starch given blue colour. Help her to select the correct stain from the following:
 - (1) Safranin
 - (2) Methylene blue
 - (3) Iodine
 - (4) Eosin
4. When iodine solution was added to four samples of food I, II, III, IV which will not develop blue-black colour ?
 - (i) Boiled rice
 - (ii) rushed potato
 - (iii) Boiled arhar dal.
 - (iv) Powdered arhar dal.
 - (1) I,II
 - (2) I, II, III
 - (3) I,II, IV
 - (4) III, IV
5. When 2-4 drops of conc. Hydrochloric acid are added in the given sample of arhar dal the pink colour is due to :
 - 1) Metanil yellow
 - 2) Starch
 - 3) Turmeric powder
 - 4) Chalk powder.
6. Which of the following will turn blue-black when iodine solution is poured over it ?
 - 1) Sugar
 - 2) Butter
 - 3) Potato extract
 - 4) Boiled egg white
7. Sidak added 1 or 2 drops of iodine to three test tubes A,B and C, containing 2 ml of food sample. A dark blue black colour appeared in test tube A and B. the correct order of the food samples taken in the three test tubes A,B and C is :
 - 1) Rice, dal, potato
 - 2) Rice, potato, dal
 - 3) Potato, dal, rice
 - 4) Rice, dal, potato
8. The following statement describe the step of detect the presence of metanil yellow in dal. One of the four statements given below is incorrect.
 - a) Take 2 mL of food extract.
 - b) Gind 3-5 g of dal and prepare solution.
 - c) Add 2-4 drops of conc. Sulphuric acid
 - d) Filter the contents and collect the filtrate

The incorrect statement is – (1) b). 2. a) 3 c) 4 d)

1. 4)	2. 2)	3. 3)	4. 4)
5. 1)	6. 3)	7. 2)	8. 3)

Experiment -2 True solutions, suspensions and colloids

Aim of the experiment: To prepare:

- a) a true solution of common salt, sugar and alum.
- b) A suspension of soil, chalk powder and fine sand in water
- c) A colloid of starch in water and egg albumin in water and distinguish between these on the basis of :

* Transparency

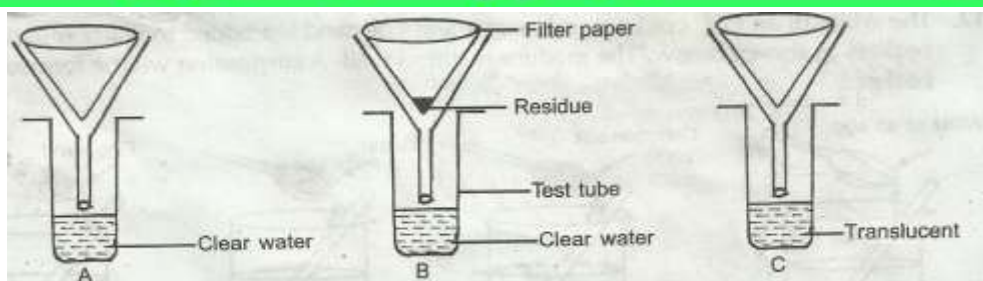
* filtration criterion

* Stability

1. Which of the following shows Tyndall effect ?
 - 1) True solution
 - 2) Colloidal solution
 - 3) Suspension
 - 4) Colloidal solution and suspension.
2. Which of the following is stable when allowed to stand undisturbed for sometime ?
 - 1) Sugar solution
 - 2) Alum
 - 3) Salt solution
 - 4) All of these.
3. A suspension of chalk in water can be prepared:
 - 1) by placing a piece of chalk in water
 - 2) by placing powdered chalk in water
 - 3) by placing powdered chalk in water and shaking it vigorously
 - 4) by placing powdered chalk in dil. HCl.
4. A suspension of chalk and water is subjected to filtration :
 - 1) the filtrate contains some chalk particles
 - 2) the chalk particles are left on the filter
 - 3) nothing passes out of the filter paper
 - 4) none of these
5. Ankita was asked to prepare a true solution of alum. She followed few steps:
 - i) Took a beaker, poured 20 mL of distilled water
 - ii) Added a pinch of powdered alum in the beaker containing distilled water
 - iii) Now a true solution of alum in water was ready.
 - iv) Stirred the water in the beaker with a glass rod.

Choose the correct procedure sequence :

- 1) i) ii) iv) iii)
 - 2) i) iv) ii) iii)
 - 3) i) iii) ii) iv)
 - 4) i) ii) iii) iv)
6. Three students Sidak, Ravi, Noor were given funnels, filter paper, test tubes, test tube stands, common salt, chalk powder, starch. They prepared the true solution, suspension, colloidal solution. The tubes were arranged in a test tube stand as shown in the figure in a test tube stand. They observed the filtrate in the test tubes and residue on the filter paper and concluded.
- 1) Filtrate is clear and no residue is left.
 - 2) Filtrate is clear and residue is left.
 - 3) Filtrate is translucent and no residue is left.



Which of the following is correct ?

- 1) both A and C are solutions
- 2) both A and B are suspensions
- 3) only C is colloid
- 4) neither A is colloid nor B is suspension.

- Ans
- 1- (4)
 - 2- (4)
 - 3- (3)
 - 4- (2)
 - 5- (1)
 - 6- (3)

Experiment-3 Mixtures and Compounds

Aim of the experiment: To prepare (a) a mixture (b) a compound using iron filings and sulphur powder and distinguish between these on the basis of :

- i) Appearance i.e., homogeneity or heterogeneity.
- ii) behaviour towards a magnet.
- iii) behaviour towards carbon disulphide as a solvent.
- iv) effect of heat.

1. A small amount of compound is taken in a test tube and to it is added 5 cc of carbon disulphide. The test tube is vigorously shaken. It is observed that :
 - 1) yellow coloured sulphur particles dissolve, but not the iron.
 - 2) grey coloured iron particles dissolve, but not the sulphur
 - 3) both iron and sulphur dissolve to form clear solution.
 - 4) none of the particles of compound dissolve.
2. Which one is not observed when carbon disulphide is added to a mixture of iron filings and sulphur powder taken in a test tube ?
 - 1) Sulphur powder dissolves and a yellow solution is formed.
 - 2) iron filings remain unaffected.
 - 3) iron sulphide is formed by the combination of iron of the mixture and of CS₂
 - 4) solid sulphur reappears when yellow solution is heated.
3. Add dil H₂SO₄ to a mixture of iron and sulphur, we would observe:
 - 1) FeS reacts with dil sulphuric acid to give H₂ gas
 - 2) Mixture of iron and sulphur reacts with dil sulphuric acid to give hydrogen sulphide gas
 - 3) FeS does not react with sulphuric acid.
 - 4) mixture of iron and sulphur reacts with sulphuric acid to give hydrogen gas.

4. When iron and sulphur are heated at high temperature:
 - 1) yellow coloured iron sulphide is formed
 - 2) black coloured FeS is formed
 - 3) Mixture of iron and sulphur is formed
 - 4) they do not react.
5. When carbon disulphide is added to the compound of iron and sulphur:
 - 1) hydrogen sulphide gas is evolved
 - 2) no reaction takes place.
 - 3) Sulphide dioxide gas is formed
 - 4) hydrogen gas is eoled.
6. Mixture of iron and sulphur is :
 - 1) homogeneous
 - 2) heterogenous
 - 3) homogeneous and heterogenous as well
 - 4) non of these.
7. When you mix iron filings with sulphur thoroughly and spread the mixture evenly on a white sheet. How the particiles in the mixture appear ?
 - 1) grey and yellow particles can be seen distinctly, spreaded uniformly.
 - 2) grey and yellow particles can be see distinctly, but they are not spread uniformly.
 - 3) grey and yellow particles cannot be seen distinctly.
 - 4) only yellow particles can be seen distinctly.

Hint-

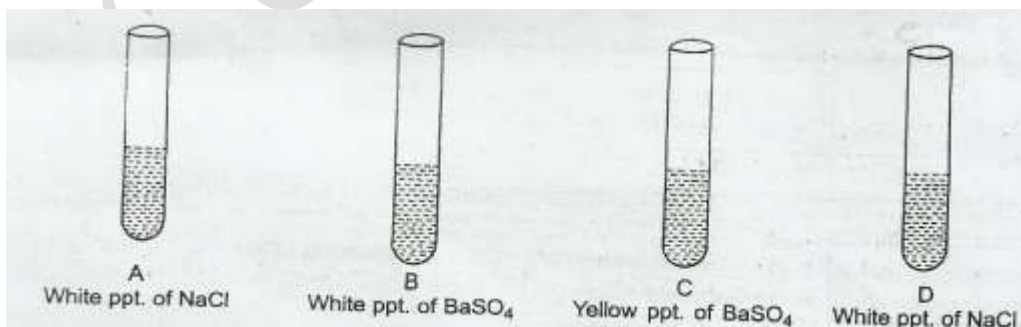
1. 4)	2. 3)	3. 4)	4. 2)	5. 2)	6. 2)	7. 2)
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Experiment -4 Chemical reactions

Aim of the experiment: To carry out the following reasons and classify them as physical or chemical changes:

- a) Iron with copper sulphate solution in water.
- b) Burning of magnesium in air.
- c) Zinc with dilute sulphuric acid.
- d) Heating of copper sulphate.
- e) Sodium sulphate with barium chloride in the form of their solutions in water.

1. Which of the following precipitate is formed when sodium sulphate and barium chloride reacts ?



- 1) A
- 2) B
- 3) C
- 4) D

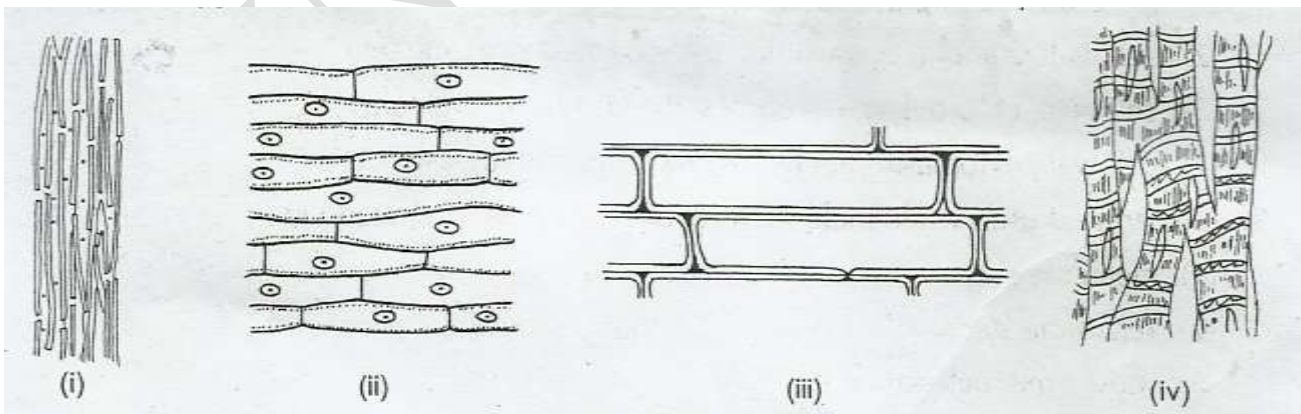
2. On burning magnesium ribbon in the air, the student will observe:
 - 1) white powder
 - 2) shiny powder
 - 3) brown powder
 - 4) non of these.
 3. The gas evolved when zinc reacts with dilute sulphuric acid is :
 - 1) colourless, odourless, combustible
 - 2) colourless, foul smelling, combustible.
 - 3) colourless, pungent smelling, burns with a pop sound
 - 4) brown coloured, pugent smelling, does not burn
 4. 100 mL of a saturated copper sulphate solution was taken in a beaker. A small amount of iron filings was added to the beaker and left undisturbed overnight. The mixture was then filtered to obtain the residue. The colour of the residue was found to be:
 - 1) greenish blue
 - 2) faint green
 - 3) grey
 - 4) reddish brown
 5. A student while eating solid lead nitrate taken in a test tube would observe :
 - 1) white residue of PbO_2
 - 2) green residue of NO_2
 - 3) yellow residue of PbO
 - 4) brown residue of NO
 6. On placing an iron nail in a copper sulphate solution, it is observed that:
 - 1) a soft and black coating is deposited on the iron nail.
 - 2) a reddish brown coating is deposited on the iron nail.
 - 3) a smooth and shiny coating is on the iron nail.
 - 4) a grey and hard coating is deposited on the iron nail
- Hint-
1. 2)
 2. 1)
 3. 1)
 4. 4)
 5. 3)
 6. 2)

Experiment -5 Preparation of temporary mount

Aim of the Experiment: to prepare stained temporary mounts of (a) onion peel and (b) human cheek cells and to record observations and draw their labeled diagrams.

1. one of the following is not visible in cheek cell:
 - 1) cell membrane
 - 2) nucleus
 - 3) cell wall
 - 4) cytoplasm
2. one observing onion peel slide under low power of compound microscope which set of structure are clearly seen:
 - 1) cell wall, cell membrane, nucleus, cytoplasm

- 2) nucleus, cell membrane, vacuole, chromosome
 - 3) cell wall, cell membrane, mitochondria, vacuole
 - 4) Cell wall, nucleus, vacuole, chromosome.
3. the correct method of obtaining an onion peel is to:
- 1) take the thinnest bit after meshing an onion leaf.
 - 2) make thin sections of a thick scale leaf using a blade
 - 3) use of forceps to pull out a thin transparent peel from a concave surface of a scale leaf.
 - 4) use a needle and forceps to remove a thin peel from convex surface of a scale leaf.
4. Cells are stained to :
- 1) make the cell turgid
 - 2) nourish the cell
 - 3) help in cell multiplication
 - 4) highlight the cell organelles.
5. Which of the following are the identifying features of human cheek cells you will find in a slide given to you by your teacher ?
- 1) the large vacuole appears in each cell
 - 2) the cells are irregular, flat with cytoplasm
 - 3) the cells are large enough lying side by side with cell walls
 - 4) the cells are irregular flat with central nucleus and cytoplasm.
6. To observe cells in an onion peel, we must prepare the slide by mounting on it:
- 1) crushed pulp of onion
 - 2) dry scale leaf
 - 3) green leaf of onion
 - 4) thin layer of fleshy leaf of onion.
7. Which of the following liquid is not used in the preparation of stained temporary mount of onion peel ?
- 1) Water
 - 2) glycerine
 - 3) safranin
 - 4) methyl alcohol
8. A student made a temporary mount of onion peel and observed the same under the microscope. The cells appeared as :



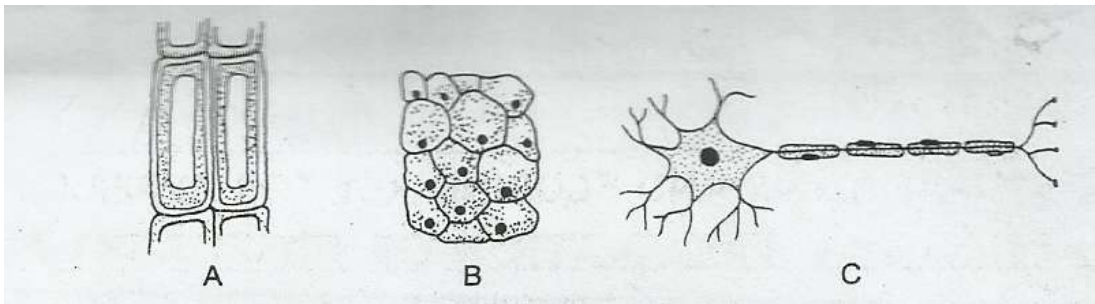
- 1) i 2) ii 3) iii 4) iv

Hint – 1. 3) 2. 1) 3. 3) 4. 4) 5. 4) 6. 4) 7. 4) 8. 2)

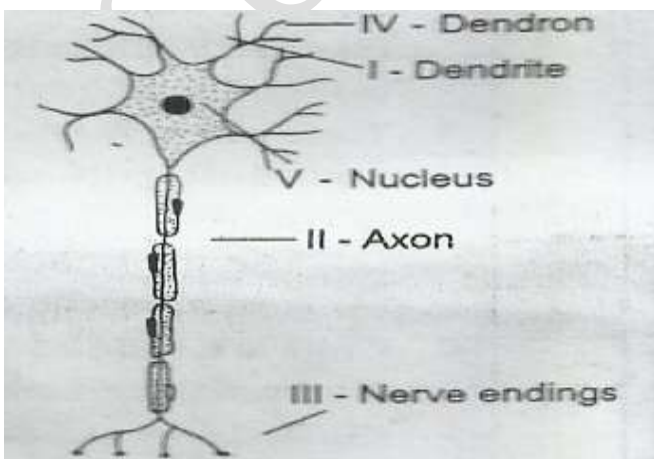
Experiment -6 Tissues

Aim of the experiment: to identify parenchyma and sclerenchyma tissues in plants, striped muscle fibres and nerve cells in animals, from prepared slides and to draw their labeled diagrams.

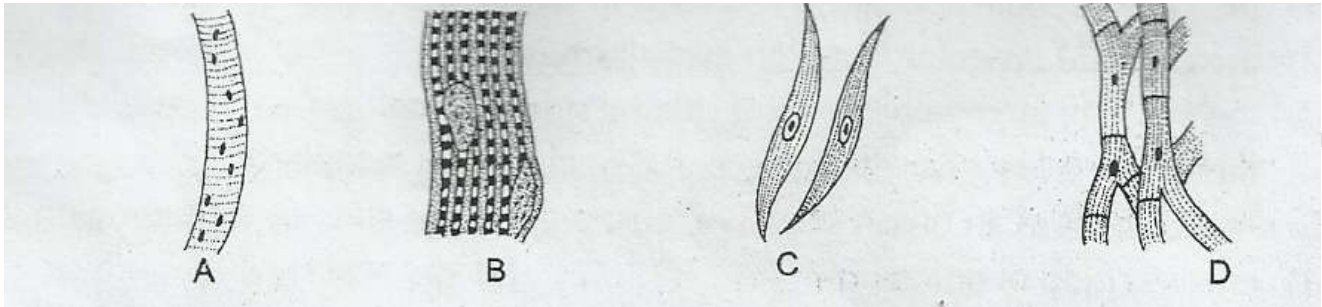
1. Which one of the following is not a characteristic feature of parenchyma:
 - 1) intercellular spaces are present between the cells.
 - 2) each cell has large vacuole
 - 3) composed of thin walled large living cells
 - 4) cells are isodiametric and non-living
2. Identify the following slides in the correct order based on the features:



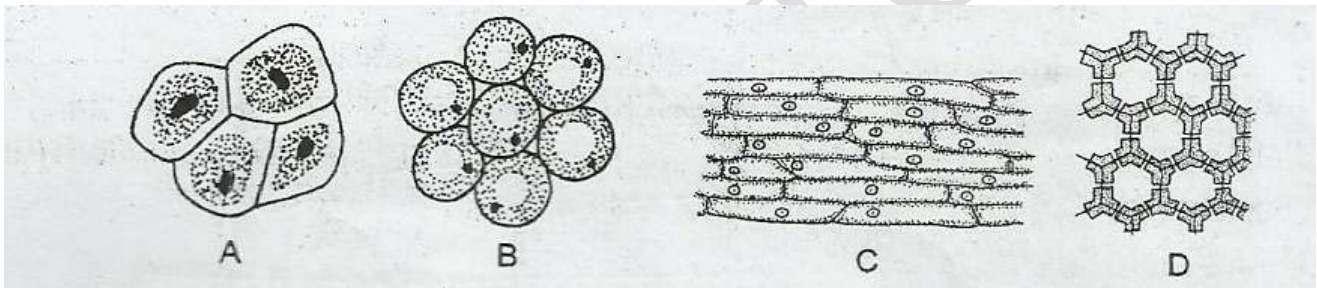
- 1) nerve cell, parenchyma, sclerenchyma
 - 2) sclerenchyma, nerve cell, parenchyma
 - 3) sclerenchyma, parenchyma, nerve cell
 - 4) parenchyma, sclerenchyma, nerve cell
3. Plant cells with thickened at corners, non lignified cell walls are:
 - 1) parenchyma
 - 2) collenchyma
 - 3) sclerenchyma
 - 4) none of these
 4. Branched striated muscle fibres interconnected by oblique bridges are :
 - 1) unstriated muscle fibres
 - 2) striated muscle fibres.
 - 3) cardiac muscle fibres
 - 4) none of these
 5. Sidak onbserveda slide of nerve cell, drew its diagram, choose the correct labeling.



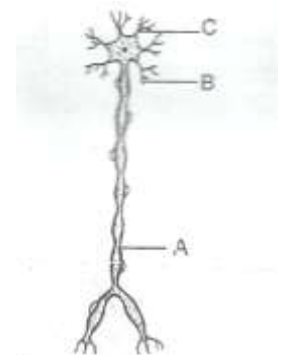
- 1) I, II, III, IV, V are correct
 - 2) V, II, III are correct
 - 3) IV, V, II, III are correct
 - 4) only I and IV are correct.
6. Parry was given three slides. By mistake he drew four diagrams. Select the correct diagram which shows a striated muscle.



- 1) A
 - 2) B
 - 3) C
 - 4) D
7. Observe the diagrams given below and choose the correct diagram of sclerenchyma cells:

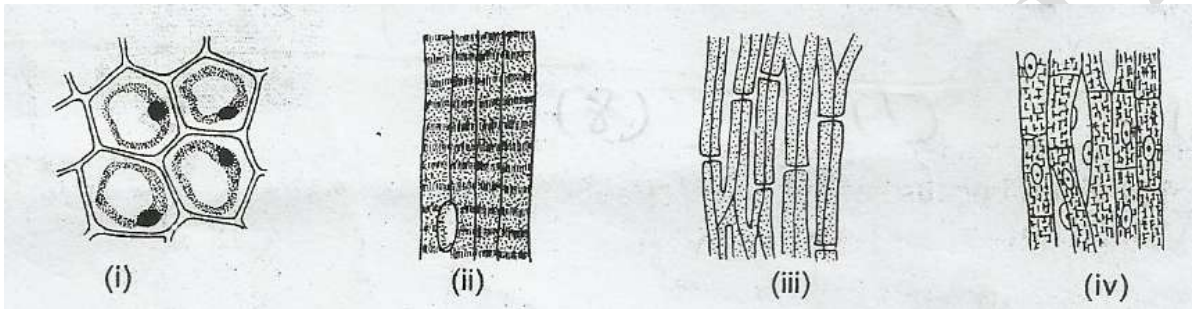


- 1) B
 - 2) C
 - 3) A
 - 4) D
8. The following diagram gives the structure of a cell. Identify respectively the part labeled as A, B and C.



- 1) axon, dendrite, cytoplasm
 - 2) dendrites, axon, cytoplasm
 - 3) axon, nucleus, cytoplasm
 - 4) nucleus, axon, cytoplasm
9. Striated muscle fibre can be identified by:
- 1) nuclei lying towards the periphery
 - 2) star like structure
 - 3) cells with tapering ends
 - 4) centered nuclei

10. One of the following is not a characteristic feature of parenchyma tissue. That feature is :
- 1) cells are thin walled and prominent.
 - 2) cells are thick at the corners
 - 3) a large single vacuole is present in each cell
 - 4) large cells are placed together with intercellular spaces.
11. cells of sclerenchyma tissue has:
- 1) thick wall
 - 2) narrow lumen
 - 3) pits
 - 4) all of these
12. Students observed the following tissues under the microscope. Which one of the following tissues is dead ? without living cytoplasm and nucleus.



- 1) i) 2) ii) 3) iii) 4) iv)

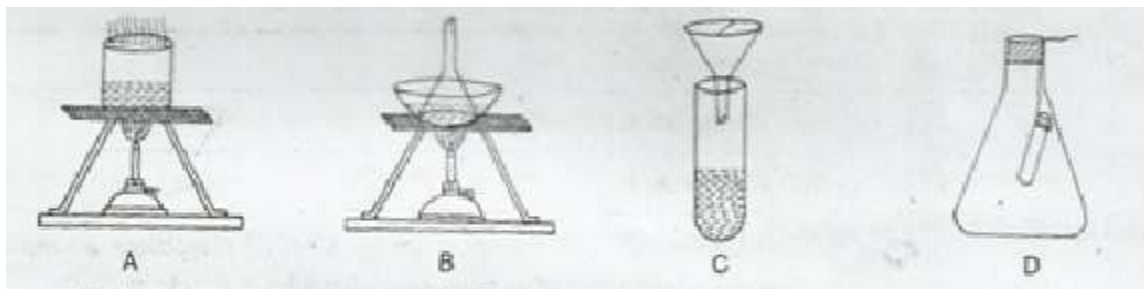
13. The striped muscle fibres are :
- 1) spindle shaped and uninucleate
 - 2) cylindrical without nuclei
 - 3) cylindrical with striations and many nuclei
 - 4) cylindrical and uninucleate.

- Hint-
- 1) 4
 - 2) 3
 - 3) 2
 - 4) 3
 - 5) 2
 - 6) 2
 - 7) 4
 - 8) 1
 - 9) 1
 - 10) 1
 - 11) 2
 - 12) 3
 - 13) 3

Experiment -7 Separating components of a mixture

Aim of the experiment: To separate the components of mixture of sand, common salt and ammonium chloride (of camphor) by sublimation.

1. Which one of the following figures describe the process of sublimation ?



- 1) A 2) B 3) C 4) D
2. A mixture of sand, ammonium chloride and sodium chloride is dissolved in water and filtered. The filtrate consists of :
- 1) ammonium chloride solution
 - 2) sodium chloride solution
 - 3) chalk and ammonium chloride solution
 - 4) sodium chloride and ammonium chloride solution
3. The process of evaporation is employed to separate a substance from its mixture if:
- 1) substance is soluble in water.
 - 2) substance is soluble in water and does not decompose on heating.
 - 3) substance is soluble in water but can decompose on heating.
 - 4) substance is soluble in water but sublimes on heating.
4. components of a mixture of sand, common salt and ammonium chloride can be separated. Select the correct sequence.
- 1) sublimation, dissolving in water, filtration, evaporation.
 - 2) sublimation, filtration, dissolving in water, filtration
 - 3) sublimation, evaporation, dissolving in water, filtration
 - 4) evaporation, filtration dissolving in water, sublimation
5. How do you separate a mixture of sulphur, iron filings and salt ?
- 1) use magnet, dissolve in water, filter and crystallize.
 - 2) use magnet, filter, decant and crystallize.
 - 3) dissolve in water, filter, crystallize, decant.
 - 4) decant, crystallize, filter and dissolve in water.
6. The colour of the pure ammonium chloride is :
- 1) white 2) blue 3) green 4) red
7. The process of sublimation involves:
- 1) change of liquid into gaseous state.
 - 2) change of solid into liquid state.
 - 3) change of solid directly into gaseous state and vice versa.
 - 4) change of gas into liquid state.

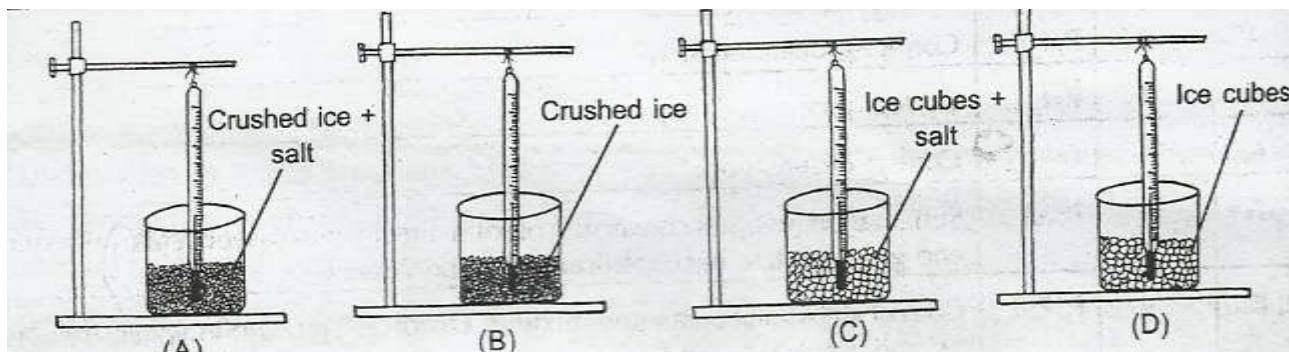
Hint – 1. 2) 2. 4) 3. 2) 4. 1) 5. 1) 6. 1) 7. 3)

Experiment-8

Determining melting point of ice and boiling point of water

Aim of the experiment: To determine the melting point of ice and boiling point of water.

- Below are the melting points of ice as given by four students, which one is correct:
 - -0°C
 - 273 k
 - 100°C
 - 373 k
- The correct set up for finding the melting point of ice is:



- A
 - B
 - C
 - none of these
- In order to find the boiling point of water, one of the precautions is that the bulb of the thermometer should not touch the sides of the beaker. The precaution is taken because:
 - sides of the beaker are at slightly higher temperature.
 - sides of the beaker are at slightly lower temperature.
 - the bulb of the thermometer is likely to break.
 - none of these.
 - Sidak sets up an apparatus for the determination of boiling point of distilled water at Shimla. He recorded the boiling point as 97°C , instead of 100°C . Assuming that the thermometer is accurate, the lesser boiling point is due to:
 - high pressure of air at high altitude.
 - low pressure of air at high altitude.
 - water may be containing a large amount of dissolved air.
 - the water may not be distilled.
 - Which is not a correct precaution to be followed by Ravi to determine the melting point of ice ?
 - zero mark of the thermometer remains above the ice surface.
 - keep stirring the mixture and look at the thermometer.
 - crush the ice into small pieces.
 - do not dip the thermometer in crushed ice.
 - A student set up an apparatus for the determination of boiling point of a sample of water supplied to him in his laboratory. He recorded the boiling point as 102°C . Assuming that the thermometer is accurate, the error in the determined value of boiling point is due to :
 - the water may be containing large amount of dissolved air.
 - the water may not be distilled.
 - the bulb of the thermometer is not kept above the water surface.
 - the bulb of the thermometer is touching the bottom of the vessel containing water.

Hint- 1. 2) 2. 2) 3. 1) 4. 2) 5. 4) 6. 2)

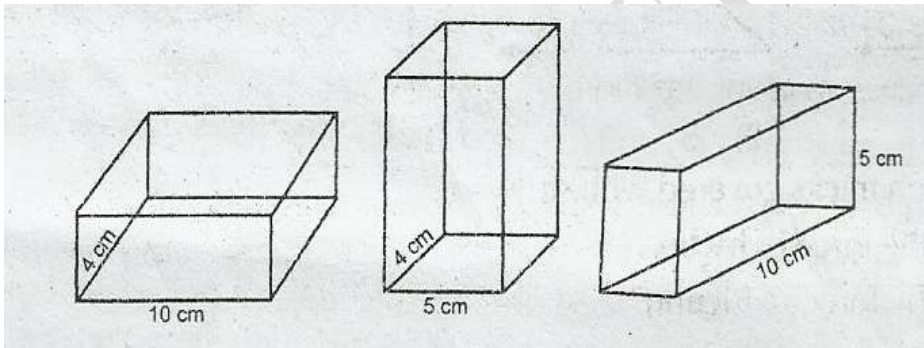
Experiment -9. Variation of force of friction with applied force

Aim of the 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.

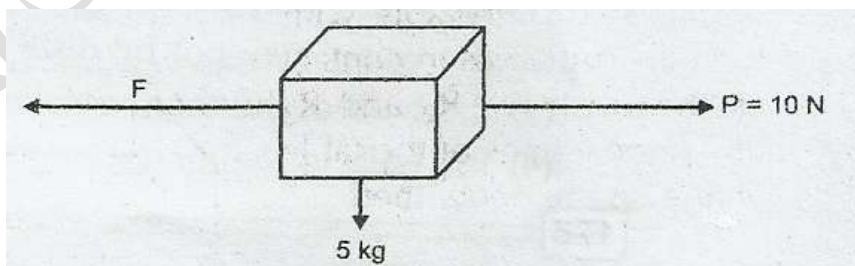
1. Out of the following forces of friction which is maximum ?
 - 1) limiting friction
 - 2) rolling friction
 - 3) dynamic friction
 - 4) all are equal

2. A wooden rectangular block of weight 10N is resting over a glass surface, the force of friction between the block and the glass surface is :
 - 1) 10 N
 - 2) 10 kgwt
 - 3) Zero of weight 5 kg
 - 4) None of these

3. A rectangular block of 10 cm x 5 cm x 4 cm is made to rest on the three forces A,B,C respectively as shown. If F_1, F_2, F_3 are the forces of friction which come into play respectively, then which of the following is correct ?

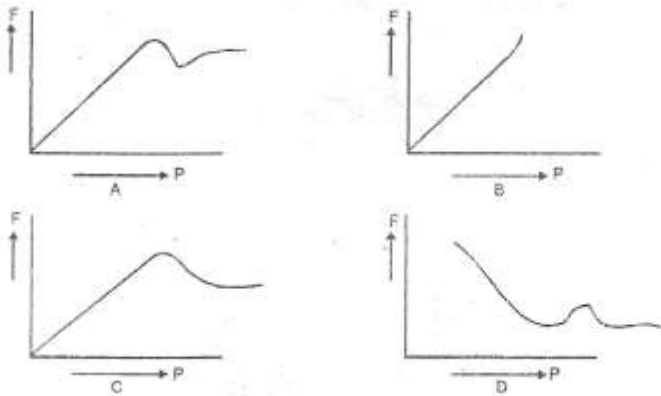


- 1) $F_1 > F_2 > F_3$
 - 2) $F_1 < F_2 < F_3$
 - 3) $F_1 > F_2 < F_3$
 - 4) $F_1 = F_2 = F_3$
4. A body of 5 kg is acted by a force of 10N. The acceleration produced is 1 ms^{-2} . Then the force of friction acting on the body is :



- 1) 10 N
- 2) 2N

- 3) 5N
4) 50N
5. Which one of the following graphs correctly represents the variation of force of friction F with applied force P ?



- 1) A
2) B
3) C
4) D

Hint- 1. 1) 2. 3) 3. 4) 4. 3) 5. 3)

Experiment -10 Absorption

Aim of the experiment: To determine the mass percentage of water imbibed by raisins.

- Students A, B and C were given five raisins of equal weight. The raisins were soaked in distilled water at room temperature. A removed the raisins after 20 minutes; B after two hours and C after 40 minutes. If P_A , P_B and P_C denote percentage absorption of water obtained by student A, B and C respectively, then:
 - $P_A > P_B > P_C$
 - $P_A < P_B < P_C$
 - $P_A < P_B > P_C$
 - $P_A = P_B = P_C$
- A student dissolved 1 g of sugar in 10ml of distilled water in a beaker A. He dissolved 10g of sugar in 100 ml of distilled water in a beaker B. Then he dropped a few raisins, in each. After two hours he found the raisins:
 - swollen in A and shrunken in B
 - shrunken in A and swollen in B
 - swollen in both
 - shrunken in both.
- A student soaked 10g of raisins in 50ml of distilled water in two beakers A and B each. She maintained beaker A at 25°C and beaker B at 50°C . After an hour, the percentage of water absorbed with be:
 - the same in both A and B
 - more in A than in B

- 3) more in B than in A
 - 4) exactly twice as much in B and in A.
4. while performing an experiment with raisins, a student recorded the following data:
Mass of water taken in the beaker = 50 g
Mass of raisins before soaking = 20 g
Mass of raisins after soaking = 30 g
Mass of water in the beaker left after experiment = 40 g
- 1) 10%
 - 2) 20%
 - 3) 45%
 - 4) 50%
5. A student dissolved 5g of sugar in 100ml of distilled water in beaker A. He dissolved 100g of sugar in 100ml of distilled water in beaker B. Then he dropped a few raisins of equal weight in each beaker. After two hours he found the raisins in A swollen and those in B shrunken. The inference drawn is that:
- 1) sugar concentration of raisins is lower than that of solution A and higher than that of solution B
 - 2) sugar concentration of raisins is higher than that of solution A and lower than that of solution B
 - 3) in B the cell membrane of raisins was damaged resulting in leaching.
 - 4) In A the permeability to water of the cell membrane of raisins was enhanced.
6. 5 g of raisins were placed in distilled water for 24 hours. The weight of soaked raisins was found to be 7 g. The correct percentage of water absorbed by raisins is :
- 1) 20%
 - 2) 25%
 - 3) 40%
 - 4) 45%
7. What is the inference drawn from the determine the percentage of water absorbed by raisins ?
- 1) distilled water enters raisins because of endosmosis.
 - 2) Distilled water enters raisins because of exosmosis
 - 3) Water moves out of raisins due to endosmosis
 - 4) Water moves out of raisins due to exosmosis.

Hint –

1. 3)
2. 3)
3. 3)
4. 4)
5. 2)
6. 3)
7. 1)