DAILY PRACTICE PROBLEM

Separation of Substances DPP – 01

Multiple choice questions

1. A mixture

(1) has a fixed composition (2) is a compound

(3) is a pure substance (4) does not have a fixed set of properties

2. An example of mixture is

(1) mud (2) milk (3) blood (4) all of these

True or False

3. We can use different components of a mixture by separating them.

4. A large number of substances available in nature are mixed with certain other substances.

5. Most materials that we use or come across are mixtures.

SOLUTIONS DPP – 01

Answer key

Question	1	2
Answer	**4**	**4**

1. Option (4)
Mixtures have not a fixed set of properties like melting point, boiling point, density etc.

2. Option (4)
Mud, milk & blood are made up more than one type of particles, so all are examples of mixture.

3. True
All the components of mixture can be separated and if they are useful we can use it in different purposes.

4. True
Most of the substances around us are impure in nature which is made up of mixing different substances together.

5. True.
Most materials are made up of two and more than two different type of substance.

DAILY PRACTICE PROBLEM

Separation of Substances DPP – 02

Multiple choice questions

1. Which of the following method would you use for separating rotten grapes from a bunch?
(1) Filtration (2) Distillation (3) Churning (4) Hand picking

Paragraph type question

Mix some stone pieces, sand and very small pieces of paper. Place a table fan on a stool and switch it on. Stand in front of the fan and drop the mixture from a height in such a way that air blown by the fan pushes the mixture while it is falling.

2. Which of the following is correct?
(1) All the three types of materials will fall at different places.
(2) All the three types of materials will fall at the same places.
(3) Stone pieces and sand will fall at the same place.
(4) Sand and paper pieces will fall at the same place.

3. This process is similar to
(1) Threshing (2) Winnowing (3) Hand-picking (4) Sieving

4. Threshing is a method of separation used to separate
(1) two useful substances of same size
(2) harmful substances from useful ones
(3) useful substances from the non-useful ones
(4) substances of different colours

Fill in the blanks

5. Peanuts are separated from a mixture of wheat & peanut by ____

6. _____ is used to separate husk from wheat.

Subjective questions

7. If a constituent of a solid mixture is big and visibly different, it can be separated by which method of separation?

8. Give two examples of mixture which can be separated by hand-picking.

9. To separate grains of rice from stalks before cooking which method can be used? Also give explanation.

10. Chillies from poha or daliya can be removed by which process of separation. Explain the reason to use it.

Solutions DPP – 02

Answer key

Question	1	2	3	4
Answer	**4**	**1**	**2**	**3**

1. Option (4)

Rotten grapes are visually different from fresh grapes so it can be separated by hand picking method.

2. Option (1)

All the three types of materials will fall at different places.

Small pieces of paper are lighter than sand particles, sand particles are lighter than stone pieces. All of them have difference in weight. So all of the three will fall at different places.

3. Option (2)

Since all of the three types of materials have difference in weight. So they are separated by winnowing. In winnowing lighter particles fall apart from heavier substance with the help of wind when made to fall from a height.

4. Option (3)

Useful substances from the non-useful ones. For eg: stalks are non-useful material are separated from grains (useful substance) by threshing.

5. Hand picking

6. Winnowing

7. It can be separated by hand picking.

8. Mixture of pulses and small stones, mixture of rotten grapes and fine grapes.

9. To separate grains of rice from stalks, threshing is applied. In threshing, the mixture of stalk and grains is beaten hardly to separate grains from stalks.

10. Chillies from poha or daliya can be removed by hand picking as these are large insize and visible to eyes.

DAILY PRACTICE PROBLEM

Separation of Substances DPP – 03

Multiple choice questions

1. Bran can be separated from flour by

(1) winnowing (2) magnetic separation

(3) threshing (4) sieving

2. What is the principle of sieving technique?

(1) Difference in weight (2) Difference in colour

(3) Difference in shape (4) Difference in size

3. The method used to separate sand & pebbles is

(1) churning (2) sieving (3) magnetic separation (4) winnowing

4. How is scrap-iron separated from other wastes in the scrap yard?

(1) Sublimation (2) Magnetic separation

(3) Hand picking (4) Winnowing

5. Examine the picture below and identify the type of separation method used.

(1) Filtration (2) Straining (3) Winnowing (4) Sieving

6. If you drop a box of pins into a heap of sand, how will you get all the pins back ?

(1) By using a magnet (2) By sedimentation

(3) By decantation (4) All of these

7. The solution in which sedimentation phenomenon takes place is

(1) adding salt in water (2) adding sugar in water

(3) adding sand in water (4) all of these

8. After sedimentation process, sediment is present on

(1) top of the liquid (2) bottom of the liquid

(3) distributed throughout the liquid (4) it depends on nature of liquid

9. Which chemical is used to increase the rate of sedimentation?

(1) Alum (2) Lime (3) Camphor (4) Sugar

10. Loading helps in

(1) sedimentation (2) decantation (3) filtration (4) magnetic separation

11. Sedimentation process occur in which type of solution?

(1) Solid-liquid type (2) Liquid-Liquid type

(3) Solid-gas type (4) Gas-Liquid type

12. The technique that separates a liquid from an insoluble solid by carefully pouring of the liquid is called-

(1) evaporation (2) decantation (3) filtration (4) distillation

13. Clear liquid obtained after filtration is called

(1) water (2) filtrate (3) solution (4) residue

14. Filtration is a method to separate the component of a

(1) solution (2) compounds

(3) pure substance (4) mixture of a liquid & an insoluble substance

15. At water treatment plant, the river water is filtered by using

(1) Filter paper (2) Cloth filter (3) Sand filter (4) All of these

True or False

16. Stainless steel made from austenite iron is non-magnetic in nature.

17. Sieve is a shallow vessel having small holes at its bottom.

18. Magnetic separation method is used to separate iron from Sulphur.

19. The liquid above the sediment is called supernatant liquid.

20. Pour out the supernatant liquid carefully into another vessel, leaving behind the sediment is called decantation.

21. Filtration is a better method than sedimentation & decantation.

22. If mixture contains a lighter solid than liquid, sedimentation & decantation will not work.

23. Phitkari used at home is Potassium alum.

Answer in one word

24. The liquid above the sediment.

25. A method of seperation of lighter component from heavy component in liquid mixture.

Analogy type

26. Filter paper: Filtration : : ––––– : Sieving

Subjective questions

27. How can we separate Bran from flour?

28. "The choice of the method for separation depends on the property of the component to be separated". Explain it.

29. Give an example where desirable substances are obtained during separation.

30. Give an example where we remove undesirable constituents from the mixture.

Solutions DPP – 03

Answer key

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	**4**	**4**	**2**	**2**	**4**	**1**	**3**	**2**	**1**	**1**	**1**	**2**	**2**	**4**	**3**

1. Option (4)

Bran is separated from flour by sieving.

2. Option (4)

Sieving is done on the basis of difference in size

3. Option (2)

Sand and pebbles are difference in size, so sieving method will use to separate sand - pebbles mixture

4. Option (2)

Scrap irons are magnetic in nature, so it is separated by magnetic separation method from waste materials

5. Option (4)

The type of separation used in picture shown is sieving.

6. Option (1)

Since pins are magnetic substances. So by using a magnetic pins are separated from sand.

7. Option (3)

Sedimentation occurs only if solute particles are insoluble.

8. Option (2)

In sedimentation process sediment particles are settled at bottom due to gravity

9. Option (1)

Alum is used to increase rate of sedimentation

10. Option (1)

Loading helps in sedimentation

11. Option (1)

Sedimentation phenomena occur if insoluble heavier solids are present in solution

12. Option (2)

Pour out the supernatant liquid into another vessel, leaving behind the sediment is called decantation

13. Option (2)

Clear liquid obtained after filtration is called filtrate

14. Option (4)

Filtration is a method to separate the components of mixture if one component is insoluble into another component.

15. Option (3)

In water treatment plant water is filtered through mixture of sand, gravels & charcoal.

16. True

Due to presence of carbon

17. True

Shape of sieve is a shallow vessel having small holes at its bottom

18. True

Magnetic separation method is used to separate iron from sulphur.

19. True.

Liquid above the sediment is called supernatant liquid.

20. True.

Pour out the supernatant liquid into another vessel, leaving behind the sediment is called decantation

21. True.

Through sedimentation & decantation process, we can't separate a mixture which contains a insoluble solids are lighter than liquid.

22. True.

For sedimentation & decantation process, we can separate a mixture which contains heavier insoluble solids from liquid.

23. True

Phitkari used at home is potassium alum.

24. Supernatant liquid.

25. Sedimentation and decantation

26. Sieve

Filter paper is used in filtration just like sieve is used in sieving.

27. Bran from flour is separated with the help of sieve by sieving.

28. The choice of method for separation depends on the property of component to be separated. For eg; in the mixture of sulphur and iron, iron particles are to be separated and sulphur is desired substane. The property of component to be separated (iron particles) is the magnetic property i.e. iron particles are attracted by magnet. So magnetic separation is used for separation of iron particles from mixture of iron particles and sulphur.

29. Eg: From mixture of oil and water, water is separated and oil is desirable.

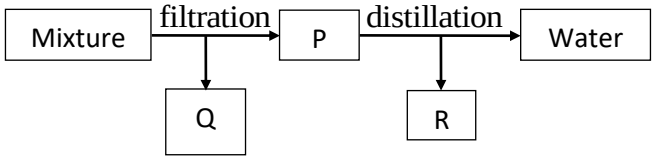
30. From a mixture of tea and tea leaves, tea is desirable and obtained by filtration.

DAILY PRACTICE PROBLEM

Separation of Substances DPP – 04

Multiple choice questions

1. What could the mixture be?



(1) Water + Sand + Glass (2) Oxygen + Hydrogen + Salt

(3) Stone + Rice + Water (4) Chalk powder + Sugar + Water

2. Butter is separated from curd by the process of

(1) filtration (2) heating (3) churning (4) sieving

3. Which of the following mixture can be separated by evaporation?

(1) Camphor + Salt (2) Water + Salt (3) Sugar + Salt (4) All of these

4. The process of cooling, hot concentrated solution of a substance to obtain crystal is called as

(1) crystallisation (2) Distillation (3) Evaporation (4) Churning

5. How can we obtain crystal of solute from its hot concentrated solution?

(1) By increasing its temperature (2) By cooling it down

(3) By keeping it in sun for few hours (4) It is not possible to obtain crystal from solution

6. In purification of salt from sea water, which method is useful?

(1) Condensation (2) Crystallisation (3) Churning (4) Distillation

True or False

7. Distilled water is prepared by evaporation method.

8. Creams have low density due to which it floats over milk.

9. Mixture of sugar and salt can be separated by dissolving both in water.

10. Saw dust is soluble in water.

11. Alcohol and water are miscible.

12. Soluble impurities can be removed by evaporation process.

13. Acid is called as universal solvent.

Fill in the blanks

14. Sodium chloride can be separated from its aqueous solution by_____.

15. The mixture of kerosene with water form two distinct _____ of liquids.

Find the odd one out based on type of mixture to be separated

16. Sedimentation, Filtration, Separating Funnel, loading.

17. Evaporation, crystallisation, distillation, filtration.

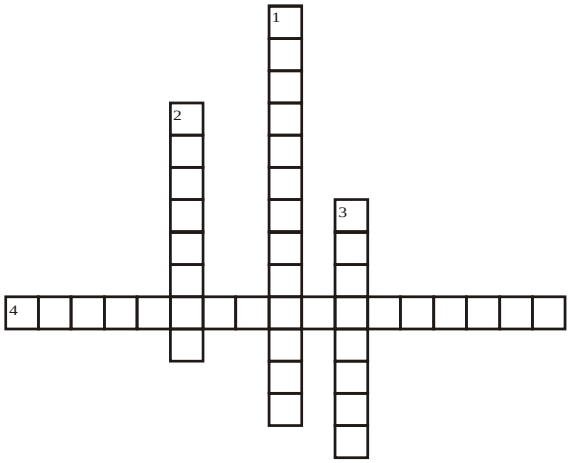
One word question

18. Solid which collects on filter paper.

Diagram based question

19. Mention the process shown in the given figure.

20. Puzzle



Across

4. The liquid above the sediment in sedimentation process.

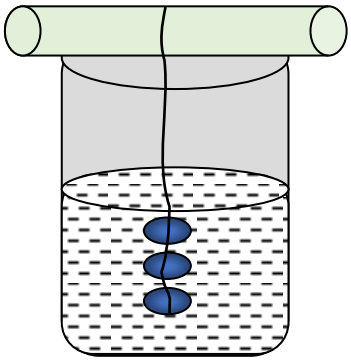
Down

1. Chemical name of phitkari.
2. Cream can be separated from milk by this method.
3. The clear liquid obtained through filtration.

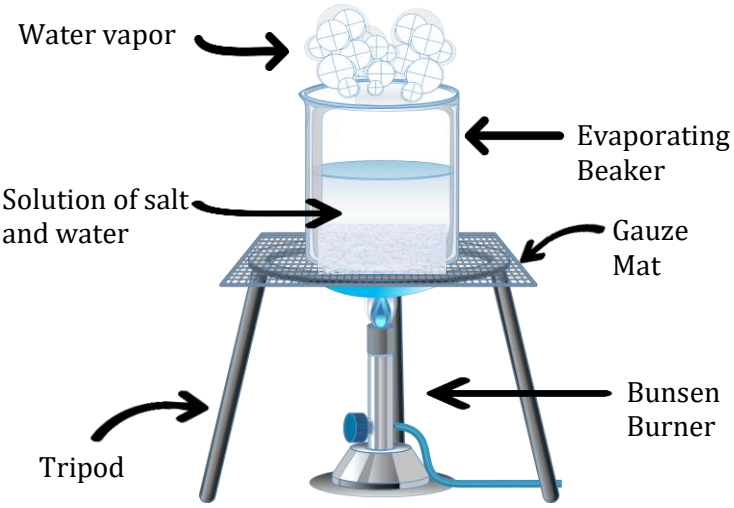
Subjective question

21. Which separation technique does the following picture depicts?

(a)



(b)



22. What is evaporation?

23. Name the separation methods as per the descriptions given below:

(a) Using a container with holes in it, called a sieve, to separate a mixture _____.

(b) Adding water so that the parts of the mixture that are less dense than water will float, and the other parts will sink _____.

(c) Using special paper that allows liquid to pass, but traps solids _____.

(d) Heating a mixture so that part of it changes to a gas and the other part does not_____.

(e) Using magnets to attract and separate the magnetic parts of a mixture_____.

(f) Adding liquid to cause the soluble parts of the mixture to dissolve_____.

24. Suggest methods to separate constituents from the following mixtures.

(i) Common salt and camphor

(ii) Water and mustard oil

(iii) Acetone and water.

(iv) Dry leaves and rice grain

25. Which separation technique is used to separate soluble liquids?

Solutions DPP – 04

Answer key

Question	1	2	3	4	5	6
Answer	**4**	**3**	**2**	**1**	**2**	**2**

1. **Option (4)**

Chalk power+ sugar + water.

2. **Option (3)**

In churning curd is rotated at a high speed, so insoluble butter floats on the liquid part of mixture.

3. **Option (2)**

Solid nonvolatile soluble solute can be separated from volatile solvent by evaporation method.

4. **Option (1)**

The process of cooling hot concentrated solution of a substance to obtain crystal is called as crystallisation

5. **Option (2)**

By cooling hot concentrated solution, we can obtain the crystals of solute.

6. **Option (2)**

Salt from sea water can be purified by crystallisation method.

7. **True.**

In evaporation water evaporates leaving behind all the impurities which leads to the formation of distilled water.

8. **True.**

Due to low density of cream than milk it floats on the milk.

9. **False.**

Mixture of sugar and salt can be separated by dissolving both in alcohol.

10. **False.**

Saw dust is insoluble in water.

11. **True.**

Alcohol dissolves in water completely so both the liquids are miscible in nature.

12. **True**

Soluble impurities can be purified by evaporation but it can be removed by crystallization profitably.

13. **False.**

Water is universal solvent.

14. Evaporation

15. Layers

16. Separating funnel

17. Filtration

18. Residue.

19. Decantation.

20.

Across	**Down**
4. Supernatant liquid	1. Potassium alum
3. Filtrate	2. Churning

21. (a) Crystallization (b) Evaporation

22. A solid can be recovered from its solution by evaporating the solvent. A solution of salt in water, when heated on a flame for some time, leaves a residue of the salt.

23. (a) Sieving
(b) Sedimentation
(c) Filtration
(d) Evaporation
(e) Magnetic separation
(f) Dissolution, evaporation and condensation

24. (i) Sublimation
(ii) Separation funnel
(iii) distillation
(iv) Winnowing/ Hand picking

25. Distillation