*** Choose The Right Answer From The Given Options.** [17]

1. What purpose does handpicking serve in the process of separation?
   (A) Filtration (B) Sorting (C) Evaporation (D) Decantation

   Ans. : Sorting

2. Which of the following substances are commonly separated using the churning method?
   (A) Oil from water (B) Sand from water
   (C) Cream from milk (D) Oxygen from air

   Ans. : Cream from milk

3. Which factor is usually essential for the filtration?
   (A) Apparatus size (B) Presence of air
   (C) Pore size (D) Temperature of the mixture

   Ans. : Pore size

4. Butter is separated from milk by
   (A) sedimentation (B) filtration (C) churning (D) decantation

   Ans. : (C) churning

5. Threshing is done by
   (A) beating (B) bullocks (C) machines (D) all of these

   Ans. : (D) all of these

6. Which method is used to separate pebbles and stones from sand?
   (A) Handpicking (B) Winnowing (C) Sieving (D) Any of these

   Ans. : (C) Sieving

7. The components of a solution (say sugar in water) can be separated by
   (A) filtration (B) evaporation (C) sedimentation (D) decantation

   Ans. : (B) evaporation

8. Sand from water is separated by
   (A) Sieving (B) evaporation
   (C) filtration (D) sedimentation and decantation

   Ans. : (D) sedimentation and decantation

9. The process of conversion of water vapours into liquid is called
   (A) condensation (B) decantation (C) sedimentation (D) evaporation

   Ans.: (A) condensation

10. The process of conversion of water into its vapours is called

(A) evaporation (B) condensation (C) guttation (D) transpiration

Ans.: (A) evaporation

11. Paheli bought some vegetables such as french beans, lady's finger, green chillies, brinjals and potatoes all mixed in a bag. Which of the following methods of separation would be most appropriate for her to separate them?

(A) Winnowing (B) Sieving (C) Threshing (D) Handpicking

Ans. : (D) Handpicking

12. Boojho's grandmother is suffering from diabetes. Her doctor advised her to take 'Lassi' with less fat content. Which of the following methods would be most appropriate for Boojho to prepare it?

(A) Filtration (B) Decantation (C) Churning (D) Winnowing

Ans. : (C) Churning

13. Which of the following mixtures would you be able to separate using the method of filtration?

(A) Oil in water (B) Cornflakes in milk

(C) Salt in water (D) Sugar in milk

Ans. : (B) Cornflakes in milk

14. Which amongst the following methods would be most appropriate to separate grains from bundles of stalks?

(A) Handpicking (B) Winnowing (C) Sieving (D) Threshing

Ans. : (D) Threshing

15. Four mixtures are given below:
(i) Kidney beans and chick peas
(ii) Pulses and rice
(iii) Rice flakes and corn
(iv) Potato wafers and biscuits
Which of these can be separated by the method of winnowing?

(A) (i) and (ii) (B) (ii) and (iii) (C) (i) and (iii) (D) (iii) and (iv)

Ans. : (B) (ii) and (iii)

16. While preparing chapatis, Chinky found that the flour to be used was mixed with wheat grains. Which out of the following is the most suitable method to separate the grains from the flour?

(A) Threshing (B) Sieving (C) Winnowing (D) Filtration

Ans. : (B) Sieving

17. You might have observed the preparation of ghee from butter> and cream at home. Which method(s) can be used to separate ghee from the residue?
(i) Evaporation
(ii) Decantation
(iii) Filtration
(iv) Churning
Which of the following combination is the correct, answer?
(A) (i) and (ii) (B) (ii) and (iii) (C) (ii) and (iv) (D) (iv) only

Ans. : (B) (ii) and (iii)

*** Fill In The Blanks With Correct Alternative.** [8]

18. Peanuts are separated from a mixture of wheat and peanut by _____

Ans. : handpicking

19. _____ is used to separate husk from wheat.

Ans. : Winnowing

20. Fine sand can be separated from larger particles by _____

Ans. : sieving

21. Glass is a _____

Ans. : mixture

22. Compounds have _____ melting points.

Ans. : fixed

23. Milk has a _____ boiling point.

Ans. : variable

24. Boiling point of pure water is _____ than that of impure water.

Ans. : less

25. Mixture may be solid, liquid or _____

Ans. : gas

*** State Whether The Sentences Are True Or False.[1 Marks Each]** [13]

26. Salt can be separated from ' salt solution by keeping it under the Sun.

Ans. : True
Reason : The water will evaporate leaving the salt behind.

27. A mixture of puffed rice and rice grains can be separated by threshing.

Ans. : False
Reason: Process of threshing is used to separate the grains from the stalks.
Correct statement: This mixture can be separated by handpicking or winnowing.

28. A mixture of mustard oil and lemon water can be separated by decantation.

Ans. : True

Reason: The oil and water will form separate layers which can be decanted.

29. Sieving is used to separate a mixture of rice flour and water.

Ans. : False

Reason: Sieving is done to separate solid-solid mixture of different particles size.

Correct Statement: Filtration is used to separate a mixture of rice flour and water.

30. Handpicking should be used only when the quantity of one component is less.

Ans. : True

Reason: It is easier to handpick small quantities.

31. Butter is separated from butter milk by churning.

Ans. : True

32. Separation of components of a mixture is a useful process.

Ans. : True

33. Ink loses its properties when mixed in water

Ans. : False

34. 'Sharbat' is a mixture of sugar and water.

Ans. : True

35. Rocks are pure substances.

Ans. : False

36. Milk is a mixture.

Ans. : True

37. Common salt is a pure substance.

Ans. : True

38. Mixture has properties different from its components.

Ans. : True

*** Answer The Following Questions In One Sentence.[1 Marks Each]** **[20]**

39. When is handpicking used?

Ans. : Handpicking is used to separate undesirable component, when present in small amount.

40. Give one example of sieving used in everyday life.

Ans. : Separation of barn (choker) from flour.

41. Name some materials that are used as filters.

Ans. : Cotton, filter cloth, filter paper.

42. What is the use of decantation?

Ans. : Decantation is used to separate insoluble solids from liquids. Two immiscible liquids are also separated by this process.

43. What is the drawback of evaporation?

Ans. : The liquid in the mixture is evaporated off into the air and is not recovered.

44. Name the process to obtain salt from seawater.

Ans. : Evaporation.

45. Which types of mixtures are separated by evaporation?

Ans. : Evaporation is used to separate solids dissolved in liquid.

46. Describe the method to obtain pure salt from rock salt.

Ans. : First, the mixture is crushed and grinded. Water is then added and filtered. Pure salt is collected as filtrate which is heated for evaporation. Water evaporates off and pure salt is left.

47. Name the property of the components used for separating the following mixtures:
    1. salt and water
    2. wheat and husk m iron fillings and saw-dust
    3. iron filling and saw-dust

Ans. : (1) evaporation
(2) winnowing
(3) magnetic separation

48. How will you separate pure water from a solution of salt in water?

Ans. : We can separate pure water from a solution of salt in water, by the process of distillation that is by evaporation and followed by condensation.

49. Write opposite process of condensation.

Ans. : Evaporation.

50. During centrifugation, which particles settle down at the bottom?

Ans. : Heavy particles settle down at the bottom and lighter particles float at the top of the liquid.

51. Name the method by which you can separate butter from milk.

Ans. : Centrifugation.

52. A small amount of puffed rice is mixed with chana dal. Can you think of separating the mixture by any method other than handpicking?

Ans. : Yes, the other method is winnowing.

53. Valli is unable to separate husk from rice in a closed room. How can you help her?

Ans. : We can help her by placing a fan for air blowing the light husk.

54. Have you ever observed sieves being used at construction sites to separate pebbles and stones from the sand?

Ans. : Yes, large sieves are used for such purpose.

55. Have you ever observed white patches on the dark coloured clothes you wear during hot summers? How are these patches formed?

Ans. : Yes, these patches are formed due to evaporation of water from sweat leaving behind salt.

56. Observe the figure. Does it answer the question? Can you name the process involved?

Ans. : Yes, it answer the question. The process involved is condensation.

57. In the chapter 'Materials Around Us', you have studied that oil does not mix with water and forms a separate layer when left undisturbed for some time. Which method of separation would you use to separate oil and water?

Ans. : Decantation process.

58. Can you relate the presence of nasal hair to any separation process?

Ans. : Nasal hair acts like a natural filter, trapping dust, pollen, and other particles from the air we breathe, similar to how a filtration process works to remove solid impurities from a liquid.

*** Answer The Following Questions In Short.[2 Marks Each]** **[16]**

59. What is threshing? How is it done?

Ans. : The process that is used to separate the grain from stalks is threshing. In this process, the stalks are beaten to free the grain seeds. Sometimes, threshing is done with the help of bullocks. Machines are also used to thresh large quantities of grain.

60. Write various methods of separation of compounds from their mixture.

Ans. : (1) Handpicking
(2) Threshing
(3) Winnowing
(4) Sedimentation
(5) Decantation

(6) Evaporation
(7) Condensation.

61. Name and describe briefly a method which can be helpful in separating a mixture of husk from grains. What is the principle of this method?

Ans. : Winnowing: Winnowing can be used to separate lighter and heavier components of a mixture. Wheat grains and husk are different in weight, husk is lighter than wheat. When the mixture is allowed to fall down from a height, the wind carries the lighter husk with it and the heavy wheat grains fall vertically down on the groqnd.
Principle of this method is that the lighter particles are carried away by the wind.

62. Name the device by which cream can be separated from milk at home.

Ans. : A mixer-grinder is the very important device by which cream can be separated from milk by the process of centrifugation. (Fig.)

Fig. : Mixer-grinder

63. In what situations would you use decantation instead of filtration to separate solids from liquids?

Ans. : Decantation is used when the solid particles are heavy and settle down at the bottom of the container, allowing the clear liquid to be poured off without disturbing the solid sediment. For example separating sand from water.

64. During the COVID-19 pandemic, all of us wore masks. Generally, what material are they made of? What is the role of these masks?

Ans. : Masks are generally made of materials like cotton, synthetic fibers, or polypropylene. Their role is to filter out airborne particles, including viruses and bacteria, to prevent their inhalation and spread.

65. A mixture containing potatoes, sctlt and sawdust has been given to you. Outline a stepwise procedure for separating each component from this mixture.

Ans. : Step-1 : Handpick the potatoes
Step-2 : Add water to the remaining mixture to dissolve the salt
Step-3 : Filter the mixture to separate the sawdust from the salt solution.
Step-4 : Evaporate the water from the salt solution to obtain the salt.

66. List the common characteristics of living things.

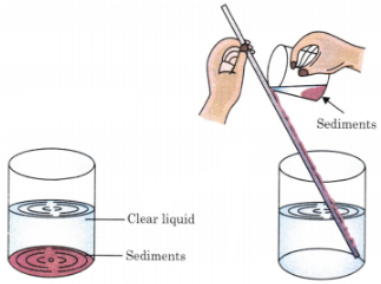
Ans. : Some common characteristics of living things are:

1.Growth
2.Movement
3.Reproduction
4.Respiration
5.Responsiveness
6.Excretion

*** Answer The Following Questions In Brief.** **[12]**

67. What is decantation?

Ans. : Decantation is a process of separating insoluble solids from liquids. A suspension of solid particles in liquid is allowed to stand for some time. Solid particles settle down at the bottom, due to their weight. This is called sedimentation. The clean water is transferred into another beaker, without disturbing the settled particles. This type of separation is called decantation (Fig.).



68. What is the importance of centrifugation? How is it done?

Ans. : Centrifugation is the process of separating suspended particles from a liquid by rotating the liquid at a high speed.

The mixture is taken in a closed bottle and rotated at a high speed. The heavy particles settle at the bottom while light particles remain behind. This method is also used to separate cream from milk. Cream collects at the centre and being lighter than milk, it floats at the- top of the mixture.

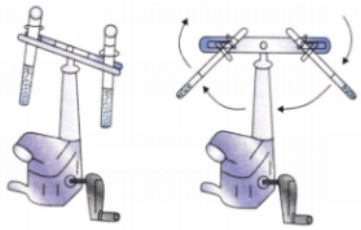


Fig. Hand centrifuge machine

69. How is common salt obtained from seawater?

Ans. : When seawater is allowed to evaporate in shallow pits, water gets heated by sunlight and changes into water vapour by the process of evaporation leaving behind impure solid salts. Now, the lumps of impure common salt are crushed to get powdered salt. The powdered common salt is dissolved in water to prepare a solution. Now the solution of common salt is filtered to remove insoluble impurities.

The clear solution is evaporated by heating to remove the water content to obtain a concentrated solution of common salt. The hot and concentrated solution is allowed to cool. On cooling, crystallization takes place and crystals of pure common salt are obtained.

70. Mention the methods that can be used for the separation of the following mixtures:
(i) wheat, sugar and husk
(ii) rice, gram and iron fillings
(iii) sand, black gram (urad) and husk.

Ans. : (1) Mixture of wheat, sugar and husk.
→ For separating husk from the mixture, we should follow the winnowing method as husk is lighter than other two components.
→ Wheat and sugar can be separated by sieving as they have different sizes.
(2) Mixture of rice, gram and iron fillings.
→ For separating iron fillings, we can use a magnet.
→ Rice and gram can be separated either by sieving or by handpicking.
(3) Mixture of sand, black gram (urad) and husk.
→ For separating sand from the mixture, we can sieve the mixture.
→ Black gram (urad)and husk can be separated by the method of winnowing.

*** Answer The Following Questions To The Point.** **[10]**

71. Explain the characteristics oflimng organisms

Ans. : There are following characteristics of living organisms
(i) All living organisms require food. The food gives energy for growth and to maintain other life processes.
(ii) All living organisms show growth. Young ones of animals grow into adults. Plants also grow.
(iii) All living organisms respire. In respiration oxygen is used for the oxidftion of food and carbon dioxide is produced.
(iv) All living organisms respond to stimuli. All plants and animal respond to light, heat and the changes around them.
(v) All living organisms show excretion. The process of getting rid of waste product by the living organisms is called excretion. Plants also remove their wastes.
(vi) All living organisms reproduce. The process by which plants and animals produce their own kind is called reproduction.

72. Write the difference between living and non-living things.

Ans. :

Living things	Non-living things

1. Living organisms need food, air and water.	1. Non-living things do not need food, air and water.
2. Living organisms grow.	2. Non-living things do not grow.
3. Living organisms can move on their own.	3. Non-living things cannot move on their own.
4. Living organisms are sensitive. They respond to changes around them.	4. Non-living things are not sensitive. They do not respond to changes around them.
5. Living organisms reproduce themselves.	5. Non-living things do not reproduce.
6. Living organisms respire. They release energy from food.	6. Non-living things do not respire.
7. Living organisms excrete. They get rid of waste materials from their body.	7. Non-living things do not excrete. their body.
8. Living organisms have a definite life span after which they die, i.e. they have a definite life cycle.	8. Non-living things do not have definite life cycle.
9. Living things are made up of living cells.	9. Non-living things are not made up of cells.

* **Match the following.** [15]

73.

Column I	Column II
(1) Gram flour mixed with black gram	(a) Handpicking
(2) Chalk powder mixed with water	(b) Magnetic separation
(3) Corn mixed with potatoes	(c) Decantation
(4) Iron powder mixed with sawdust	(d) Sieving
(5) Oil mixed with water	(e) Filtration

Ans. : (1 - d), (2 - e), (3 - a), (4 - b), (5 - c)

Column A	Column B
74. Handpicking	A. Settling of heavier components at bottom
75. Threshing	B. Separating fine particles from flour
76. Winnowing	C. Separating larger size impurities
77. Sieving	D. Separating grains from its stalks
78. Sedimentation	E. Separation by wind or by blowing air

Ans. :

Column A	Column B
1. Handpicking	C. Separating larger size impurities
2. Threshing	D.Separating grains from its stalks
3. Winnowing	E. Separation by wind or by blowing air
4. Sieving	B. Separating fine particles from flour
5. Sedimentation	A. Settling of heavier components at bottom

Column A	Column B
79. Evaporation	A. Conversion of water vapours into liquids
80. Condensation	B. Separating fine particles from flour
81. Churning	C. Settling of heavier components at bottom
82. Sieving	D. Separating butter from milk
83. Sedimentation	E. Conversion of water into its vapours

Ans. :

Column A	Column B
1. Evaporation	E. Conversion of water into its vapours
2. Condensation	A. Conversion of water vapours into liquids
3. Churning	D. Separating butter from milk
4. Sieving	B. Separating fine particles from flour
5. Sedimentation	C. Settling of heavier components at bottom

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