Chapter- 3

ELEMENTS COMPOUNDS AND MIXTURES

QUESTION BANK

SUB TOPIC 1

Distinguishing Elements compounds and Mixture

1 MARK QUESTIONS

Q.1 Define element, compound and mixture.

Q.2 What is a colloidal solution ?

Q.3 What are pure substance ? Give two examples of pure substances.

Q.4 What are metals ? Given two examples of metals.

Q.5 List five characteristics by which compounds can be distinguished from mixtures.

Q.6 How much heavier than an atom of ^{12}C is the average atom of naturally occurring copper ?

Q.7 What is chemical image ? Give examples of chemical changes.

Q.8 Which method can be used to separate a mixture of napthalene and common salt ?

Q.13 How would you confirm that a colourless liquid given to you is pure water ?

Q.14 What is chromatography ? State its two applications.

Q.15 What difference in the property of two miscible liquids enables their separation by fractional distillation?

Q.16 Identify the solutions among the following mixtures :

(a) Soil (b) sea water (c) air (d) coal (e) soda water

Q.17 Define homogeneous and heterogeneous mixtures.

Q.18 From the following techniques : distillation, filtration, fractional distillation, chromatography, crystallisation, sublimation, evaporation, decantation, sedimentation.

Select the method you will use to separate :

(a) the constituents of the colouring matter of ink (b) hydrated $CuSO_4$ from its aqueous solution

(c) sand and water (d) common salt from sea-water (e) petrol from crude oil

Q.19 How are sol, solution and suspension different from each other ?

Q.20 Classify the following into elements, compounds and mixtures.

(a) Sodium (b) Soil (c) Sugar solution (d) Silver

(e) Calcium carbonate (f) Tin (g) Silicon

Q.21 Which of the following materials fall in the category of a "pure substance?" ?

(a) ice (b) milk (c) iron (d) Hydrochloric acid (e) Calcium oxide

(f) mercury (g) Brick (h) wood (i) air

Q.22 Classify each of the following as a homogeneous or heterogeneous mixture.Sodawater, wood, air, soil, vinegar, filtered tea.

Q.23 Name the technique applied to separate the constituents of ink. On which principle is it based.

Q.24 Identify the following as homogeneous or heterogeneous matter.

(a) gasoline (b) dirt (c) smog (d) alcohol

(e) a new nail (f) vinegar (g) aerosol spray (h) air

SUB TOPIC-2

SUB TOPIC -DIFFERENT METHODS OF SEPARATION OF MIXTURE

2**MARKS AND 3 MARKS QUESIONS**

Q.1 Given the names of the elements present in the following compounds :
(a) Quicklime (b) Hydrogen bromide (c) Baking soda (d) Potassium sulphate

Q.2 How would you separate :
(a) Benzene (b.p. 80°C) from toluene (methylbenzen b.p. 11°C) with which it is miscible)
(b) Lead sulphate from a mixture of lead sulphate and lead chloride.

Q.3 Manganese steel is very strong and finds use as railroad rails. It is composed of 86.0% iron, 13.0% manganese,and 1.0% carbon. What is the mass of each of the three elements in a 254 kg sample of manganese steel ?

Q.4 Tell whether each of the following properties describes a heterogeneous mixture, a solution (homogeneousmixture), a compound, or an element.
(a) a homogeneous liquid that, when boiled away, leaves a solid residue.
(b) a cloudy liquid that after a time seems more cloudy toward the bottom.
(c) a uniform red solid that has a definite, sharp melting point an cannot be decomposed into simplersubstances.
(d) a colorless liquid that boils at one unchanging temperature and can be decomposed into simplersubstances.
(e) a liquid that first boils at one temperature but as the heating continues, boils at slowly increasingtemperatures. (There is only one liquid phase.)

Asample of bronze is made by mixing 85 kg of molten tin with 942 kg of molten copper. W

SUB TOPIC 3
METHODS OF DIFFERENT COMPONETS OF A GIVEN MIXTURE

Q.1 State any one difference between pure and impure substance.

Q.2 Which of the following materials are categorized as pure substance :
(i) Mercury (ii) Milk (iii) Calcium oxide (iv) Ink

Q.3 Identify homogeneous mixtures from the following :
(i) Smoke (ii) Brass (iii) Tincture of iodine (iv) Milk

Q.4 Mention in tabular form any two differences between heterogeneous and homogeneous mixtures.

Q.5 Beakers A and B contain a solution of potassium permanganate and a mixture of chalk powder in water. Mention one point of difference that you would observe in the two mixtures. On the basis of the observation categorize the two as homogeneous or heterogeneous mixture.

Q.6 A mixture of alcohol and water is homogeneous while that of oil and water is heterogeneous.Explain.

Q.7 What are the two components of a solution ?

Q.8 Give two examples from daily life where Tyndall effect is observed.

Q.9 Write any two ways by which a saturated solution can be converted into an unsaturated solution.

Q.10 When is a solution said to be saturated ? How can you change an unsaturated solution to a saturated withoutadding any more solvent to

5 MARK QUESTIONS

1. Describe neatly how will you separate the different components of following mixture :
Sulphur, charcoal and sand .
Naphthalene, saw dust and salt.

2. How would you separate the major constituents of air ? Explain through neat labelled diagram.

3. Explain the sequential processes to obtain pure crystal of $CuSO_4$ from impure sample.

5 MARKS QUESTIONS

20. Draw a neat labelled diagram of a bacteria cell. Explain the different types of bacteria with examples.

21. a) Explain in brief the characteristic of kingdom Monera.

a) How Rhizobium is helpful to plants? Explain.

SUB TOPIC 3

Kingdom Protista: Structure of Amoeba: its locomotion, nutrition, excretion and reproduction.

1 MARK QUESTIONS

22. Define binary fission.

23. Give one major difference between binary and multiple fission in amoeba.

24. What are pseudopodia?

31.State true or false:

Amoeba excretes through pseudopodia.

32. Mention the function of food vacuole.

2 MARKS QUESTIONS

33. Why does amoeba has an irregular shape? Give reason.

34. How does an amoeba respire? Explain.

35.Describe the process of excretion in amoeba along with a neat labelled diagram.

36.Differentiate between:

a) binary fission and multiple fission (2 points)

b) food vacuole and contractile vacuole. (1 point)

3 MARKS QUESTIONS

37. Explain the role of cell membrane in the process of respiration in amoeba.

38.Mention the role of the following in amoeba

a) pseudopodia b) contractile vacuole c) cyst

39. Explain the structure of amoeba with a labelled diagram.

5 MARKS QUESTIONS

40.Describe the kingdom Protista. Explain the reproduction in Amoeba with a neat labelled diagram.

41.Draw a neat labelled diagram of amoeba and explain how does it feed.

SUBTOPIC 4

Kingdom Fungi: Structure of Rhizopus or Bread Mould, Useful and Harmful Fungi with suitable examples.

1 MARK QUESTIONS

42. Define mycelium.

43.Name the mode of nutrition in bread mould.

44.Which of the following produce Vitamin B

a) Rhizopus b) Mucor c) yeast d) Penicillium

45. Name two species of fungi useful in ripening of cheese.

46. Name two edible fungi.

2 MARKS QUESTIONS

47. Which fungus is useful in breweries and why? Give another use of that fungus.

48.What is sporangiophore? Mention its role in bread mould.

49. Name any two fungal infections in humans.

50.Name the antibiotic obtained from fungus. Name the fungus also.

3 MARKS QUESTIONS

51. Draw a detailed labelled structure of bread mould and describe it.

52.List three harmfulness of fungus.

53. How does Rhizopus have its nutrition? Explain in brief.

5 MARKS QUESTIONS

54.List the important characteristics of kingdom fungi and three ways by which fungi are useful to us.

55. a) Draw and describe the structure of bread mould or Rhizopus.

b) List the usefulness of i) yeast ii) Penicillium

SUB TOPIC 5

Kingdom Plantae: a) Thallophyta b) Bryophyta and c) Pteridophyta (general characteristics with examples)

1 MARK QUESTIONS

56. Fill up the blank

a) Plants without well differentiated stem, root and leaf are kept in _____
b) _____are called the amphibians of the plant kingdom.

57. Name the mode of nutrition in Spirogyra.

58.Name two algae.

59. Define thallus.

60. What are rhizoids?

2 MARKS QUESTIONS

61.(Which group of organisms are called as the 'Amphibians of plant kingdom? Why?

62.List two major characteristics of plant kingdom.

63. How does Fern reproduces? Explain.

50.Differentiate between moss and fern.

3 MARKS QUESTIONS

51. Name the following:

a) Plants whose body is not differentiated.

b) Plants with no roots, but with stems and leaves.

c)Plants with roots, stems, leaves and spores for reproduction.

52. Describe Mosses and give reason why they are called as amphibians of the plant kingdom.

53.Differentiate between Algae and Fungi.

5 MARKS QUESTIONS

54.a) Describe the detail classification of plant kingdom with a flowchart.

b) Give a brief description of Pteridophyta.

55. Describe briefly

a) Thallophyta b) Bryophyta c) Pteridophyta

SUB TOPIC 6

d) Gymnosperms and e) Angiosperms (general characteristics with examples)

1 MARK QUESTIONS

56. What are cotyledons?

57. State true or false:

Maize and wheat are dicotyledonous plants.

58. Which of the following is not a dicot plant?

a) Brinjal b) Mango c) Grassd) Pea

59. Name any two angiosperms.

60. Which of the following is gymnosperm and why? Pine or Cashewnuts

2 MARKS QUESTIONS

61. Differentiate between angiosperm and gymnosperm.

62. Draw a neat diagram of monocot seed and dicot seed.

63. How can you define cryptogams and phanerogams?

64. Describe briefly:

a) Monocot b) Dicot

3 MARKS QUESTIONS

65. Describe the characteristics of gymnosperm with examples.

66.Differentiate between monocot and dicot.

67. Give the hierarchy of 5 kingdom classification of living world by the help of a flowsheet diagram.

68. Describe the characteristics of angiosperm with examples.

5 MARKS QUESTIONS

69.a) What are the major divisions in the Plantae? What is the basis for these divisions?

b) With reference to number of seeds, venation in the leaves and types of roots, differentiate between monocotyledonous and dicotyledonous plants

70. Who proposed the detail classification of plant kingdom? Explain. Give any one characteristic and one example of each of the group of plant kingdom.