



NAME					
SUBJECT	CHEMISTRY	CLASS	SS 1	DURATION	2HOURS

SECTION A: OBJECTIVE

[50 MARKS]

INSTRUCTION: Each question is followed by four options lettered A to D. Find the correct option for each question and shade in pencil on your answer sheet, the answer space which bears the same letter as the option you have chosen.

1. The study of the composition, properties and reactions of matter is called
A. Biology
B. Physics
C. Chemistry
D. Geology
2. Which of the following is a physical change?
A. Rusting of iron
B. Melting of ice
C. Burning of paper
D. Souring of milk
3. The smallest particle of an element that takes part in a chemical reaction is the
A. Atom
B. Molecule
C. Ion
D. Proton
4. Which of the following substances is a compound?
A. Air
B. Sodium chloride
5. Filtration can be used to separate a mixture of
A. Salt and water
B. Oil and water
C. Sand and water
D. Alcohol and water
6. Which of the following is not a physical property of matter?
A. Colour
B. Odour
C. Combustibility
D. Density
7. The modern system of naming chemical compounds is known as
A. Organic nomenclature
B. Chemical notation
C. IUPAC nomenclature
D. Valency system
8. A substance that contains only one type of atom is called
A. Mixture

B. Compound
C. Element
D. Solution

9. Which of the following is a heterogeneous mixture?

- A. Sugar solution
- B. Salt solution
- C. Oil and water
- D. Air

10. Which of these represents a chemical change?

- A. Dissolving sugar in water
- B. Freezing water
- C. Cutting wood
- D. Burning candle wax

11. The arrangement of particles in solids can be described as

- A. Random and far apart
- B. Closely packed and orderly
- C. Random and constantly moving
- D. Widely spaced and moving fast

12. Which of the following cannot be classified as matter?

- A. Light
- B. Water
- C. Air
- D. Salt

13. The chemical symbol of sodium is

- A. Na
- B. So
- C. S
- D. Sd

14. The process used to obtain pure water from seawater is

- A. Filtration
- B. Evaporation

C. Distillation
D. Crystallization

15. Which of the following is a chemical element?

- A. Water
- B. Oxygen
- C. Common salt
- D. Carbon dioxide

16. Which of the following methods can best separate a mixture of alcohol and water?

- A. Decantation
- B. Distillation
- C. Filtration
- D. Sieving

17. An example of a homogenous mixture is

- A. Muddy water
- B. Brass
- C. Oil and water
- D. Sand and salt

18. Which of the following is not a compound?

- A. H_2O
- B. CO_2
- C. NaCl
- D. Fe

19. The law that states that matter is neither created nor destroyed in a chemical reaction is

- A. Law of definite proportion
- B. Law of conservation of mass
- C. Law of multiple proportion
- D. Law of reciprocal proportion

20. The smallest particle of a compound that can exist independently is the

- A. Atom
- B. Molecule
- C. Radical
- D. Ion

21. The correct IUPAC name for CaCO_3 is

- A. Calcium carbonate
- B. Calcium oxide
- C. Calcium hydrogen carbonate
- D. Calcium carbide

22. A mixture of sand and salt can best be separated by

- A. Filtration and evaporation
- B. Distillation and condensation
- C. Crystallization only
- D. Sublimation only

23. The study of matter in relation to energy is known as

- A. Physics
- B. Chemistry
- C. Biochemistry
- D. Mathematics

24. The chemical formula of sulphuric acid is

- A. H_2SO_4
- B. H_2SO_3
- C. HNO_3
- D. HCl

25. Which of these is a chemical change?

- A. Melting wax
- B. Breaking glass
- C. Burning wood
- D. Evaporation of water

26. The chemical symbol of potassium is

- A. P

- B. K
- C. Po
- D. Pt

27. Which of the following is not an element?

- A. Gold
- B. Nitrogen
- C. Ammonia
- D. Iron

28. Which method is used to separate immiscible liquids?

- A. Fractional distillation
- B. Separating funnel
- C. Evaporation
- D. Filtration

29. The process of heating a substance to dryness in order to obtain the solute is called

- A. Distillation
- B. Evaporation
- C. Sublimation
- D. Condensation

30. Which of the following is a compound?

- A. Sulphur
- B. Oxygen
- C. Nitrogen
- D. Ammonia

31. A change that is easily reversible is called

- A. Physical change
- B. Chemical change
- C. Ionic change
- D. Nuclear change

32. Which of the following is not a mixture?

- A. Air

B. Sea water
C. Crude oil
D. Sodium hydroxide

33. The correct IUPAC name for NaCl is
A. Sodium chloride
B. Sodium chlorate
C. Sodium chlorite
D. Sodium chloric acid

34. Which of the following is a property of a chemical change?
A. No new substance formed
B. Easily reversible
C. Change in colour
D. No heat absorbed or given out

35. The state of matter with no definite shape but definite volume is
A. Solid
B. Liquid
C. Gas
D. Plasma

36. Which of the following represents a mixture?
A. NaCl
B. CO₂
C. Air
D. H₂O

37. The IUPAC name of HCl is
A. Hydrogen chloride
B. Hydrogen chlorate
C. Hydrochloric acid
D. Hydrogen chlorite

38. Which separation method is based on differences in boiling points?
A. Crystallization
B. Filtration

C. Fractional distillation
D. Chromatography

39. The particle theory of matter states that
A. All matter is continuous
B. Matter is made up of tiny particles in constant motion
C. Matter is indivisible
D. Matter cannot be changed

40. Which of these is not a method of separation?
A. Chromatography
B. Decantation
C. Condensation
D. Precipitation

41. The formula of methane is
A. CH₂
B. CH₄
C. C₂H₆
D. C₂H₄

42. When iron rusts, the process is a
A. Physical change
B. Chemical change
C. Nuclear change
D. Temporary change

43. The chemical symbol of calcium is
A. C
B. Ca
C. Cl
D. Cu

44. Which of the following is a physical change?
A. Frying egg
B. Respiration
C. Dissolving salt in water
D. Cooking rice

45. The process of cooling vapour to form liquid is called
A. Sublimation
B. Condensation
C. Evaporation
D. Precipitation

46. The IUPAC name for H_2O_2 is
A. Water
B. Hydrogen oxide
C. Hydrogen peroxide
D. Dihydrogen oxide

47. Which of these is an example of sublimation?
A. Water boiling
B. Iodine crystals changing to vapour
C. Melting of ice
D. Freezing of water

48. Which of the following is a compound?

A. Nitrogen
B. Carbon dioxide
C. Oxygen
D. Argon

49. The IUPAC name for NH_3 is
A. Nitrogen trihydride
B. Hydrogen nitride
C. Ammonia
D. Triammonium

50. The gaseous state of matter is characterized by
A. Definite volume and definite shape
B. Definite volume but no definite shape
C. No definite volume and no definite shape
D. No motion of particles

SECTION B: THEORY

INSTRUCTION: Answer question number **one (1)** and any other **three (3)** questions in this section. All questions carry equal marks.

1.(a) Consider the following atoms: R_TX and S_TX . [1 mark]

(i) State the phenomenon exhibited by the two atoms [1 mark]
(ii) What is the difference between the atoms? [1 mark]
(iii) Give two examples of elements that exhibit the phenomenon stated in 2(a)(i) [2 marks]

(iv) If T is 17, write the electronic configuration of the element [1 mark]

(b) (i) State the two differences between metals and non-metals with respect to their: [1 mark]

I. Physical properties	
II. Chemical properties	[2 marks]
(c) State two characteristics of transition metals	[2 marks]

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2. (a) Define Chemistry. (2 marks)
(b) State two differences between a compound and a mixture. (2 marks)
(c) List three physical properties of solids. (3 marks)
(d) Give the IUPAC names of the following:
i. CaCO_3 ii. HNO_3 iii. NaOH (3 marks)
3. (a) What is a physical change? Give one example. (2 marks)
(b) State two methods of separating a mixture of sand and salt. (2 marks)
(c) Mention three differences between physical and chemical changes. (3 marks)
(d) State the principle of fractional distillation and give one practical application.
(3 marks)
4. (a) Define an element and give two examples. (2 marks)
(b) State two importance of Chemistry in everyday life. (2 marks)
(c) Explain briefly the particle theory of matter. (3 marks)
(d) List three differences between evaporation and distillation. (3 marks)
5. (a) State the law of conservation of mass. (2 marks)
(b) Define a mixture and give one example. (2 marks)
(c) State three differences between solids and gases based on particle arrangement.
(3 marks)
(d) Give two examples each of physical and chemical changes. (3 marks)
6. (a) Define a compound and give two examples. (2 marks)
(b) Explain briefly why mixtures can be separated by physical methods. (2 marks)
(c) State three differences between elements and compounds. (3 marks)
(d) Write the chemical symbols of:
i. Calcium ii. Potassium iii. Sulphur (3 marks)