

S.3 CHEMISTRY PAPER ONE

TIME: 1HR AND 30MINUTES

NAME;.....STREAM.....

1. Which one of the following methods is used to separate a mixture of diesel?
 - A. evaporation
 - B. filtration
 - C. separating funnel
 - D. chromatography
2. Which one of the following is the major constituent of air?
 - A. oxygen
 - B. nitrogen
 - C. carbon dioxide
 - D. water vapour
3. Which one of the following electronic configuration is of a noble gas?
 - A. 2:8:1
 - B. 2:8:8
 - C. 2:8:2
 - D. 2:8:7
4. Which one of the following metals will react most readily with cold water?
 - A. sodium
 - B. calcium
 - C. magnesium
 - D. potassium
5. Which one of the following substances when heated under goes a chemical change?
 - A. ammonium chloride
 - B. copper(II) carbonate
 - C. candle wax
 - D. sulphur
6. Which one of the following reagents is normally used to test for the presence of water
 - A. potassium iodide
 - B. barium nitrate
 - C. anhydrous copper(II) sulphate
 - D. silver nitrate

7. Which one of the following substance is used to test for the presence of oxygen?
- A. a glowing splint
 - B. a burning splint
 - C. litmus paper
 - D. anhydrous copper(II) sulphate
8. Which one of the following methods is used to separate Diesel in crude petroleum?
- A. filtration
 - B. decantation
 - C. fractional distillation
 - D. fractional crystallization
9. Which one of the following particles conducts electric current in molten sodium chloride?
- A. electrons
 - B. molecules
 - C. atoms
 - D. ions
10. The electronic configurations of elements L , M V and R are 2:8:3 , 2:8:6 , 2: 8:8 and 2:8:8:2 respectively, which one of the following pairs of elements consists of metals only?
- A. M and V
 - B. L and V
 - C. M and R
 - D. L and R
11. Which one of the following reactions of hydrochloric acid is an example of neutralization reaction? Reaction with
- A. zinc
 - B. sodium hydroxide
 - C. sodium sulphate
 - D. silver nitrate
12. Element Y has atomic number 13. The chemical bond in the sulphide of Y is
- A. ionic bond
 - B. covalent bond
 - C. dative bond
 - D. metallic bond
13. The full symbol of an element is ${}_{13}^{29}\text{Z}$.The ion of Z contains
- A. 10 neutrons
 - B. 10 electrons
 - C. 14 protons

- D. 13 electrons
14. Which one of the following salts can be prepared by direct synthesis?
- A. Lead(II) iodide
 - B. ammonium nitrate
 - C. sodium carbonate
 - D. iron(III) chloride
15. Which one of the following conduct electricity?
- A. diamond
 - B. graphite
 - C. coke
 - D. coal
16. The process used to obtain pure water from sea water is called
- A. sedimentation
 - B. filtration
 - C. distillation
 - D. decantation
17. Which one of the following salts can be prepared by the action of dilute sulphuric acid on the metal?
- A. $Al_2(SO_4)_3$
 - B. $MgSO_4$
 - C. $CuSO_4$
 - D. $PbSO_4$
18. Which one of the following oxides is soluble in both dilute nitric acid and dilute sodium hydroxide solution?
- A. copper(II) oxide
 - B. magnesium oxide
 - C. calcium oxide
 - D. zinc oxide
19. Which one of the following is an alloy of lead?
- A. brass
 - B. bronze
 - C. duralumin
 - D. solder
20. Which one of the following substances can burn in air to form a compound with nitrogen?
- A. copper
 - B. zinc

- C. iron
- D. magnesium

21. When a carbonate reacts with an acid, the gas formed is;

- (A) Hydrogen
- (B) Oxygen
- (C) Chlorine
- (D) carbon dioxide

22. The gas formed from the reaction of hydrogen peroxide and manganese dioxide is usually tested using;

- (A) Lime water
- (B) Potassium dichromate
- (C) Burning splint
- (D) Glowing splint

23. Which of the following salts can be prepared by precipitation?

- (A) Zinc sulphate
- (B) Zinc chloride
- (C) Sodium sulphate
- (D) Calcium carbonate

24. Which of these can be separated using a separating funnel?

- (A) Water and paraffin
- (B) Sand and water
- (C) Water and ethanol
- (D) Sulphur and iron

25. The following are components of air **except**;

- (A) Oxygen
- (B) Hydrogen
- (C) Water vapour
- (D) Carbon dioxide

26. Oxidation can be defined as

- (A) Addition of hydrogen to a substance
- (B) Change of oxidation number
- (C) Loss of electron from a substance
- (D) Gain of electrons by a substance

27. All elements in a given group have the

- (A) same atomic mass
- (B) same number of neutrons
- (C) same atomic number
- (D) same mass number

28. Which of the following compounds dissolves in water to form an alkaline solution?

- (A) CaO
- (B) SO₂
- (C) Al₂O₃
- (D) NO₂

29. The structure of an atom of element X is ${}_{12}^{24}\text{X}$. Which of these is an isotopes of X?

- (A) ${}_{20}^{40}\text{M}$
- (B) ${}_{11}^{24}\text{N}$

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

37. The table below shows the number of protons, neutrons and electrons of particles P, Q & R

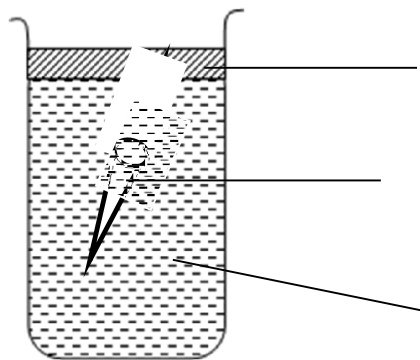
Particle	Proton	Neutron	Electron
P	1	1	2
Q	2	2	2
R	3	4	2

Which one of the particles is a positive ion?

- (A) R (B) Q (C) P (D) P and Q
38. Which of these substances does not sublime when heated?

- (A) Sulphur (C) Iron III chloride
(B) Ammonium chloride (D) Iodine

39.



Oil layer

Iron nail

Boiled water

From the experiment above, the purpose of the oil layer is

- A. to prevent presence of water vapour
B. to prevent entry of air
C. to absorb carbon dioxide from air
D. to restrict presence of dust into water
40. A carbonate of an element Y has the formula $Y_2(CO_3)_3$, to which group in the periodic table does Y belong?

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

Each of questions 41 to 45 consists of an assertion (statement) on the left hand side and a reason on the right hand side. Select as follows;

- A:** If both the assertion and the reason are true statements and the reason is the correct explanation of the assertion.
- B:** If both the assertion and the reason are true statements but the reason is not the correct explanation of the assertion
- C:** If the assertion is true but the reason is not a correct statement
- D:** If the assertion is not true but the reason is a correct statement.

Summary of instructions

	Assertion	Reason
A	True	True (Reason is a correct explanation)
B	True	True (Reason is not correct explanation)
C	True	Incorrect
D	Incorrect	True

WRITE THE CORRECT LETTER IN A BOX AGAINST EACH QUESTION

41. Water is a mixture *Because* water can exist in three forms
42. Hard water requires *Because* soap is less soluble than the soap less a lot of soap to form a permanent lather. detergents
43. Bubbles of hydrogen gas *Because* Copper is below hydrogen in the. slowly evolve when copper granules are added to dilute hydrochloric acid activity series
- 44 . Crude petroleum is refined *Because* Its fractions have different boiling points.
by fractional crystallization
45. Sodium is stored *Because* Sodium is very under water. electropositive.

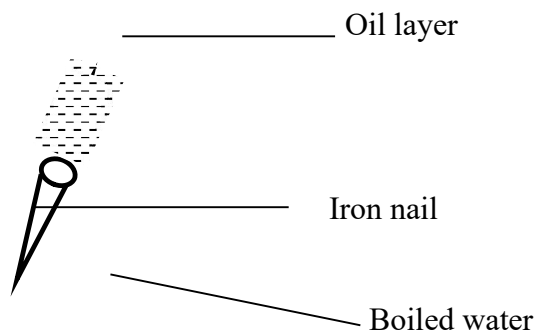
In each of questions 46 – 50, one or more of the answers given may be correct. Read each question carefully and then indicate the correct answer accordingly.

- A. If 1, 2, 3 only are correct

- B. If 1 and 3 only are correct
- C. If 2 and 4 only are correct
- D. If 4 only is correct

Summary of instructions

A	B	C	D
1, 2, 3 Only correct	1, 3 only correct	2, 4 only correct	4 only correct



46. The following are the main sources of water pollution.

1. sewage
2. photosynthesis
3. detergents
4. rain water

47. An element Y is most likely to be

1. in group 1 in the periodic table
2. in period 3 of the periodic table
3. highly electropositive
4. highly electronegative

48. A reducing agent

1. loses electrons to a substance.
2. adds oxygen to a substance.
3. removes hydrogen from a substance.

4. adds electrons to a substance.
49. The element Q with atomic number 19
1. Is a metal.
 2. Forms a basic oxide.
 3. Reacts by loss of electrons.
 4. Form a chloride salt which has no effect on litmus.
50. Which of the following statements is / are true about the halogens?
1. Are oxidizing agents
 2. Belong to the same period of the periodic table.
 3. Their reactivity decreases down the group.
 4. Their reactivity increases down the group.

END