

O'LEVEL S.1 CHEMISTRY

INSTRUCTIONS:

Attempt all questions

Put a small ring around the correct alternative in section A and write answers for section B in the spaces provided

SECTION A (15 marks)

1. A non-luminous flame is suitable for heating in the laboratory because
 - A. It is very hot and non-sooty
 - B. It is very bright and hot
 - C. It contains a lot of carbon particles
 - D. It has 3 zones
2. The following is used during heating in the laboratory.
 - A. Plastic beaker
 - B. Spatula
 - C. Plastic measuring cylinder
 - D. Test tube holder
3. The following are physical changes except;
 - A. Rusting of iron
 - B. Melting of ice
 - C. Sublimation of iodine
 - D. Condensation of water vapour
4. The following are characteristics of the flame produced when the air holes of burner are open except;
 - A. Blue
 - B. Steady, quiet flame
 - C. Very hot
 - D. Very sooty
5. Matter consists of small particles known as
 - A. Molecules
 - B. Atoms
 - C. Alloys
 - D. Compound
6. Which one of the following statements is true about a non-luminous flame of Bunsen burner?
 - A. It is formed when the air holes are closed
 - B. It produces a lot of soot
 - C. It consist of 4 zones
 - D. It is formed when the air holes are opened
7. Which one of the following best describes the behavior of particles in glasses?
 - A. They are closely packed together
 - B. The forces of attraction between gas particles are negligible
 - C. They are not so closely packed together but forces of attraction still hold them

- D. The force of attraction between gas particles is negligible and they move freely
8. Which of the following is not true about gases?
- A. They are compressible
 - B. Particles move at a high speed
 - C. Particles often collide
 - D. Particles attract each other strongly
9. In which of the following ways is a luminous flame similar to a non-luminous flame? Both flames
- A. Consist of 3 zones
 - B. Produce soot
 - C. Have a blue zone
 - D. Are formed when the air holes are closed
10. The following are characteristics of liquid except
- A. Having definite shape and volume
 - B. Flowing
 - C. Cannot be compressed
 - D. Expanding slightly when heated
11. In which state(s) of matter do particles only vibrate?
- A. Solid
 - B. Liquid
 - C. Solid and gas
 - D. Liquid and gas
12. In which zone of the luminous flame of the Bunsen burner is burning of gas complete?
- A. Blue zone
 - B. Solid to gas
 - C. Liquid to gas
 - D. Gas to solid
13. In which of the following changes of state do particles move from very closely packed together to furthest apart?
- A. Solid to liquid
 - B. Solid to gas
 - C. Liquid to gas
 - D. Gas to solid
14. Liquids are able to flow because particles in a liquid
- A. Move randomly
 - B. Are held by forces of attraction but can move within the liquid
 - C. Are closely packed together
 - D. Move independently of each other and the forces of attraction between them is negligible
15. Which of the following zones of a luminous flame is not clearly seen?
- A. Zone of unburnt gas
 - B. Luminous yellow zone
 - C. Blue zone
 - D. The outermost zone

SECTION B

16. (a) What is chemistry?

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(b) State any four reasons of studying chemistry.

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17. (a) Define the term 'flame'

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(b) State the types of flames that you know.

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(c) Give any four differences between the flames you have stated in (b) above.

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ii.	
iii.	
iv.	
v.	

18. (a) What is matter?

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(b) Name the states of matter.

- I.
- II.
- III.

(c). Draw diagrams to show the arrangement of particles in the states of matter you have named in (i)

19. (a) What is a laboratory?

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(b) Draw and name any three laboratory apparatus you know.

20. A separating funnel is used in the laboratory to separate
- A. Ethanol and water
 - B. Water and paraffin
 - C. Water and sand
 - D. Diesel and paraffin
21. Which of the following mixtures can be separated by sublimation?
- A. Sand and common salt
 - B. Methanol and butanol
 - C. Iodine and common salt
 - D. Iodine and ammonium chloride
22. Which one of the following is not true about a period?
- A. The atomic radius increases across the period
 - B. Number of shells remain the same across the period
 - C. Atomic size decreases
 - D. They have the same number of energy levels
23. Substances which absorb water vapor and form solutions are called?
- A. Deliquescent
 - B. Efflorescence
 - C. Hygroscopic
 - D. None of the above
24. Ethanol and water are separated by fraction distillation because
- A. They have different densities
 - B. They are both liquids
 - C. They have different boiling points
 - D. They are immiscible
25. The change in physical state from liquid to solid is called
- A. Freezing
 - B. Melting
 - C. Evaporation
 - D. Condensation
26. Which of the following is true about the pipette?
- A. Measures fixed volumes of liquids
 - B. It is calibrated
 - C. Used to separate immiscible liquids
 - D. Measures small volumes of liquids
27. In the laboratory, broken glass is disposed off in the
- A. Water sinks
 - B. Water gutter
 - C. Bottle racks
 - D. Glass bins
28. Organic residues are never poured in water sinks because
- A. They smell badly
 - B. They are toxic
 - C. They are insoluble in water

- D. They are highly flammable
29. A Bunsen flame is most convenient to use in a laboratory because
- A. It is produced by gas
 - B. It is adjustable
 - C. It is very hot
 - D. It is clean
30. Which of the following is true about elements in the same group?
- A. They have got the same number of energy levels
 - B. They have got a common valence
 - C. Atomic radius reduces down the group
 - D. They have got a common chemical formulae
31. Which of the following affects the boiling point of a liquid?
- A. Amount of heat provided
 - B. Volume of the liquid
 - C. Impurities in a liquid
 - D. Density of a liquid
32. Which of the following is not true about kinetic theory of gases?
- A. They are compressible
 - B. Particles move at a high speed
 - C. Particles often collide
 - D. Particles attract each other strongly
33. Substances which don't contain water of crystallization are called
- A. Anhydrous
 - B. Deliquesces
 - C. Hydrates
 - D. Efflorescence
34. An example of a hygroscopic substance is
- A. Sodium carbonate
 - B. Sodium hydride
 - C. Cobalt (ii) chloride
 - D. Sodium hydride
 - E. Calcium chloride
35. Which of the following factors does not affect the solubility of a salt?
- A. Temperature
 - B. Mass of solute
 - C. Impurities in solvent
 - D. Nature of solvent
36. Chromatography may be separated by
- A. Sand and salt
 - B. Pigments
 - C. Ethanol and water
 - D. Iodine and common salt

37. All matter is made up of small indivisible particles called
- A. Molecules
 - B. Nuclei
 - C. Atoms
 - D. Protons
38. Rate of diffusion is not affected by
- A. Temperature
 - B. Agitation
 - C. Volume of medium
 - D. Density of medium
39. Gases to be produced over water, it
- A. Should be very soluble in water
 - B. Should be insoluble in water
 - C. Should be coloured
 - D. Should be less dense than water
40. Which of the methods is used to separate kerosene-ethanol mixtures?
- A. Distillation
 - B. Filtration
 - C. Separating funnel
 - D. Sublimation
41. What is observed when lime water clears then turns purple dioxide?
- A. Lime water remains colourless
 - B. Lime water turns purple
 - C. Limewater turns milky
 - D. Lime water clears then turns milky
42. Which of the elements are found in clay soil?
- A. Sodium and chlorine
 - B. Aluminum and oxygen
 - C. Aluminum and zinc
 - D. Aluminium, copper and magnesium
43. Which one is the odd man out?
- A. Neon
 - B. Helium
 - C. Nitrogen
 - D. Xenon
44. The solution used to clean wounded parts of the body is?
- A. Iodine solution
 - B. Citric acid
 - C. Rubber solution
 - D. Turpentine
45. Rusting of iron is more possible in
- A. Oxygen gas
 - B. Dry air
 - C. Moist air

- D. Nitrogen
- 46. Liquids are able to flow because particles in a liquid
 - A. Move randomly
 - B. Are held by forces of attract but can move within the liquid
 - C. Are closely packed together
- 47. The best way of getting iron pieces from engine oil is by
 - A. Sublimation
 - B. Magnetization
 - C. Distillation
 - D. Filtration
- 48. The percentage of carbon dioxide in air is
 - A. 21%
 - B. 79%
 - C. 0.03%
 - D. None of them

49. a) Draw a well labeled diagram of the apparatus used to prepare oxygen gas in the laboratory from potassium chlorate and Manganese (IV) oxide.

b) Write an equation for the reaction leading to the formation of oxygen gas in the above set-up.

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c) What is the role of manganese (IV) oxide in the above set-up?
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d) Give two uses of Oxygen gas
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e) Mention two drying agents that can be used to dry gases such as carbon dioxide
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