

Addis Ababa City Administration Education Bureau
Kirkos Sub city Education Office
Grade 8 Chemistry Model Exam

Total number of items: 60

Time allowed: 60 minute

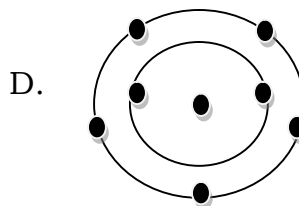
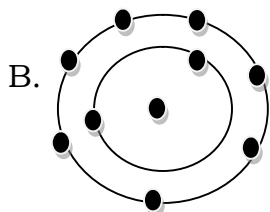
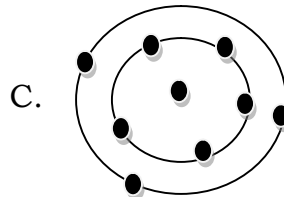
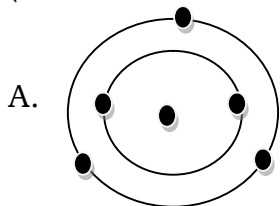
1. A subject that deals with properties, composition and transformation of a substance is _____.
A. Biology
B. Chemistry
C. Geology
D. Physics
2. Which one of the following is the role of chemistry in agriculture?
In the production of _____.
A. cement
B. detergent
C. fertilizer
D. petroleum
3. Which one of the following is a chemical property of substance?
A. Melting of ice
B. Density of water
C. Boiling of water
D. Burning of wood
4. Which one of the following is an example of basic oxide?
A. Na_2O
B. NO_2
C. N_2O_3
D. N_2O_5
5. Which of the following is an example of homogeneous mixture?
A. Alcohol and water
B. Benzene and water
C. Dusty air
D. River water
6. Which one of the following is pure substance?
A. Brass
B. Silver
C. Soda water
D. Soft drink
7. Which one of the following indicates mechanical change?
A. Dissolving of substance
B. Evaporating of water
C. Melting of ice
D. Tearing of paper
8. Changes that do **NOT** alter the composition of the substances are called _____.
A. condensation
B. chemical
C. deposition
D. physical

9. A mixture of iron fillings and sand can be separated by using _____.
A. beaker
B. burette
C. funnel
D. magnet
10. Which of the following process is used to separate salt from salt solution?
A. Sedimentation
B. Filtration
C. Evaporation
D. Decantation
11. Which one of the following is used to separate two miscible liquids that have different boiling points?
A. Magnetic separation
B. Filtration
C. Evaporation
D. Distillation
12. Which of the following is a correct combination of the symbol and name of an element?
A. Sn – Tin
B. Si – Silver
C. S - Sodium
D. Se – Silicon
13. A chemical reaction is a process in which substances are changed in _____.
A. to one or more new substance
B. size and shape
C. state of substance
D. gaseous state
14. Quantitatively $3\text{H}_2\text{O}$ stands for
A. molecules of water
B. 3 molecules of water
C. 3 atoms of hydrogen and oxygen
D. 6 atoms of hydrogen and oxygen
15. What is the name of the compound NaNO_3 ?
A. Sodium nitrate
B. Sodium carbonate
C. Sodium sulphate
D. Sodium phosphate
16. What is the valence number of iron in Fe_2O_3 ?
A. 1
B. 2
C. 3
D. 4
17. Which one of the following is the formula for aluminum nitride?
A. Al_3N
B. AlN
C. AlN_2
D. AlN_3
18. Which chemical reaction verifies the law of conservation of mass?
A. $\text{NaOH} + \text{H}_2\text{SO}_4 \longrightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
B. $\text{NaOH} + \text{H}_2\text{SO}_4 \longrightarrow 2\text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
C. $2\text{NaOH} + \text{H}_2\text{SO}_4 \longrightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
D. $2\text{NaOH} + \text{H}_2\text{SO}_4 \longrightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$

19. Which of the following step is **NOT** involved in balancing chemical equation by the L.C.M method?
- Writing the total valence number of each element.
 - Putting the dividend as the subscript for each species.
 - Find the L.C.M of the total valence numbers.
 - Dividing the L.C.M by each total valence numbers.
20. When the equation, $\text{HCl} + \text{Mg}(\text{OH})_2 \longrightarrow \text{MgCl}_2 + \text{H}_2\text{O}$ is correctly balanced, what is the coefficient of H_2O ?
- A. 5 B.4 C.3 S D.2
21. Which of the following statement is included in Dalton`s atomic theory?
- Atoms are indivisible.
 - Atoms can be created or destroyed.
 - All atoms consist of very small particles called ions.
 - Atoms of one element are different from atoms of any other element.
22. Which one of the following parts builds structure of an atom?
- Nucleus and neutrons
 - Nucleus and shells
 - Protons and electrons
 - Protons and neutrons
23. The sum of protons and neutrons in an atom is _____.
- atomic number
 - mass number
 - isotopic mass
 - atomic mass
24. What is the maximum population of electrons in M shell?
- A. 2 B.8 C.18 D.32
25. The systematic distribution of electrons in different energy level is called _____.
- Electronic configuration
 - number of electron
 - Orbit
 - shell
26. What is the valence electron of the element with atomic number 15?
- A. 5 B.6 C.7 D.8
27. The element with atomic number 19 is found in group ____ and period ____.
- IA & 4
 - IIIA & 4
 - IIIA & 3
 - IVA & 4

28. The correct atomic model of nitrogen is represented by:

(Atomic number N= 7)



29. How many valence electrons are there in the element sulphur, $^{32}_{16}\text{S}$?

A. 2

B. 6

C. 7

D. 8

30. The horizontal rows of elements in the periodic table are called _____.

A. energy level

C. periods

B. families

D. groups

31. How many elements are there in the fourth period of the modern periodic table?

A. 2

B. 8

C. 18

D. 32

32. Which one of the following formula represents an alkyne?

A. C_2H_2

C. C_2H_5

B. C_2H_4

D. C_2H_6

33. Which one of the following is used for production of propylene plastics?

A. Ethene

C. Butene

B. Methane

D. Propene

34. The type of binary compounds that contain oxygen is _____.

A. acids

C. oxides

B. bases

D. salts

35. Which one of the following is an example of metallic oxide?

A. NO

C. Na_2O

B. N_2O

D. NO_2

36. Which one of the following is **NOT** the property of bases?
- A. Change the color of indicators.
 - B. Release the hydroxide ion in water solution.
 - C. Neutralize acidic solution.
 - D. Reacts with active metals.
37. Sulphur dioxide can be prepared in laboratory by _____.
- A. reaction of sulphur trioxide with water
 - B. direct combination of sulphur with water
 - C. boiling of sulphur
 - D. combustion reaction of sulphur
38. Which of the following bases is used for neutralizing acidic soils?
- A. $\text{Al}(\text{OH})_3$
 - B. $\text{Ca}(\text{OH})_2$
 - C. NH_4OH
 - D. $\text{Mg}(\text{OH})_2$
39. Magnesium is used to make _____.
- A. aero plane body
 - B. fire extinguisher
 - C. soap
 - D. insecticide
40. Which of the following compounds of sodium and their uses are correctly matched?
- A. Sodium chloride – fertilizer
 - B. Sodium carbonate – decrease soil acidity
 - C. Sodium amide – extraction of gold
 - D. Sodium hydroxide – preserve foods
41. Why aluminum does **NOT** exist in free State? Because it is _____.
- A. metallic element
 - B. more stable
 - C. inactive
 - D. reactive metal
42. Which of the following is the component of bronze?
- A. Zinc
 - B. Tin
 - C. Lead
 - D. Iron
43. One of the following is found in native form?
- A. Aluminum
 - B. Calcium
 - C. Platinum
 - D. Zinc

44. Which of the following compound is used for making moulds?

A. CaSO_4

C. CS_2

B. CCl_4

D. CaC_2

45. Which one of the following is the allotropic form of sulphur?

A. Diamond

C. Crystalline

B. Graphite

D. Rhombic

46. The most abundant element in the earth's crust is _____.

A. Oxygen

C. Nitrogen

B. Silicon

D. Carbon

47. Which of the following soluble salts causes hardness of water?

A. Washing soda

C. Aluminum sulphate

B. Calcium bi carbonate

D. Calcium chloride

48. Global warming is caused by the accumulation of a higher concentration of _____.

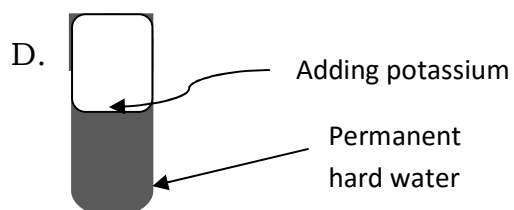
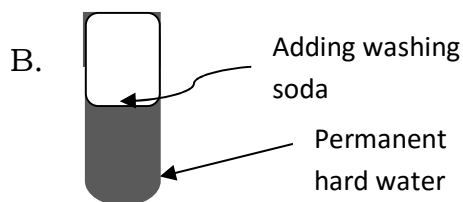
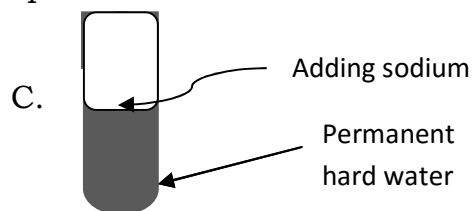
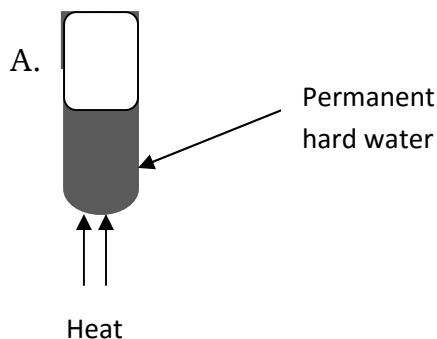
A. sulphur dioxide

C. ammonium ion

B. nitrogen dioxide

D. carbon dioxide

49. Which experiment below shows to soften permanent hard water?



50. The percentage of the solid component of soil by volume is _____.
A. 25 B. 50 C. 75 D. 100
51. Which of the following pairs of elements are major plant nutrient?
A. Silver & Gold C. Iron & Sodium
B. Potassium & Phosphorus D. Fluorine & Chlorine
52. Which PH range of the soil is favorable for bean production?
A. 2.5 – 3.5 C. 6.0 – 7.5
B. 3.5 – 4.5 D. 8.5 – 13.0
53. Which one of the following is **NOT** a use of coal?
A. Manufacture of iron C. Domestic fuel
B. Source of gaseous fuel D. Fire extinguisher
54. The elemental composition of natural gas is _____.
A. C,H,O C. F, Cl, Br
B. S,N,P D. Ne, He, Ar
55. Which one of the following is a chemical method of water treatment?
A. Boiling C. Filtration
B. Chlorination D. Screening
56. How many moles are there in 96 grams of SO₂? (Atomic mass S=32 & O =16)
A. 0.5 mole B. 1.5 mole C. 1.0 mole D. 1.33 mole
57. What is the mass of 6.02×10^{23} molecules of water? (Atomic mass H=1, O =16)
A. 10 gram B. 18 gram C. 180 gram D. 360 gram
58. What is the percentage by mass of carbon in carbon dioxide, CO₂? (Atomic mass C=12 & O = 16)
A. 27 B. 30 C. 63 D. 73
59. What is the empirical formula of a compound containing 70% of iron and 30% oxygen?
(Atomic mass Fe =56, O = 16)
A. Fe₂O₃ B. FeO₂ C. Fe₃O₄ D. FeO₂
60. What is the molecular mass of a compound with a molecular formula of C₁₂H₂₂O₁₁? (Atomic mass C= 12, H=1, O =16)
A. 336 a.m.u B. 342 a.m.u C. 396 a.m.u D. 442 a.m.u