END OF FIRST TERM EXAMINATIONS

CLASS: JHS 2 SUBJECT: **INTEGRATED SCIENCE**

NAME…………………………………………………..……………………... DURATION: **………..………**

**SECTION A**

Choose the correct answer from the alternative lettered A to D.

1. Which of the following human activities maintain the carbon cycle?
2. Bush burning
3. Felling of trees
4. Release of fumes from factories
5. Replanting of trees felled as timber
6. What is the colour of the neutral wire in a three-pin plug?
7. Blue
8. Brown
9. Green
10. Yellow
11. The number of elements in the compound Ca(OH)2  is
12. 2
13. 3
14. 4
15. 5
16. One difference between metals and non-metals is that metals
17. Have low density
18. Are not malleable
19. Have luster
20. Have low melting points
21. A mixture of sugar and water could be separated by
22. Decantation
23. Evaporation
24. Filtration
25. Sublimation
26. Which of the following agencies is responsible for providing information on the weather and climate conditions of an area?
27. Animal husbandry department
28. Extension services department
29. Information services department
30. Meteorological services department
31. Day and night occur because the earth
32. Moves around the sun
33. Moves from east to west
34. Moves round the moon
35. Rotate on its axis
36. An atom of an element is represented as
37. 13
38. 14
39. 27
40. 40
41. The dissolution of sugar in water is a physical change because the sugar
42. Cannot be seen in water
43. Cannot be separated from the water
44. Can be separated from the water
45. Can be tested in the water
46. The systematic name of the compound FeS is
47. Iron (I) sulphide
48. Iron (II) sulphide
49. Iron (III) sulphide
50. Iron (IV) sulphide
51. A metal block has a mass of 0.1kg. Calculate its volume if the density is 1.0kgm-3
52. 0.01m3
53. 0.01m-3
54. 1.00m3
55. 10.00m3
56. Why of the following processes are conversion of the state of matter is correct?

cool

cool

1. Gas liquid solid

heat

heat

1. Solid gas liquid

cool

cool

1. Solid liquid gas

heat

heat

1. Gas liquid solid
2. Which of the following gases is involved in the rusting of iron?
3. Oxygen
4. Hydrogen
5. Nitrogen
6. Carbon dioxide
7. Metals that are used to make ornaments have low
8. Conductivity
9. Ductility
10. Malleability
11. Reactivity
12. The charge of Sulphur in the compound SO2 is
13. -2
14. +2
15. -4
16. +4
17. Which of the following substances is a solid – gas mixture?
18. Lather
19. Bronze
20. Steel
21. Smoke
22. Which of the following compounds does not contain carbon?
23. Petrol
24. Palm oil
25. Water
26. Alcohol
27. Which of the following properties are true about all matter except

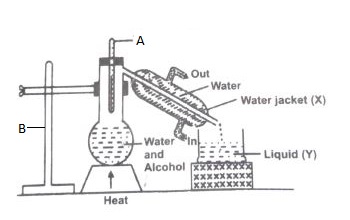
Matter has

1. Volume and fixed shape
2. Volume and mass
3. Mass and indefinite
4. Density and fixed shape
5. A metal that is used as thermometric liquid is
6. Aluminum
7. Copper
8. Mercury
9. Silver
10. The instrument used to measure temperature is the
11. Thermometer
12. Barometer
13. Manometer
14. Ammeter
15. A positively charged ion is called
16. Anion
17. Cation
18. Neutron
19. Proton
20. How many days does it take the moon to go completely round the earth
21. 1 day
22. 28 days
23. 30 days
24. 356 days
25. In electrical circuits, the components that protects appliances against very high current is the
26. Capacitor
27. Fuse
28. Resistor
29. Switch
30. The chemical formula for Aluminum oxide is represented as Alx Oy. The values of x and y are respectively
31. 2 and 3
32. 1 and 3
33. 3 and 1
34. 3 and 2
35. The method of purification of water that produces water containing very little impurities is
36. Boiling
37. Chlorination
38. Distillation
39. Filtration
40. Crystals of sugar where obtained when a hot solution of sugar was cooled to room temperature. What conclusion can be drawn from this observation?
41. Sugar does not dissolve in cold water
42. Sugar does not dissolve in hot water
43. Sugar dissolves less in hot water than cold water
44. Sugar dissolves more in hot water than cold water
45. If a mixture of water and powdered charcoal is allowed to stand for a long time, the charcoal
46. rises to the top
47. dissolves completely in the water
48. continues to remain suspended in the water
49. settles at the bottom
50. When elements combine to form a compound, the
51. constituents can be separated by a physical process
52. volume of the compound is the sum of the volumes of the constituents
53. reaction can be represented by a chemical
54. reaction does not involve a heat change
55. Which of the following statements about the scientific method is/are correct? It provides
56. Logical procedure for arriving at a knowledge
57. Knowledge that can be verified
58. Knowledge that can never be changed
59. I and II
60. I only
61. I and III only
62. II and III only
63. The joule is the S.I. unit for
64. energy
65. force
66. power
67. pressure
68. Which of the following elements is a semi-metal?
69. carbon
70. nitrogen
71. silicon
72. sodium
73. Solid non – metals normally break into pieces when hammered because they are
74. brittle
75. ductile
76. lustrous
77. malleable
78. Elements that could easily lose electrons to form cations are
79. metals
80. non – metals
81. metalloids
82. noble gases
83. Which of the following processes involve a change in state of matter form liquid to solid
84. evaporation
85. freezing
86. melting
87. sublimation
88. The sub – atomic particle with zero change in the nucleus of an atom is called
89. proton
90. ion
91. electron
92. neutron
93. The importance of fuse in an electrical circuit is to
94. regulate the voltage
95. minimize the use of current
96. prevent damage to electrical appliances
97. alter the flow of current in the current
98. An example of chemical compound is
99. aluminum
100. ammonia
101. oxygen
102. silicon
103. When a solid – liquid mixture is filtered, the liquid that separates out into the container is called
104. filtrate
105. residue
106. sediment
107. solution
108. In which of the following processes is carbon absorbed from the atmosphere?
109. respiration
110. burning
111. decomposition
112. photosynthesis
113. Which of the following statements is not true about the wet seasons?
114. Bush fires are common
115. Trees and weeds grow fast
116. Small animals increase in number
117. The weather is generally cool

**SECTION B**

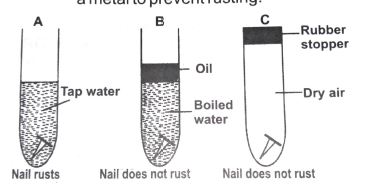
Answer question 1 and any other four questions in this section.

Q1. a. The diagram below is an illustration of an experimental setup for separating a mixture of water and alcohol. Study the diagram carefully and answer the questions that follow.



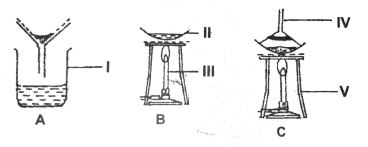
1. State the method of separation shown in the setup (1 mark)
2. Identify liquid Y, with reason(s) (2 marks)
3. Give the function of A and the water jacket X (2 marks)
4. What physical processes are involved in the method of separating the mixture (2 marks)
5. State the physical property which makes it possible to separate the water and alcohol. (1 mark)
6. Name the part labelled B and its functions. (2 marks)

b. In an experiment, a student took three iron nails and cleaned their surfaces dry and placed them in three separate test tubes in set-ups A, B and C. as shown in the diagram. After three days the nails in set-up A was found to have rusted while the nails in set-ups B and C did not.



1. Why was the water in the set – up B boiled? (2 marks)
2. Explain the function of the oil on top of the water in the set – up B. (2 marks)
3. State the purpose of the rubber stopper in the set – up C? (1 mark)
4. Why did the nail in set A rust? (2 marks)
5. Suggest an aim for the experiment. (1 mark)
6. From the experiment, explain why oil or grease is applied on the surface of a metal to prevent rusting? (2 marks)

C. The diagrams below are different laboratory set – ups used in the separation of nutrients. Study the diagrams carefully and answer the questions that follows.



1. Name each of the parts labelled. I, II, III, IV, V (2 ½ marks)
2. Name the separation method represented by each diagram (2 ½ marks)
3. Which of the set – ups is used to obtain;

Salt from water (1 ½ marks)

Clear water from muddy water (1 ½ marks)

1. Differentiate between set – ups B and set – up C. (2 marks)

Q2. a. Write the systematic name for each of the following compounds

1. H2O
2. MgO
3. CaO
4. CaCl2 (4 marks)

b. Name the instrument used in measuring the following

1. Length of a rope
2. Mass of a stone
3. Temperature of a liquid
4. Volume of a liquid (4 marks)

C. i. State three factors that affect the rate at which solute dissolves in a solvent. (1 ½ marks)

ii. Differentiate between solute and solvent (2 marks)

d. i. State four stages in the carbon cycle (2 marks)

ii. Explain any one stage in (d.i) (1 ½ marks)

Q3. a. i. define an alloy. (1 mark)

ii. State the composition of each of the following alloys:

1. Brass
2. Steel
3. Bronze (3 marks)

b. i. Explain the term soil profile (2 marks)

ii. State three importance of studying the soil profile (3 marks)

c. i. Name four weather measuring instruments (2 marks)

ii. State the functions of any two in (c.i) (2 marks)

d. i. Draw potassium atom and show the distribution of electrons in its shells. [K = 19] (2 marks)

**Q4.** State;

1. Two differences between plants and animals (2 marks)
2. Two similarities between plants and animals (2 marks)

b. Mention the suitable solvent for each of the following solutes

1. Grease
2. Ink stain
3. Starch
4. Cube sugar
5. Oil paint
6. Iodine (3 marks)

c. i. state three differences between metals and non – metals

ii. Explain why gold is used in the manufacturing of jewelries (4 marks)

d. i. Define the following terms

. Atom

. Elements

. Compounds

. Mixtures (4 marks)

**Q5.** a. i. state the physical processes involved in separating a mixture of sand and salt.

(1 ½ marks)

ii. Explain how sand and salt can be separated (3 marks)

b. differentiate between the following terms

. Emulsions and colloids (2 marks)

. Saturated and concentrated solution (2 marks)

c. i. name the three sub – atomic particles (1 ½ marks)

ii. State the relative charge on each of the three sub – atomic particles mentioned in (i) above. (1 ½ marks)

d. i. Explain the term pollination

ii. State four characteristics of insect pollinated flowers

Q6. a. i. Define valency. (1 mark)

ii. State the valences of the following elements and radicals:

. Iron

. Zinc

. Hydroxyle

. Carbonate (4 marks)

b. i. balance the following chemical equations

i. N2 + H2 NH3

ii. CaCO3 + HCl CaCl2 + CO2 + H2O

iii. Ca (OH)2 + HCl CaCl2 + 2 H2O (3 marks)

c. i. Explain land rotation as a farming system (1 mark)

ii. State two advantages of land rotation as a method of farming (2 marks)

iii. Complete the four-year rotational program for the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year / plot | Plot 1 | Plot 2 | Plot 3 | Plot 4 |
| 1st year | yam | C | tomato | g |
| 2nd year | Cowpea | Tomato | E | Yam |
| 3rd year | A | Maize | F | Cowpea |
| 4th year | B | D | Cowpea | h |

(3 marks)

iv. List two leguminous crops used in crop rotational program (1 mark)