S1 CHEMISTRY EXERCISE

Instruction: This paper consist of two sections, A,B and part C

Answer all questions from sections A and B. Choose only two questions in sections C.

Section A : Short answer questions (50 marks)

1. Your friend tells you that she wants to become a medical doctor. Which two subjects must she score highly so as to pursue her career of choice? **(1 mark)**

2. Explain the link between chemistry and:

(a) Geography **(1 mark)** (b) Agriculture **(1 mark)**

3. Briefly explain how the following have contributed to the economy of Rwanda.

(a) Development of vaccines **(2 marks)**

(b) Manufacture of fertilizers and animal feeds **(2 marks)**

(c) Efficient transport and communication system **(2 marks)**

4. Why do you think knowledge of Chemistry is useful in farming? **(2 marks)**

5. The following are careers that one can pursue after perfoming well in chemistry. Which one is not. **(1 mark)**

A. Quality control C. Nutrition

B. Chemical engineering D. Banking

6. An outbreak of a disease whose main symptom is diarrhoea has occured in a certain cell. Health officers suggest that the outbreak is due to residents drinking contaminated water. With your knowledge of chemistry, what would you advise your friend who lives in that cell? **(2 marks)**

7. When asked to say the meaning of Chemistry, Senior 1 learners from a certain school gave the following answers:

Learner A – The study of drugs and chemicals.

Learner B – The study of processes taking place in a laboratory.

Learner C – The study of the structure and composition of substances and the way they behave under different conditions.

Which learner do you think was right? Explain **(2 marks)**

8. How is the knowledge of Chemistry important in the following areas?

(a) Water treatment **(1 mark)** (b) Agriculture **(1 mark)**

(c) Transport industry **(1 mark)** (d) Pharmaceutical industry **(1 mark)**

9. Name one item in your house that are: **(1.5 marks)**

• delicate • expensive • harzadous

10. One of the requirement for working effectively in the laboratory is to know laboratory rules

a)Explain why **(4.5 marks)**

(i)we never taste or eat anything in the laboratory

(ii) We always use gloves when offering First Aid to a bleeding patient

(iii) We never look directly into flasks and test tubes

(iv) We always use a new spatula each time you are scooping reagents from a different container

(v)We always keep flammable substances away from flames

(vi) We do not put insoluble materials into the sinks.

(vii) We always extinguish flames that are not in use

(viii) We always wear laboratory coats, closed shoes, goggles, gas masks and gloves when you are working with chemicals.

(ix) We always clean all the apparatus and return them in the right place.

b) (i)What can you do before trying out any experiment, handling apparatus or chemicals? **(0.5 mark)**

(ii)What can you do when you need to smell any chemical? **(0.5 marks)**

11. Give the meaning of the following laboratory safety symbols **(1.5 marks)**

a)  b)  c) 

12. Draw the followind laboratory safety symbol showing **(1.5 marks)**

a) Poisonous substance and that can lead to death when inhaled

b) Substance that irritate the skin when in contact

c)Substance that can easily catche fire and burn.

13. State the measures you will take in case of the following laboratory accidents. **(2 marks)**

(a) Fire outbreak

(b) You are cut by a broken glass

(c) Acid gets splashed into your eyes

(d) Someone accidentally drinks a chemical in the laboratory.

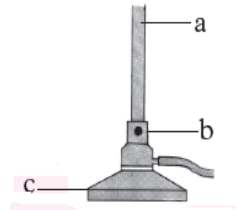
14. a)Suggest how substances can be heated in the laboratory. **(1.5 marks)**

b) Basing on the source(s) of heat that is or are used at your home, discuss with your parents

(i) Why they prefer that/those sources of heat? **(1 mark)**

(ii) What effect does the sourc(es) of heat you have mentioned have on the cooking utensils? **(1 mark)**

15. Analyze the figure below and answer questions



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a) Give the name of the apparatus **(1 mark)**

b) (i)Name the parts labelled a, b and c?

(ii) What is the function of the parts labelled a, b and c? **(3 marks)**

(iii) What is the name of the flame produced when the air hole of the apparatus below is open? **(1 mark)**

16. Complete the table below**(3.5 marks)**

Apparatus	uses
	Transferring accurate?exact volumes of liquids
Ignition tube	
Volumetric flask	
	Separating immiscible liquids
Volumetric flask	
	Measuring approximate volumes of liquids or solutions.
	Fix a hot test tube.
Thermometer	

17. State whether the following statements are **true** or **false**. **(0.5 marks)**

(a) Burning wood is a chemical change.

(b) Drying a shirt in the sun is a chemical change.

(c) Dissolving sugar in tea is a physical change.

(d) Cooking meat is a chemical change.

18. Given the following substances: copper, milk and tap water. Classify them into pure substances and mixtures. **(1 mark)**

19. Name the methods by which the following mixtures can be separated. **(2.5 marks)**

(a) Kerosene from crude oil

(b) Pure water from seawater

(c) Cream from milk

(d) Grains from husks

(e) iodine from table salt

20. Mukamutara was sent by her mother to buy a packet of salt from a kiosk. On her way back, she tripped and the packet fell down bursting open. She collected the salt together with some soil and small stones. Give a detailed procedure that she could use to obtain clean salt crystals from this mixture. **(2 marks)**

Section B: Practical questions (30 marks)

21.(i) Burn a candle and state the observations made when candle wax is heated then allowed to cool. (**2marks)**

i) Using Kinetic theory ,explain the change in 21 (i) above? (**3 marks)**

(ii)Do burning a candle produce flame? If yes, state which type is the flame. (**1mark)**

(iii) Draw the candle flame with the different zones (**2 marks)**

(iv) Is the candle flame suitable for cooking? Justify your answer (**1.5 mark)**

(v) Can the burnt candle be remoulded? Justify your answer (**1.5 mark)**

(vi) When burning a candle two changes take place. Explain this statement (**2marks)**

(vii) Explain why people who use cooking gas as source of heat have to always turn off the flames it if they are not heating. (**1mark)**

22. a)Burn a wooden splint in limited supply of air and explain what happens . (**1mark)**

b) Burn a wooden splint in unlimited supply of air and explain what happens . (**1mark)**

c)Analyze the cooking gas or biogas flame and differentiate to that of a candle**(if you use cooking gas or biogas as source of heat at your home)** (**3marks)**

23. a)Discuss with your parents/ brothers /sisters why you can get the smell of food being cooked in the kitchen when seated in the sitting room. (**2marks)**

b) Try to go in another room. Do you again smell it? Ask yourself why and share your answers. (**2marks)**

c) Discuss how food particles moves from our intestines into the blood stream (**2marks)**

24. Observe the iron sheet on some house around you and discuss the followings with your parents /brother/sisters

a) What is rusting? (**1 mark)**

b) What are the conditions of rusting? (**2marks)**

c)What are the disadvantages of rust (**2marks)**

d) What are the four ways to prevent rust? (**2 marks)**

Section C: Choose only one question (20 marks)

25. Our health must always be given first priority .Discuss with your family member the contribution of chemistry to prevent **coronavirus COVID-19.** (use not more than 1 page) (**20 marks)**

26. Proper disposal of wastes ensures an effective working environment. (use not more than 1 page) **(20 marks)**

Stay safe at home!