

2024  
**545/1 CHEMISTRY PAPER 1**  
**TEST 1**

**Time allowed: 2 hours.**

**Instructions.**

- *This Paper consists of **two** sections **A** and **B**.*
- *Answer **all** questions in section **A** and only **2** questions from section **B**.*
- *Questions in section **B** carry equal marks.*

### SECTION A (Attempt all questions).

1. The chemistry laboratory is a risky place and requires learners to take precaution while conducting experiments. Recently a student sustained an injury shown by the image below.



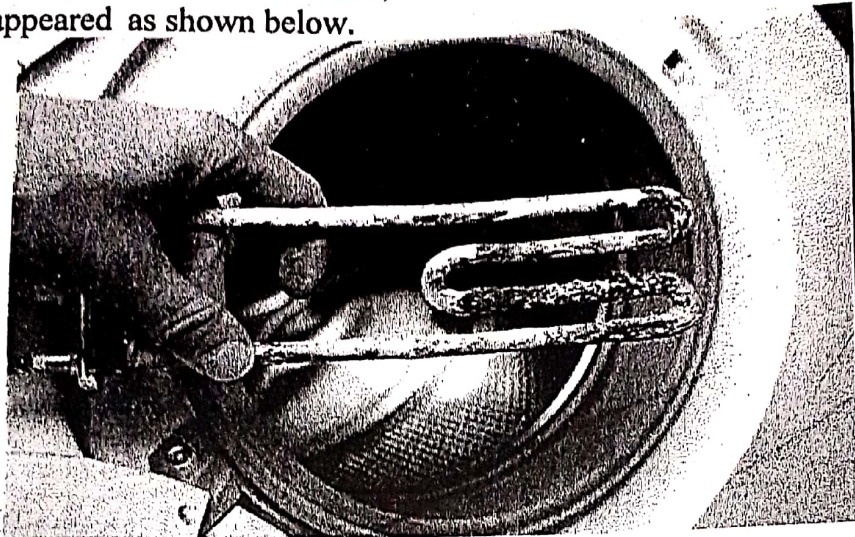
- (a) (i) Identify the nature of injury.  
(ii) How can such an injury be handled?  
(iii) Explain how such an injury can be avoided.  
(iv) Design a poster or signage with precaution message to display on wall of the laboratory to avoid such injuries.
- (b) Why are the laboratory rules and regulations important?

### SECTION B (Attempt only 2 questions)

2. Anena charity, a student working hard on the laboratory experiment that uses strong acid. Halfway through the laboratory, the student gets hungry and starts eating a bag of chips. When she finished, she started licking her fingers. Another student carefully pours unknown solution from a test tube into a beaker. Her friend sneaks behind her in order to surprise him. The student accidentally drops a glass beaker on the floor and pieces of glass land on the sandaled feet and both left without cleaning.
- (a) Identify the safety rules being violated.
- (b) What possible risks in this scenario and how can you minimize the harm?



3. Tooth decay begins when bacteria in your mouth break down leftover food to acids. The acids corrode the tooth's surface (enamel). This can lead to a small hole in a tooth, called a cavity. If tooth decay is not treated, it can cause pain, infection, and even tooth loss. Regular brushing of teeth can prevent tooth decay.
- (a) What is an acid?
  - (b) How do acids corrode the teeth?
  - (c) Explain how brushing the teeth with toothpaste prevent tooth decay?
4. After boiling water for some time, the heating element of a water heater appeared as shown below.



- (a) What happened to the heating coil?
- (b) How does the boiled water cause such an effect on the heating coil?
- (c) Explain how such a problem can be overcome.

**END**