

**Section 1: Multiple Choice Questions (10 questions, 20 marks)**

- 1. The first step in the scientific process is to **ask a question**.
- 2. A hypothesis is a **testable prediction**.
- 3. The independent variable is the **factor that is manipulated**.
- 4. The dependent variable is the **factor that is measured**.
- 5. A control group is used to **compare the results of the experiment**.
- 6. The results of an experiment should be **shared with the scientific community**.
- 7. The scientific process is **iterative**.
- 8. The scientific process is **self-correcting**.
- 9. The scientific process is **objective**.
- 10. The scientific process is **transparent**.

**Section 2: Short Answer Questions (5 questions, 10 marks)**

- 1. Describe the steps of the scientific process.
- 2. Explain the difference between a hypothesis and a prediction.
- 3. Describe the role of a control group in an experiment.
- 4. Explain why it is important to share the results of an experiment.
- 5. Describe the scientific process in your own words.

**Section 3: Essay Question (1 question, 10 marks)**

- 1. A scientist is studying the effect of temperature on the rate of photosynthesis. The scientist has set up an experiment with three groups of plants. Group 1 is kept at 20°C, Group 2 is kept at 25°C, and Group 3 is kept at 30°C. The scientist measures the amount of oxygen produced by each group of plants over a period of 24 hours. The results are shown in the table below.

Group	Temperature (°C)	Amount of Oxygen Produced (ml)
1	20	10
2	25	15
3	30	20

(a) Identify the independent variable and the dependent variable in this experiment.

(b) Describe the experimental design used in this experiment.

(c) Explain the results of the experiment.

(d) Discuss the limitations of this experiment.