



MACHAKOS UNIVERSITY

University Examinations 2022/2023

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF PHYSICAL SCIENCES
THIRD YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF EDUCATION (SPECIAL NEEDS)
BACHELOR OF EDUCATION (SCIENCE)
SPH 303: PRACTICAL PHYSICS I

DATE

TIME:

INSTRUCTIONS:

- Answer ALL the questions.

QUESTION ONE (25 MARKS)

- Describe any five laboratory safety precaution measures that a student should adhere to while in a laboratory setup (10 marks)
- While writing a report, what is the purpose of having an abstract? (4 marks)
- What are the contents of a well written report? (8 marks)
- Identify any three sources of systematic errors (3 marks)

QUESTION TWO (12 MARKS)

A student performs a “toss-die dice” experiment whose tabulated readings is as shown in Table 1.

Table 1

Toss number	Number of dice remaining
0	100
1	84
2	70

3	59
4	46
5	40
6	32
7	27
8	23

- a) Plot a relevant graph for the results (6 marks)
- b) Calculate the half-life of the dice (4 marks)
- c) Write a relevant equation for this result (2 marks)

QUESTION THREE (8 MARKS)

After conducting an experiment on Zener diode, Ondieki obtained the following results as tabulated in table 2.

S No	Voltage (V)	Current (mA)
1	0	0
2	2	0
3	3	0
4	4	0
5	5.1	0.1
6	5.2	0.1
7	5.3	0.1
8	5.5	0.4
9	5.6	9
10	5.7	12.8
11	5.8	15.8
12	5.9	25.2
13	6	31

- a) Plot graph of V against I (6 marks)
- b) From the graph, determine the Zener breakdown voltage (2 marks)

QUESTION FOUR (20 MARKS) - To do an experiment in the laboratory either on charge and discharge of a capacitor or Interference-Newton's rings.