

B.Sc. F.Y. (NEP) - Semester-I
SEC14 / STUG01PHY004 - Physics (Laboratory and Technique)

P. Pages : 2

Time : Two Hours



GUG/W/24/15898

Max. Marks : 40

Notes : 1. All questions are compulsory and carry equal marks.

Either

1. A) Explain the safety protocols for the laboratory work regarding. 8
i) Chemical handling
ii) Electrical safety

OR

- B) a) What are the personal protective equipment in laboratory? 2
b) What is precision and accuracy in experimental measurement? 2
c) What is error? Explain how it can be minimized. 2
d) Explain the measurement by the vernier caliper. 2

Either

2. A) Explain the experimental setup of any one experiment with its designing principle. 8

OR

- B) a) What are the factors for designing the experiment? 2
b) Explain the selection of appropriate instrument in the laboratory. 2
c) State any four commonly used experiment to do in physics laboratory with their uses. 2
d) Explain the need of calibration of an instrument. 2

Either

3. A) Discuss the technique of following methods of the measurement. 8
i) Direct method
ii) Indirect method
iii) Comparative method

OR

- B) a) What are the techniques for precise measurement of physical quantities? 2
b) Discuss random error in measurement. 2

- c) What is uncertainty estimation in experimental measurement. 2
- d) What are the sources of error in experimental measurements. 2

Either

- 4. A) Explain the statistical method to analyse the experimental data. State the advantages of this method for analysing experimental data. 8

OR

- B) a) What is hypothetical data and real data technique of measurement? 2
- b) Explain the graphical method to represent the experimental data. 2
- c) Discuss the histograms and scatter plot graphs. 2
- d) What are results and conclusion from the results in the experiment. 2

- 5. Attempt **any eight** from the followings.

- a) State safety rules to prevent injury in the laboratory. 1
- b) State least count of micrometer screw gauge. 1
- c) What is multimeter? 1
- d) What is meant by objective of experiment? 1
- e) State the use of vernier caliper. 1
- f) State the use of screw gauge in the laboratory. 1
- g) What is meant by precise measurement? 1
- h) What is sensor? 1
- i) State the types of errors. 1
- j) Is Aim and objective same of an experiment? 1
- k) What is experimental data? 1
- l) State the use of graph in the experimental result. 1
