

Total No. of Printed Pages:2

**SUBJECT CODE NO: H-1648**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**M.E. (Mechanical)**  
**Engineering Experimental Technique**  
**(REVISED)**

[Time: Three Hours]

[Max.Marks:80]

- N.B Please check whether you have got the right question paper.
- A. Solve any three questions from each section.
  - B. Figure to the right indicate full marks.
  - C. Assume suitable data, if necessary.
  - D. Use of non-programmable calculator is allowed.

**Section A**

- |     |   |    |
|-----|---|----|
| Q.1 | a) Explain the concept of generalized measurement systems.                                | 05 |
|     | b) Define and explain the basic concept of calibration, standard and dimensions and unit. | 08 |
| Q.2 | a) Explain with an example, what is system response?                                      | 05 |
|     | b) Explain the causes and types of experimental error.                                    | 08 |
| Q.3 | a) What is meant by level of significance; level of confidence?                           | 06 |
|     | b) Explain chi – square test.   | 07 |
| Q.4 | Write short notes on ( <u>any two</u> )   | 14 |
|     | i. Experimental planning  |    |
|     | ii. Uncertainty analysis  |    |
|     | iii. Chauvenet's criterion  |    |
|     | iv. Impedance matching  |    |

**Section B**

- |     |  |    |
|-----|--|----|
| Q.5 | a) What are the practical considerations of seismic instruments?       | 07 |
|     | b) How are elastic elements used for force or torque measurements?     | 06 |
| Q.6 | a) What are the various methods of sound measurement? Explain any one. | 06 |
|     | b) Explain the general data acquisition system.                        | 07 |
| Q.7 | a) What do you mean by data transmission? Explain.                     | 08 |
|     | b) Explain any two types of strain gauges.                             | 05 |

- Q.8 Write short notes on (any two)
- i. Signal conditioning
  - ii. Simple vibration instrument
  - iii. The program as substitute for wired logic
  - iv. Sound measurement.