

SUBJECT CODE 8053
FACULTY OF ENGINEERING AND TECHNOLOGY
M.E.(Mechanical) Examination Nov/Dec 2015
Engineering Experimental Technique
(Revised)

[Time: Three Hours]

[Max. Marks: 80]

“Please check whether you have got the right question paper.”

- N.B
- i) Solve any three questions from each section.
 - ii) Figures to the right indicate full marks.
 - iii) Draw diagrams wherever necessary.
 - iv) Assume suitable data if necessary.

Section – A

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| Q1. | A) Define and explain the basic concept of calibration, standard and dimensions and units. | 08 |
| | B) Explain the concept of generalized measurement system | 05 |
| Q.2 | A) Explain the basic concepts in dynamic measurements. | 08 |
| | B) Explain how to carry out the procedure of experimental planning? | 05 |
| Q.3 | A) Explain the causes and types of experimental errors. | 08 |
| | B) What do you mean by statistical analysis of experimental data? | 05 |
| Q.4 | A) Explain the chi-square test of goodness of fit. | 08 |
| | B) What do you mean by the correlation coefficient? | 05 |
| Q.5 | Write short notes on any two. | 14 |
| | 1. Impedance matching | |
| | 2. Uncertainty Analysis | |
| | 3. Evaluation of uncertainties for complicated data reduction | |
| | 4. The method of least square | |
| | 5. General consideration in data analysis | |

Section – B

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| Q.6 | A) Explain any two types of strain gauges. | 08 |
| | B) Explain the concept of mass balance measurement. | 05 |
| Q.7 | A) Explain the concept of elastic elements of force measurement | 08 |
| | B) Explain the concept of stress strain measurement. | 05 |
| Q.8 | A) What are the practical considerations of seismic instruments? | 08 |
| | B) What are the various methods of sound measurement? Explain any one. | 05 |
| Q.9 | A) Explain the general data acquisition system. | 08 |
| | B) What do you mean by data transmission? Explain. | 05 |
| Q.10 | Write short notes on <u>any two</u> . | 14 |

1. Torque measurement
2. Simple vibration instrument.
3. The program as substitute for wired logic.
4. Analog to digital to analog conversions.
5. Data storage and display.