

**SUBJECT CODE NO:- P-81**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**B.E.(MECH) Examination May/June 2017**  
**Metrology and Quality Control**  
**(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) Figure to the right indicates full marks.
  - iii) Assume suitable data if required.
  - iv) Use of non-programmable calculator is allowed.

## Section A

- |     |      |  |    |
|-----|------|--|----|
| Q.1 | A    | Explain measurement standards with the help of suitable example  | 07 |
|     | B    | Explain autocollimator with neat sketch  | 06 |
| Q.2 | A    | What is surface finish measurement? Explain any one of the equipment for surface finish measurement in detail. | 07 |
|     | B    | Draw a neat sketch of NPL flatness interferometer & explain in detail.   | 06 |
| Q.3 | A    | Discuss the advantages in metrology in detail.   | 07 |
|     | B    | Explain Parkinson's gear tester for measuring gear error.  | 06 |
| Q.4 | A    | Explain LVDT in detail with neat sketch  | 07 |
|     | B    | Write down different types of gear error   | 06 |
| Q.5 |      | Write short note on (Any three)  | 14 |
|     | i.   | CMM  |    |
|     | ii.  | IS 919-1963  |    |
|     | iii. | Profile projector  |    |
|     | iv.  | Line& End standard.  |    |

## Section B

- |      |      |   |    |
|------|------|---|----|
| Q.6  | A    | Differentiate between cost of quality & value of quality                | 07 |
|      | B    | Discuss the quality statements in detail.                               | 06 |
| Q.7  | A    | With the help of suitable example, explain quality function deployment. | 07 |
|      | B    | Explain FMECA in detail.  | 06 |
| Q.8  | A    | Explain control charts for attributes & variables in detail.            | 07 |
|      | B    | Explain cause & effect diagram with suitable example.                   | 06 |
| Q.9  | A    | Explain OC curve & its characteristic in detail.                        | 07 |
|      | B    | Discuss the technique of standardization.                               | 06 |
| Q.10 |      | Write short note on (Any three)   | 14 |
|      | i.   | Value engineering   |    |
|      | ii.  | Pareto analysis   |    |
|      | iii. | Kaizan technique  |    |
|      | iv.  | TPM   |    |