B.Tech. SEM -VI Mechanical 2014 Course (CBCS): SUMMER - 2019 SUBJECT: MECHANICAL MEASUREMENT & METROLOGY

Time: 02.30 PM TO 05.30 PM

Day: Wednesday

Date: 29/05/2019 Max. Marks: 60 S-2019-2759 N.B.: 1) All questions are **COMPULSORY**. 2) Figures to the right indicate FULL marks. 3) Assume suitable data if necessary. Explain the following characteristics of measurement systems: **Q.1** (10)a) Precision b) Calibration c) Static error d) Reproducibility e) Hysteresis OR **Q.1** State and explain in detail different types & sources of errors in measurements. (10) Q.2State the meaning of wringing. What are the essential conditions for wringing (10) of slip gauges? **OR** Describe briefly with neat sketches **Q.2** (10)a) Sine centres b) Sine table Q.3 Draw a block diagram of data acquisition system and explain function of each (10) constituent unit involved in it. OR Explain constructional details of the following: (10)**Q.3** a) Bonded strain gauge b) Bonded foil strain gauge **Q.4** Enlist the different types of comparators and explain any one in detail. (10)OR **Q.4** Define the following with suitable sketches: (10)a) Straightness b) Parallelism c) Concentricity d) Squareness Draw a neat sketch and explain working of piezoelectric accelerometer. Q.5 (10)**OR** Write a short note on following: (10)**Q.5** a) Strain gauge load cell b) Hall effect sensor Explain in detail working of Taylor-Hobson surface meter. **Q.6** (10)**Q.6** Explain with neat sketch the floating carriage micrometer and the method to (10) measure the effective diameter.

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