

**327613(27)**

**B. E. (Sixth Semester) Examination April-May 2020**

**(Old Scheme)**

**(E&I Branch)**

**INDUSTRIAL INSTRUMENTATION-2**

**Time Allowed : Three hours**

**Maximum Marks : 80**

**Minimum Pass Marks : 28**

**Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d) of each question.**

**Unit-I**

1. (a) Define Frequency. 2
- (b) Describe the working of Sept superheterodyne for frequency analysis. 7

- (c) How we can use different electronics techniques of frequency measurement? 7
- (d) Explain multi-filter Real-time spectrum analyzer in detail. 7

**Unit-II**

2. (a) What is Power? 2
- (b) Explain Bolo meter method for high power measurement in detail. 7
- (c) Describe colorimeter method of power measurement with application. 7
- (d) Discuss the construction and working of Directional couplers. 7

**Unit-III**

3. (a) What are the units of voltage and current? 2
- (b) Discuss digital voltmeter in detail. 7
- (c) Explain the construction and working of synchronous detector. 7
- (d) Write short note on DC & AC probes. 7

**Unit-IV**

4. (a) What is dual slope A/D converter? 2
- (b) Discuss the Ramp type A/D converter with advantages. 7
- (c) Explain Weighted-Resistor D/A converter with example. 7
- (d) A 5-bit converter is used for a DC voltage range of 0-10 V. Find the weight of MSB and LSB. Also find the exact range of the converter and the error. 7

**Unit-V**

5. (a) What is Transducer? 2
- (b) Discuss the Universal Counter in detail. 7
- (c) Explain IEEE 488 Bus. 7
- (d) Write short notes on : 7
- (i) Digital Tachometer
- (ii) Digital pH meter