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BIEE-019

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

00822

December, 2017

BIEE-019 : ELECTRICAL INSTRUMENTATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. Each question carries equal marks. Use of scientific calculator is permitted. Missing data, if any, may be suitably assumed.*

1. Define the input and transfer characteristics of transducers. What are the factors affecting the choice of transducers ? *10*

2. What is a Potentiometer Transducer ? Explain the working of translational and rotational potentiometers. *10*

3. Explain the constructional features of capsules and bellows as primary transducers and show how they are useful for pressure measurement. *10*

4. What are the functions of a Data Acquisition System ? Draw the block diagram of an analog data acquisition system. *10*

5. Explain the construction and operation of a strip chart recorder. *10*

6. How are smart sensors different from transducers ? Also explain the role of smart transmitters in modern instrumentation. *10*

7. What are the different elements of a process control system ? Explain with suitable example. *10*

8. A process control system has a controller output of 4 to 20 mA signal to control motor speed from 150 to 750 rpm with linear relationship. Calculate the current corresponding to 300 rpm. *10*

9. Write short notes on any ***two*** of the following : *2×5=10*

   (a) Digital Controllers

   (b) Spectrum Analyzer

   (c) RVDT