No. of Printed Pages : 03 **Roll No. .....**

E-101

B. Tech. EXAMINATION, Dec. 2017

(Seventh Semester)

(B. Scheme) (Main & Re-appear)

(EE, EEE, IC)

EE-401-B

SENSORS AND TRANSDUCERS

(Comman with 5th Sem. AEI)

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions in all. All questions carry equal marks.

1. (a) What do you mean by loading of a measured or a transducer ? How can it be minimized ? **5**

(b) State and briefly describe the factors dictating the choice of transducers. **15**

2. (a) What do you mean by rossettes and load cells ? Where can be these be employed and to what purpose ? **6**

(b) Draw the characteristics of thermistors. State their one important applications and briefly describe it. **14**

3. Explain the construction and marking of a synchro. What are the differences in construction and operation of synchro control transformer and synchro motor ? Are the voltages produced (across the three terminals of synchro transmitter stator) 3 phase or single phase ? What is the X-axis in the plot showing these three voltages ? **20**

4. Describe a piezoelectric transducer and show what variable can be measured by it. **20**

5. Describe the construction, working and application of a transducer employing variation of dielectric constant. **20**

6. What is the principle of stroboscope ? Explain. What variable(s) can be measured using stroboscopic effect ? **20**

7. What situation generally required the use of telemetry ? Explain any *one* method of telemetry. **20**

8. Write technical notes on the following :

(a) Phototransistors **8**

(b) Smart Sensors. **12**