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Printed Pages : 3 **IC – 601**

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 3045 Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VI) EXAMINATION, 2006-07

TRANSDUCERS AND DISPLAY SYSTEMS

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

Note : *Attempt **all** questions.*

1 Attempt any **four** parts : **5×4=20**

(a) What are thirmistors and what physical quantity is precisely measured by them?

(b) Show how the resistance-temperature characteristics of a thirmistor looks like and comment on its suitability for temperature measurement.

(c) Explain how the temperature of hot bodies can be measured without physical contact and from a distance.

(d) Show that a parallel plate capacitor serves as the most suitable transducers for measurement of linear and angular displacement.

(e) Explain how eddy current phenomenon can be utilized to make up a proximity meter.

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2 Attempt any **four** parts : **5×4=20**

(a) What is a thermopile and where is its application?

(b) Explain the piezo electric phenomenon and suggest the materials that exhibit this phenomenon.

(c) Show how piezo electric transducers can be used to measure pressure.

(d) Describe the properties of materials used for piezo electric transducers. Derive expression for voltage sensitivity.

(e) Write a short note on the measurement of pressure.

3 Attempt any **four** questions : **5×4=20**

(a) Explain the theory and working of an LED. Also describe the advantages of LEDs.

(b) Explain the theory and working of LCDs. Describe the difference between light scattering and filed effect types of LCDs.

(c) Describe the different parts of CRT.

(d) Derive an expression for vertical defection of an electron beam in a CRT.

(e) Describe the different types of sweeps used in a CRO.

4 Attempt any **two** parts : **10×2=20**

(a) Describe the principle and working of Nixie tubes.

(b) Explain the functioning of a 5x7 LED Matrix display.

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(c) Explain the following terms as applied to digital displays :

(i) Resolution

(ii) Difference between $3\frac{1}{2}$ and $4\frac{1}{2}$ digit display

(iii) Sensitivity of digital meters.

(iv) Accuracy specifications of digital meters.

5 Attempt any **two** parts : **10×2=20**

(a) Explain the functioning of a basic type of strip chart recorder. Explain the different types of marking mechanisms used in it.

(b) Describe the working of a galvanometric type strip chart recorder. What are the different types of tracing systems used in it ? Explain them with the help of suitable diagrams.

(c) Describe the different methods used for digital tape recording. Explain its advantages and disadvantages.