B. N. Bandodkar College of Science, Thane.
Department of Physics
T.Y.B.Sc: ELECTRONIC INSTRUMENTATION: Paper- I

Duration: 3 hrs **Total Marks: 100**

N.B: 1) All questions are compulsory
2) Figures to the right indicate full marks.
3) Symbols have their usual meanings.
4) Use of non-programmable calculator is allowed.

Q.1] **Attempt any two** **12**

(i) What is LVDT ? explain its construction and working.
(ii) Write a note on LCD.
(iii) Define gauge factor (K)and show that
$K = 2 + (c – 1)(1 + u)$
Where c is Bridgeman `s constant and u is Poission `s ratio.

Q.2] **Attempt any two** **12**

(i) Draw a labeled block diagram of the dual trace CRO. Explain the different modes In which it can be operated.
(ii) Explain CRT control circuit in detail.
(iii) Discuss the horizontal deflection system in CRO.

Q.3] **Attempt any two** **12**

(i) Describe the operation of negative clipper circuit
(ii) Briefly describe any two application of instrumentation amplifier
(iii) Explain second order low pass butter worth filter

Q.4] **Attempt any two** **12**

(i) Explain the working of adjustable positive voltage regulator using LM 317
(ii) Explain the working of constant current source using OPAMP and pnp transistor
(iii) Write short note on Monolithic switching regulators

Q.5] **Attempt any Four** **12**

(i) Draw the diagram giving details of the internal structure of CRT.
(ii) Write the factors that should be taken into consideration while selecting a transducer.
(iii) What are the characteristics of LM 317
(iv) What is a switching regulator
(v) What is a notch filter
(vi) Draw the diagram of photo multiplier tube.

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