9/5/19

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[This question paper contains 4 printed pages]

Your Roll No. : .....

Sl. No. of Q. Paper : **2397** **IC**

Unique Paper Code : 32223904

Name of the Course : **B.Sc.(Hons.) Physics/ B.Sc. (Prog.) : SEC**

Name of the Paper : Basic Instrumentation Skills

Semester : IV

Time : 3 Hours ***Maximum Marks : 50***

Instructions for Candidates :

(a) Write your Roll No. on the top immediately on receipt of this question paper.

(b) Attempt any **five** questions in **all**.

(c) Question **NO.1** is compulsory.

1. Attempt any **five** of the following : 2×5=10

(a) What are lissajous figures and how they are displayed on the screen of CRO ?

P.T.O.

(b) What do you mean by luminance and persistence in CRO ?

(c) Calculate V_{p-p} and V_{max} of a signal if V_{rms} value is 4.5V.

(d) What is (i) random error (ii) limiting error ?

(e) What do you mean by sensitivity of a digital voltmeter ?

(f) What is Distortion factor meter ?

(g) Define rise time and fall lime of a pulse.

2. (a) What is loading effect ? Discuss the loading effect of multimeter with the help of example. 6

(b) Define the terms : 4

(i) accuracy

(ii) resolution

(iii) precision

(iv) expected value

3. Draw the block diagram of CRO and explain the function of each block. 10

4. (a) What are the advantages of dual trace CRO over dual beam CRO for multipletrace ? 4

(b) What is the function of X-Y mode ? 3

(c) What is the speciality of storage oscilloscope ? 3

5. (a) Explain the working of pulse generator and mention its applications. 6

(b) What are the different applications of signal generator ? Give a brief idea of testing. 4

6. (a) Draw the block diagram of Q-meter and explain its working principle. 5

(b) Explain the working of digital LCR bridge with the help of a block diagram. 5

7. (a) State the advantage of Digital Voltmeter (DVM) over analog meter. 4

(b) Explain the working of a digital voltmeter using a block diagram. 6