Printed Pages : 2 **TIC-802**

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

PAPER ID : 0396 Roll No.

B. Tech.

(SEM. VIII) EXAMINATION, 2007-08

DIGITAL MEASUREMENT TECHNIQUES

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

Note : Answer **all** questions.

1 Attempt any **four** parts of the following : 5×4

(a) Discuss the advantages and disadvantages of a digital display compared to an analog one.

(b) The Resolution of a digital instrument can be improved without limit. Explain.

What is the maximum time interval that can be measured if the counter is a 16 bit one and the clock freq. is 1 MHz?

(c) Explain the technique for the measurement of very low time period.

(d) Explain phase measurement technique through time measurement.

(e) In brief describe the CKT for measuring Q of a ringing CKT.

(f) Calculate resolution due to drift in oscillator frequencies of a time measurement system than the clock period.

2 Attempt any **two** parts of the following : **10×2**

(a) Explain how high frequency can be measured by digital technique.

(b) With the help of diagram explain peak frequency measurement technique.

(c) With the help of diagram in brief explain the method for measurement of the Ratio of two frequencies and product of two frequencies.

3 Attempt any **two** parts of the following: **10×2**

(a) Define digitally programmable resistors and its use.

(b) Define programmable gain amplifiers and some of its uses.

(c) Draw the CKT of Biquad 1 using switched capaciters and find out its transfer function.

4 Attempt any **two** parts of the following : **10×2**

(a) Describe various CKTs that can be used as a switch in DACs.

(b) Explain how DACs can be derived from Programmable Gain Amplifiers.

(c) Write a note on weighted resistor DACs.

5 Attempt any **two** parts of the following : **10×2**

(a) With the help of diagram explain the working of successive approximation type ADC.

(b) What is the difference between indirect type and direct type ADC. With the help of diagram explain the working of indirect type ADC.

(c) Write short notes on:

(i) Sampling Theorem

(ii) TDM
