



Printed Pages : 2

TIC-802

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

PAPER ID : 0396

Roll No.

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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 capacitors 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

