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SF-7123

B. E. III (Sem. VI) (IC) Examination

May / June – 2011

Measurement Technique

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

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 3 (Sem. 6) (IC)**

Name of the Subject :

☛ **Measurement Technique**

☛ Subject Code No. : **7 1 2 3** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Attempt **all** questions.

(3) Figures to the **right** indicate marks.

(4) Answer of **two** sections must be written in **separate** answer books.

SECTION - I

1	(a)	Give the answers in brief :	**10**
		(i) What do you mean by active and passive transducer ?	**2**
		(ii) Define the terms resolution and sensitivity.	**2**
		(iii) What is the working principle of RTD ?	**2**
		(iv) Classify various flowmeters.	**2**
		(v) Give the applications of pyrometers.	**2**
	(b)	Explain different types of errors.	8
2	(a)	With the help of diagram, explain the working of orifice flowmeter.	8
	(b)	Draw a neat diagram and explain the working of magnetic flowmeter.	8

OR

2	(a)	What are the disadvantages of orifice meter ? How they are overcome in venturimeter ? Explain.	8
	(b)	Explain the working of ultrasonic flowmeter. How is the flow rate calculated mathematically ?	8

3 Explain any **two** of the following : **8×2=16**

(i) Optical pyrometer

(ii) Thermocouple

(iii) RTD-3 wire compensation.

SECTION - II

4 (a) Answer the following questions in brief : **10**

(i) List different methods for level measurement. **2**

(ii) State and explain calibration. **2**

(iii) Give any two advantages of manometers. **2**

(iv) Define gauge factor. **2**

(v) What is DP cell ? Where it is used ? **2**

(b) Write a short note on interacting and non-interacting systems. **8**

5 (a) Explain pressure measurement using strain gauge. **8**

(b) Explain any one method to measure differential pressure. **8**

OR

5 (a) Explain the construction of different types of bourdon tubes. **8**

(b) Draw the diagram and explain the working of dead weight piston type pressure transducer. **8**

6 Explain any **two** of the following : **8×2=16**

(i) Float type level detector

(ii) Load cell

(iii) Capacitance level detector.
