TEE-503 145 Printed Pages : 3

Roll No. to be filled in your Answer Book

Roll No. | | | | | | | | | | |

Semester: V

B.Tech Examination (2014-2015)

APPLIED & ELECTRONICS INSTRUMENTATION

Time: 3 Hours **MM. 100**

Note:-

(1) Attempt all questions.
(2) All questions carry equal marks.

Q1. Attempt any four Questions of the following:- 4x5=20

a) How the Wheatstone bridge arranged for the quarter bridge and half bridge for the measurement of the strain?
b) Write a short note on active and passive transducer with suitable example.
c) A voltmeter has a range of 0-5 V. The true value of the measured voltage is 3.5 v, while the read value is 2.90 V. What is the absolute error and relative error?
d) Explain plotters with example.
e) Derive an expression for the Gauge factor G_f?
f) Write down the Characteristics of thermistor.

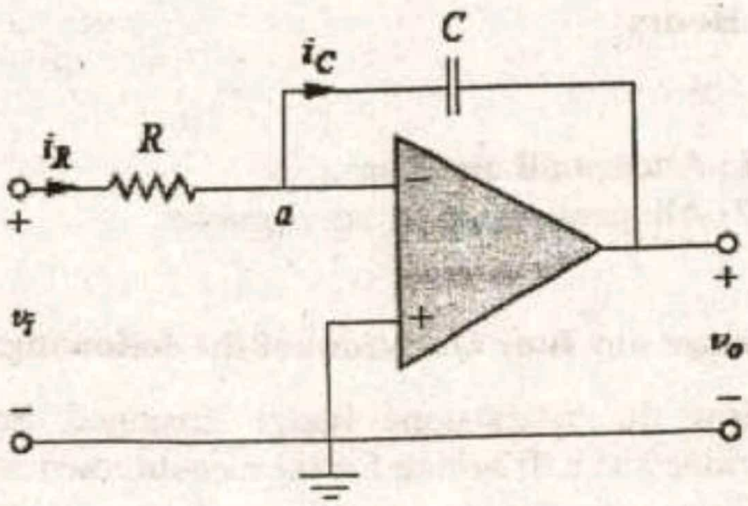
Q2. Attempt any four Questions of the following:- 4x5=20

a) Explain the working principal of a series ohmmeter
b) Explain the Construction and working of a linear variable differential transformer (L.V.D.T). Explain how the magnitude and direction of the displacement of core of an L.V.D.T is detected?

c) Distinguish between direct and indirect methods of measurement. Give examples to support your answer.

d) Derive an expression for the sensitivity of a Wheatstone bridge.

e) A platinum thermometer has a resistance of 200Ω at 35°C. Find its resistance at 65°C if the platinum has a resistance temperature Co-efficient of 0.00492/°C.



a.

f) Write the need of calibration and explain process of calibration.

Q3. Attempt any two Questions of the following:- 2x10=20

a) Draw a circuit diagram of a Q-meter and explain its working. Give its applications.

b) Write down the construtional difference between Dual slope type Digital voltmeter and Ramp type digital voltmeter.

c) Explain D/A and A/D converters w.r.t signal conditioning of the inputs.

Q4. Attempt any two Questions of the following:- 2x10=20

a) Explain the working of strain gauge type of torque transducers. Explain its advantages and Disadvantages.

b) By taking suitable example, explain concept of Time Division Multiplexing and Frequency Division multiplexing.

c) What are the different Telemetry system and explain the position telemetry system in details

Q5. Attempt any two Questions of the following:- 2x10=20

a) Write down the difference between AC and Dc tacho-generators.

b) Explain the working of Digital Data Recording. Give its applications.

c) Explain the types of Accelerometers in detail with their individual block diagrams with salient features.