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0.2 a. Discuss Limiting errors and relative limiting errors. Answer: Article 3.1-3.2 of Text Book 1

- StudentBounty.com b. A voltage has a true value of 1.50V. An analog indicating instrument with a scale range of 2.50V shows a voltage of 1.46 V.
 - (i) What are the values of absolute error and correction?

(ii) What is the error as a function of the true value and as a % of full scale deflection?

Answer:

b- Absolute error 8A = Am- Az = 1.46-1.50 = -0.04V Absolute correction SC = - SA = +0.04V Ruatine error $(Er) = \frac{SA}{At} = \frac{-0.04}{1.50} \times 100$ = -2.67% Relative error as a % of fisd. $= \frac{-0.04}{2.5} \times 100 = -1.60\%$

Q.3 a. What are the various methods used to measure medium resistance? Explain anyone method in brief.

Answer: Article 14.2/14.2.4 of Text Book 1

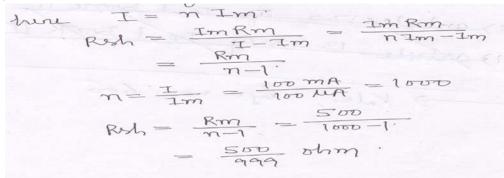
b. Explain working of Anderson's bridge with the help of phasor diagram. Also derive the relation for self inductance of a coil.

Answer: Article 16.5.4 of Text Book 1

0.4 a. What are the general requirements of a shunt? Answer: Article 3.1, Page Number 65 of Text Book 2

> b. A 100 μ A meter movement with an internal resistance of 500 Ω is to be used in a 0-100 mA Ammeter. Find the value of the required shunt.

Answer:



c. Explain working of AC voltmeter using rectifiers. Answer: Article 4.12, Page Number 99 of Text Book 2

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StudentBounty.com Q.5 a. Discuss the working principle and applications of the following: (i) Universal counter

Answer: Article 6.5, Page Number 158 of Text Book 2

(ii) Voltage to frequency conversion using integrating type DVM.

Answer: Article 5.4, Page Number 132 of Text Book 2

b. Write the working principle and applications of Q meter. Answer: Article 10.7, Page Number 286 of Text Book 2

Q.6 Explain the working of the following using block diagram. (i) VHF sampling oscilloscope

Answer: Article 7.17, Page Number 201 of Text Book 2

(ii) Standard Signal Generator

Answer: Page Number 222 of Text Book 2

0.7 a. Draw the block diagram of Spectrum Analyser and explain its working. Answer: Page Number 254 of Text Book 2

b. Explain in brief Self Balancing Bolometer Bridge with the help of a diagram.

Answer: Page Number 692 of Text Book 2

Q.8 Discuss working principle of the following and write their applications. (i) Magnetic Recorders

Answer: Article 12.7, Page Number 385 of Text Book 2

(ii) Galvanometer type Recorder

Answer: Article 12.3, Page Number 374 of Text Book 2

- a. Write applications of the following Q.9
 - (i) Differential output transducer
 - (ii) Capacitive transducer
 - (iii) Strain Gauges
 - (iv) Resistive transducers

Answer: Page Number 402 of Text Book 2

b. Explain single channel Data Acquisition System (DAS) in brief. Answer: Page Number 600 of Text Book 2

TEXT BOOKS

1. A Course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpat Rai & Co., New Delhi, 18th Edition 2007.

2. Electronic Instrumentation, H.S Kalsi, Tata McGraw Hill, Second Edition 2004.