

DiplETE – ET (OLD SCHEME)

Code: DE11
Time: 3 Hours

Subject: ELECTRONIC INSTRUMENTATION & MEASUREMENTS

Max. Marks: 100

DECEMBER 2010

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
 - The answer sheet for the Q.1 will be collected by the invigilator after half an hour of the commencement of the examination.
 - Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
 - Any required data not explicitly given, may be suitably assumed and stated.
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Q.1 Choose the correct or the best alternative in the following: (2×10)

a. Accuracy is defined as the

- (A) Measures of the consistency or reproducibility of the measurement
- (B) Closeness with which an instrument reading approaches the true value of the quantity being measured
- (C) Smallest measurable input change
- (D) Ratio of the change in output signal of an instrument to a change in the input.

b. Maxwell's bridge is very convenient and useful bridge for determination of inductance of coil having.

- (A) Low Q factor.
- (B) Medium Q factor.
- (C) High Q factor.
- (D) Very low Q factor.

c. The input impedance of a CRO is nearly

- (A) Zero.
- (B) 10 ohms.
- (C) 100 ohms
- (D) 1M ohms.

d. Phosphor coating for CRTs is provided on

- (A) Inside surface only.
- (B) Outside surface only.
- (C) Both the surfaces.
- (D) Within the glass.

e. Q-meter operates on the principle of

- (A) Series resonance.
- (B) Current resonance.
- (C) Self inductance.
- (D) Eddy current.

- Q.5** a. Explain the horizontal deflection system of a CRO. (8)
b. Explain the block diagram of an Audio frequency sine-square signal generator. (8)
- Q.6** a. Explain how, the flux can be measured by induced emf method. (8)
b. Delineate, using suitable sketches, a procedure to measure RF power using Bolometer Bridge. (8)
- Q.7** a. Explain how displacement can be measured using an inductive transducer. (8)
b. Explain the terms Sensitivity, Selectivity, Signal to noise ratio and Fidelity of a receiver. (8)
- Q.8** a. Explain the working of a Wave Analyser. (8)
b. Explain operation of a simple channel Data Acquisition System. (8)
- Q.9** Write notes on:
(i) Classification of transducers. (8)
(ii) Resistance gauge transducers. (8)