Extra

V.P & R.P.T.P SCIENCE COLLEGE
First Internal Test
US05CELE-04

Date: 6/10/17
11:30 to 5:00 pm
Total Marks 30

Q-1 Multiple choice questions: **3 marks**

(1) The Maxwell bridge is used to measure
- (i) low value resistors
- (ii) Capacitor
- (iii) Inductor
- (iv) High value resistors

(2) Power factor is defined as
- (i) cosine of phase angle.
- (ii) cotangent of phase angle.
- (iii) sine of phase angle.
- (iv) Tangent of phase angle

(3) Transducer forms a part of _____ in instrumentation system.
- (i) Input device
- (ii) Output device
- (iii) Processing device
- (iv) None of the above

Q2: Answer in short: (any 2) **4 marks**

1. State two conditions to be satisfied simultaneously to balance an ac bridge.
2. What do you mean by Dissipation factor. What does it tell?
3. Define Transducer and classify them.

6 marks

Q-3 Derive an expression for unknown resistance using Kelvin Double Bridge.

OR

Q-3a Give two differences between ac and dc bridges.

2marks

Q-3b The ac bridge is in balance with following constants, arm AB, R=450 Ω, arm BC R=300 Ω in series with capacitor C =0.256 micro Farad, arm CD unknown, arm DA

R= 200 Ω in series with inductor L= 15.9 mH. The oscillator frequency is 1 KHz. Find the constants of arm CD. **4 marks**

Q-4 Describe in detail Schering bridge and show that the dial of Schering bridge can be calibrated directly in terms of dissipation factor D. **6 marks**

OR

Q-4 Describe in detail Hay bridge and show that it is suitable for the measurement of High Q coil. **6marks**

Q-5 Write shortnote on Transducers. **6marks**

OR

Q-5 Discuss in detail working of LVDT. **6 marks**

**********Best of Luck**********