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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Third Semester

EE16304 – MEASUREMENTS AND INSTRUMENTATION*(Electrical and Electronics Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	CO	RBT
1. What is meant by calibration of an instrument?	1	U
2. What is meant by an Instrument?	1	U
3. State two sources of error in moving iron instrument.	2	R
4. What is the difference between voltage transformer & current transformer?	2	U
5. What are the applications of a potentiometer?	2	U
6. State the two conditions for balancing an A.C. bridge.	2	R
7. Compare plotters and printers	3	R
8. What is LED?	3	U
9. What are the basic requirements of transducer?	4	U
10. What is primary transducer?	4	U

PART B - (5 X16 = 80 Marks)

11. (a) (i) Explain the functional block diagram of an instrument. (8) 1 U
(ii) Explain the classification of standards of measurements. (8) 1 U
- (OR)**
- (b) (i) Discuss the various static characteristics of measurement system. (8) 1 U
(ii) Discuss the various Dynamics characteristics of measurement system. (8) 1 U
12. (a) Describe the working principle and operation of PMMC instrument with neat sketch. Derive the torque equation. (16) 2 AP

(OR)

- (b) Explain the construction and working principle of a single-phase energy meter with neat sketch. **(16)** **2** **AP**
13. (a) (i) With the help of Maxwell's bridge explain how an unknown inductance can be determined **(8)** **2** **AP**
- (ii) Derive the expression for bridge balance equation of a wheat stone bridge. **(8)** **2** **AP**
- (OR)**
- (b) (i) Explain the ramp type of DVM in detail. **(8)** **2** **AP**
- (ii) Describe the function of frequency meter with neat sketch. **(8)** **2** **AP**
14. (a) What is an XY recorder? Explain, with suitable circuit diagram, the working of an XY recorder. Describe its applications. **(16)** **3** **AP**
- (OR)**
- (b) (i) With the help of the functional block diagram, Explain the working principle of digital storage oscilloscope. **(8)** **3** **AP**
- (ii) Describe the recording mechanism in magnetic tape recorder. **(8)** **3** **AP**
15. (a) (i) Briefly describe the working of successive approximation type A/D converter **(8)** **4** **AP**
- (ii) Explain the working Principle of LVDT with neat illustrations. **(8)** **4** **AP**
- (OR)**
- (b) (i) With functional block diagram, explain the concepts of Data acquisition system. **(8)** **4** **AP**
- (ii) Explain how to measure the pressure using a capacitive type transducer. **(8)** **4** **AP**