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**4th Sem. / Electrical**

**Subject : Electrical Measuring Instruments  
and Instrumentation**

Time : 3 Hrs.

M.M. : 100

**SECTION-A**

**Note:** Objective type questions. All questions are compulsory (10x1=10)

**(Course Outcome/CO)**

- Q.1 For \_\_\_\_\_ torque ; spring controlling method is generally used. (CO-1)
- Q.2 A portable instrument is likely to be provided with \_\_\_\_\_ damping. (CO-1)
- Q.3 A voltmeter contains a \_\_\_\_\_ resistance in series. (CO-3)
- Q.4 Induction type energy meters can be used to measure \_\_\_\_\_. (CO-6)
- Q.5 A meggar, when not in operation, indicates a resistance of \_\_\_\_\_. (CO-3)
- Q.6 The secondary of a C.T. is never left open circuited. (True/False) (CO-4)

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- Q.7 \_\_\_\_\_ is the heart of CRO. (CO-6)
- Q.8 Working of thermocouple is based on \_\_\_\_\_ effect. (CO-7)
- Q.9 LVDT can be used to measure \_\_\_\_\_. (CO-5)
- Q.10 A multi-meter is used to measure current, voltage and \_\_\_\_\_. (CO-2)

**SECTION-B**

**Note:** Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 List different types of moving coil instruments. (CO-3)
- Q.12 Define creeping in energy meter. (CO-2)
- Q.13 Define Meggar. (CO-6)
- Q.14 List the techniques by which damping torque is produced in electrical instruments. (CO-1)
- Q.15 Define thermocouple. (CO-5)
- Q.16 List the transducers used for the measurement of pressure. (CO-7)
- Q.17 List two applications of potential transformer. (CO-4)

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- Q.18 Why a voltmeter should be of very high resistance? (CO-3)
- Q.19 Define Earth tester. (CO-2)
- Q.20 Why is the speed of rotating disk in energy meter kept as small as possible? (CO-6)
- Q.21 Define controlling torque. (CO-1)
- Q.22 Define phase sequence in a 3-phase system. (CO-2)

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions. 8x5=40

- Q.23 Explain the essentials of indicating instruments. (CO-1)
- Q.24 Explain the principle of operation of a moving coil instruments and why these instruments are used on DC. (CO-3)
- Q.25 Explain the function of a phase sequence indicator. (CO-6)
- Q.26 Explain any transducer used for level measurement (CO-7)
- Q.27 Differentiate between C.T. and P.T. (CO-4)

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- Q.28 List five advantages of three phase system over single phase system. (CO-5)
- Q.29 Discuss the methods of providing the controlling torque. (CO-1)
- Q.30 Explain the function of LCR meter and list its three applications. (CO-2)
- Q.31 Describe the material used for RTDs along with their properties. (CO-5)
- Q.32 List any five merits and demerits of single phase energy meter. (CO-6)

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions. 3x10=30

- Q.33 Explain the construction and working of a LVDT with neat sketch. (CO-7)
- Q.34 Describe the working principle and construction of PMMC instrument with neat sketch. (CO-6)
- Q.35 Draw and explain block diagram of CRO. (CO-2)
- Q.36 Describe the working and construction of resistance thermometer. Also enlist its applications. (CO-5)

(**Note:** Course outcome/CO is for office use only)

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