

Instructions: All questions in **Section –I** carry equal marks.
 Attempt any **Three** questions in **Section-I**.
 Questions I in **Section-II** is **COMPULSORY**.

Section-I

- Q-I (A) Give principle of self-generating inductive transducer. 7
 Explain construction and working of electromagnetic flowmeter.
- (B) Explain construction and working principle of strain Gauge transducer. What is Gauge factor? Give advantage of the wire strain Gauge. 7
- Q-II (A) What are the measurement standards of instruments? 7
 Explain with proper diagram construction and principle of operation of Basic meter.
- (B) Which two points must be kept in mind while measuring voltage across a component in the circuit? 7
 With the proper circuit diagram explain how basic meter can be converted to D.C. Voltmeter.
- Q-III (A) Give the functions of Instruments. Compare electrical and electronic instruments and give the essentials of electronics instruments. 7
- (B) What do you mean by electronic voltmeter? Explain the working of FETVM. 7
- Q-IV (A) Give classification of the signal generators. Describe the conventional standard signal generator using neat schematic diagram 7
- (B) With the help of neat block diagram explain Random noise generator and sweep generator. 7
- Q-V (A) Explain inductive and capacitive pressure transducer. 7
- (B) Write note on piezoelectric transducer and Resistance temperature detectors. 7
- Q-VI (A) What is thermistor? Explain (1) construction 7
 (2) Response time. Give the advantage and application

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of thermistor.

- (B) What is transducer? Describe the detail classification of transducer based on various aspects. 7
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- Q-VII (A) What are thermocouples? Explain the construction and working principle of thermocouple. 7
- (B) Explain the construction and working of LVDT (Linear Variable Differential Transformer). Give the advantage and application LVDT. 7
- Q-VIII (A) With the help of neat block diagram explain the working of AF sine and square wave generator. 7
- (B) With the help of neat block diagram explain the working of Laboratory square and pulse wave generator 7

Section II

Answer any eight out of sixteen

- Q-IX
- I. Define passive transducer.
 - II. Give principle disadvantage of piezoelectric transducer. 8
 - III. Give any one name of acoustical transducer.
 - IV. Find the sensitivity of 0-1 mA meter.
 - V. Define analog instrument.
 - VI. A high input-resistance voltmeter has high/low loading effect.
 - VII. Write full name of RTD.
 - VIII. Which type of waves are produced by comparator in a function generator?
 - IX. What are the difference between AC and DC voltmeter?
 - X. What do you mean by a loading effect of voltmeter?
 - XI. How is the function generator different from signal generator?
 - XII. Square waves generated by pulse generator has a duty cycle of?
 - XIII. Value of output impedance of AF sine and square wave generator is?
 - XIV. Define a gauge factor for strain gauge.
 - XV. A Wien bridge oscillator is suitable for which type of generator?
 - XVI. Microwave has a frequency range?

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