

Exercise– L1

- Q1.1** What is the primary function of an instrument in measurement?
A) To replace human observation
B) To extend human faculties for measurement
C) To automate industrial processes
D) To reduce production costs
- Q1.2** Which field is NOT mentioned as one where instrumentation is essential?
A) Engineering
B) Medical
C) Astronomy
D) Research
- Q1.3** What is the purpose of instrumentation in industrial systems?
A) Reducing employment
B) Increasing system complexity
C) Controlling processes efficiently
D) Eliminating the need for human supervision
- Q1.4** Which of the following is NOT a component of a basic measuring system?
A) Transducer
B) Signal conditioner
C) Display
D) Microprocessor
- Q1.5** What is the function of a transducer in a measurement system?
A) To convert an electrical signal into a digital display
B) To amplify the input signal
C) To convert energy from one form to another
D) To filter unwanted signals
- Q1.6** What is the role of the signal conditioner in a measuring system?
A) Storing measurement data
B) Converting the transducer signal into a usable form
C) Providing power to the instrument
D) Displaying the final measurement
- Q1.7** Which of the following is NOT a function of display devices?
A) Recording measurements
B) Showing measurement data
C) Amplifying signals
D) Indicating system performance
- Q1.8** The direct method of measurement involves:
A) Comparing a quantity against a standard
B) Converting a measurement into an electrical signal
C) Using an indirect method for calculation
D) Using software-based analysis
- Q1.9** A major disadvantage of the direct method of measurement is:

- A) It is too expensive
- B) It requires indirect conversions
- C) It is inaccurate and less sensitive
- D) It requires complex software

Q1.10 Why is the indirect method of measurement commonly used?

- A) It is more practical when direct measurement is impossible
- B) It reduces costs
- C) It requires less data processing
- D) It avoids using transducers

Q1.11 Which of the following is NOT a classification of measuring instruments?

- A) Passive and Active
- B) Static and Dynamic
- C) Deflection-type and Null-type
- D) Smart and Non-smart

Q1.12 Which type of instrument is most suitable for dynamic conditions?

- A) Mechanical Instruments
- B) Electrical Instruments
- C) Digital Instruments
- D) Passive Instruments

Q1.13 What is the main limitation of mechanical instruments?

- A) They are too expensive
- B) They are slow in responding to dynamic conditions
- C) They are difficult to manufacture
- D) They require an external power source

Q1.14 How do electronic and digital instruments improve reliability?

- A) By eliminating moving parts
- B) By using mechanical systems
- C) By increasing the weight of the instruments
- D) By reducing energy consumption

Q1.15 Which of the following is an example of a passive instrument?

- A) Fuel tank level indicator
- B) Digital thermometer
- C) Pressure gauge
- D) Smart instrument

Q1.16 16. What distinguishes an active instrument from a passive instrument?

- A) Active instruments use external power sources
- B) Passive instruments require digital displays
- C) Active instruments do not require calibration
- D) Passive instruments store data electronically

Q1.17 What is an example of a null-type instrument?

- A) Digital multimeter
- B) Analog ammeter
- C) Dead-weight pressure gauge

D) Cathode ray oscilloscope

Q1.18 Which feature is exclusive to smart instruments?

- A) The ability to store and process data
- B) The use of analog signals
- C) The reliance on mechanical moving parts
- D) The need for continuous calibration

Q1.19 What is a key function of measuring instruments in industrial processes?

- A) Eliminating the need for human workers
- B) Controlling and regulating systems
- C) Reducing the cost of production
- D) Automating data entry

Q1.20 What are the four main functions of measuring instruments?

- A) Monitoring, Recording, Controlling, Experimental Engineering Analysis
- B) Measuring, Processing, Storing, Computing
- C) Calibrating, Displaying, Filtering, Amplifying
- D) Powering, Indicating, Storing, Resetting

Answers

Question	Answer
Q1.1	B
Q1.2	C
Q1.3	C
Q1.4	D
Q1.5	C
Q1.6	B
Q1.7	C
Q1.8	A
Q1.9	C
Q1.10	A
Q1.11	B
Q1.12	C
Q1.13	B
Q1.14	A
Q1.15	C
Q1.16	A
Q1.17	C
Q1.18	A
Q1.19	B
Q1.20	A