

- Q.28 Grounding of an instrument is necessary . Why?
- Q.29 Define following terms
- Differential voltage gain
 - Common Mode Rejection Ratio
- Q.30 What is an ideal operational amplifier? Explain its all characteristics.
- Q.31 Explain the V-I characteristics of LED.
- Q.32 How linearity and drift can define the static characteristics of a device?
- Q.33 Write about the working theory of liquid crystal display.
- Q.34 How an OP-Amp can be used as an instrumentation amplifier?
- Q.35 What is a printing device and state some advantages of printing devices?

SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What are the dynamic characteristics which are calculated to determine the performance of an instrument ?
- Q.37 Explain the working principle of strip chart recorder with its constructional details.
- Q.38 Derive the expression for closed loop gain of an inverting amplifier.

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3rd Sem / IIC, EI

Subject:- Basics of Instrumentation/ Pr. Of Inst.

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 In _____ we can control the desired quantity of our process
- Measurement
 - Instrumentation
 - Sensing
 - None
- Q.2 The instrument which gives us directly the magnitude of physical quantity to be measured.
- Absolute
 - Indicating
 - Deflecting
 - None
- Q.3 The Accuracy of a instruments is measured in terms of its
- Error
 - Sensing strength
 - Can't say
 - All of above
- Q.4 The error mainly occur due to
- Imperfect Instrument
 - Human limitation
 - Climatic conditions
 - All of above

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- Q.5 Recorder is a
- Measuring Instrument
 - Voltage Source
 - Current divider
 - Musical tool
- Q.6 The error which are always of same size and sign under certain conditions are called.
- Systematic error
 - Human error
 - Climatic error
 - Gross error
- Q.7 Basic elements of a strip chart recorder are
- Chalk and board
 - Pen and pencil
 - Pencil and paper
 - Pen and chart paper
- Q.8 Negative feedback:
- Increases the input and output impedances
 - Increases the input impedance and bandwidth
 - Increases the output impedance and bandwidth
 - Does not affect impedance and bandwidth
- Q.9 LEDs operates at:
- Forward bias
 - Reverse bias
 - Neutral
 - None of the above
- Q.10 In the common mode
- Both inputs are grounded
 - The outputs are connected together
 - An identical signal appears on both the inputs
 - The output signals are in-phase

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SECTION-B

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

- Q.11 Define Hysteresis .
- Q.12 What is the use of strip chart in recording process?
- Q.13 What is an error ?
- Q.14 What is traceability?
- Q.15 How do we can scan the data during measurement?
- Q.16 Write the full form of GPIB.
- Q.17 Define percentage error.
- Q.18 Full form of LCD.
- Q.19 What is input offset current?
- Q.20 What is the operating voltage of an IC-741?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Write a short note on calibration process .
- Q.22 Describe the different types of standard signals which are used for testing purpose.
- Q.23 What is the role of instruments in any measurement process?
- Q.24 What are the differences between accuracy and precision of data?
- Q.25 How to reduce the error in measurement ?
- Q.26 Explain the basic instrumentation system with neat block diagram.
- Q.27 What are the merits and demerits of strip chart recorder ?

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