

- 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.

No. of Printed Pages : 4 181534/121534/031534/
Roll No. 073633

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

 - a) Measurement
 - b) Instrumentation
 - c) Sensing
 - d) None

Q.2 The instrument which gives us directly the magnitude of physical quantity to be measured.

 - a) Absolute
 - b) Indicating
 - c) Deflecting
 - d) None

Q.3 The Accuracy of instruments is measured in terms of its

 - a) Error
 - b) Sensing strength
 - c) Can't say
 - d) All of above

Q.4 The error mainly occurs due to

 - a) Imperfect Instrument
 - b) Human limitation
 - c) Climatic conditions
 - d) All of above

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

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Define Hysteresis .
 Q.12 What is the use of strip chat 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 from 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?