Q.24 Write a short note on earthing.

Q.25 Discuss slew rate and input offset current for OPAMP.

Q.26 Mention any four process variables and their units.

Q.27 Discuss process of calibration.

Q.28 Explain LCD with its advantages and disadvantages.

Q.29 Describe classification of errors.

Q.30 Explain pin configuration of IC- 741.

Q.31 Write a short note on RS-232C bus.

Q.32 Define differential voltage gain and CMRR for OPAMP.

Q.33 Write a short note on printing devices.

Q.34 Describe selection criteria of instruments.

Q.35 Discuss static characteristics of instruments.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions.   (2x10=20)

Q.36 Draw and explain basic building blocks of an instrumentation systems.

Q.37 Explain working principle and construction of x-y recorders.

Q.38 Describe OPAMP as an inverting and non-inverting mode.

**3rd Sem / Instrumentation & Control , EI
Subject:- Basic of Instrumentation / Pr of Inst.**

Time : 3Hrs.   M.M. : 100

SECTION-A

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

Q.1 The first stage of a measurement system is known as _____.

a) Intermediate Stage

b) Detector Transducer Stage

c) Terminating Stage

d) None of these

Q.2 In measurement systems, which of the following static characteristics is desirable:-

a) Sensitivity   b) Accuracy

c) Reproducibility   d) All of these

Q.3 Unit of energy is _____.

a) Watt   b) Tesla

c) Joule   d) Weber.

Q.4 LEDs emit light

a) Only in red colour

b) Only in Yellow colour

c) Only in green colour

d) All of these

Q.5 LCD requires a power of_____.

a) 20w   b) 20nw

c) 20mw   d) 20mw

Q.6 Strip chart recorder is an example of_____.

a) Analog Recorder

b) Digital Recorder

c) Magnetic Tape Recorder

d) None of these

Q.7 RS-232 bus has_____Pin connector.

a) 24   b) 20

c) 18   d) 25.

Q.8 Misuse of Instruments is an example of_____.

a) Gross error   b) Instrumental error

c) Random error   d) None of these

Q.9 The OPAMP output appears at pin number_____.

a) 2   b) 6

c) 4   d) 5

Q.10 The output Impedance of an ideal OPAMP is_____.

a) ¥   b) -¥

c) 0   d) None of these

SECTION-B

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

Q.11 Expand PSRR.

Q.12 GPIB operates in_____mode.

Q.13 Gross error mainly covers Human mistake (T/F)

Q.14 A recorder records electrical and non-electrical quantities as a function of time (T/F)

Q.15 Expand GPIB.

Q.16 X-Y recorders records one or more variable with respect to time (T/F)

Q.17 The switching time of LEDs is of the order of _____.

Q.18 Expand LED.

Q.19 A Step input represents an application of a sudden change.

Q.20 Measurement is the process by which one can convert physical parameters to meaningful numbers. (T/F)

SECTION-C

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

Q.21 Explain necessity of instruments.

Q.22 Define hysteresis and loading effects.

Q.23 Explain data loggers.