Question Bank (G scheme)

Name of subject: Process Instrumentation

Subject code   : 17540   **Unit Test: II**

Semester   : V   **Course   : IS5G**

CHAPTER 3 Converters (12 marks)

3 marks

1) State the principle of working of current to pressure converter.
2) Explain the need of signal converters.

4 marks

3) Draw and explain I/P converter.
4) Draw and explain current to voltage converter.
5) Draw and explain P/I converter.

CHAPTER 5 Data Acquisition System/Data logger(16 marks)

3 marks

6) State the difference between strip chart and X-Y recorders.
7) State any three applications of Data Acquisition system in process industries.
8) State the need of Data acquisition system.

4 marks

9) Draw the block diagram of Data logger. State the functions of each block.
10) Write the applications of data logger.
11) Explain the following terms w.r.t DAS

     i)   Ratio metric conversion
     ii)   Logarithmic conversion

12) Draw and describe the block diagram of single channel data acquisition system

13) Draw a neat diagram and explain the working of potentiometric type recorder

14) Draw a neat diagram and explain the working of galvanometer type recorder.

CHAPTER Instrumentation in hazardous area(20 marks)

3 marks

15) Differentiate between Hazardous 'Group' and Hazardous 'Class'.
16) List different protection methods.
17) Explain transformer isolation barrier for intrinsic safety.
18) What is an alarm annunciator?

4 marks

19) Define intrinsic safety. How is it achieved?
20) Draw &explain Redding zener barrier ckt.
21) Classify industrial area in process industries, as per IEC.
22) Classify following into appropriate hazardous class.

       i. Acetylene

       ii. Methane

       iii. Cotton gins

       iv. LPG

23) Define hazardous area. State its IEC classification.
24) Explain the terminology used for operating and specifying alarm annunciator system.
25) Classify hazardous areas for the following.

       i. Aluminium dust

       ii. Hydrogen

       iii. Hard coal Kentucky bituminous (class II, group F, div 2)
       iv. Wheat

………