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Roll No

CM-221-CBCS

B.E., III Semester

Examination, June 2020

Choice Based Credit System (CBCS)

Chemical Instrumentation

Time : Three Hours

Maximum Marks : 60

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. With schematic of distillation column, explain all the accessories associated with it.
2. What will be the accuracy of a measurement system for which the transducer has an accuracy of $\pm 2\%$, the signal conditioner on accuracy of $\pm 1\%$ and the recording unit an accuracy of $\pm 0.5\%$.
3. a) Explain measurement of Vacuum pressure using pirani gauge.
b) Write the types of Bourdon tubes.
4. Explain the general structure of measurement system. Sensing element, Signal conditioning element, Signal processing element, Data presentation element.
5. a) Write the disadvantages of venturi tubes.
b) States the advantages and limitations of a Rotameter.

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6. What are the static characteristics of an instrument?
Define,
- i) Accuracy
 - ii) Reproducibility
 - iii) Sensitivity
7. Explain construction, working principle and applications of the flapper-nozzle device.

OR

Draw the symbols of electric and pneumatic transmission lines, valve actuator and pumps.

8. With a neat diagram explain the process instrumentation for Any Two of the following :
- a) Distillation Column
 - b) Heat Exchanger
 - c) Fluid storage vessel

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