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Roll No

CM-8003 (1) (CBGS)

B.E. VIII Semester

Examination, June 2020

Choice Based Grading System (CBGS)

Process Piping Design

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is process piping?
b) What is the difference between pipes and tubes?
2. a) Derive an equation for the calculation of pressure drop for flow of non-Newtonian fluids through pipes.
b) Code of practice for identification of pipeline used in thermal power plant.
3. a) What do you mean by Reynolds and apparent Reynolds number? Discuss the Reynolds transport theorem in detail.
b) Discuss the following vertical Flow patterns: Bubble flow and Slug flow.
4. Explain the simplest approach to the prediction of two-phase flows by Homogeneous Model and Separated Flow Model.
5. What does the Reynolds Number of a flow represent physically?

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6. Write a short note on the following:
 - a) Secondary flow in curved pipes.
 - b) Fluid volumetric flow rate equation

7. a) Explain the Buckingham's equation for the Bingham-plastic fluids.
b) What do you mean by non-Newtonian fluids? Distinguish non-Newtonian properties with thixotropic and rheopectic behaviour of fluid in detail.

8. Write a short notes on : (any two)
 - a) Power-law fluids
 - b) Deborah number
 - c) Rabinowitsch-Mooney Relation
