1T00536 - T.E.(Chemical Engineering)(SEM-VI)(Choice Base Credit Grading System) (R- 19) (C Scheme) / 89245 - II: Engineering Stream: Piping Engineering (DLOC)

QP CODE: 10041761   DATE: 20/12/2023

(3 Hours)   **Total Marks: 80**

N.B.   1) Question No.1 is compulsory
        2) Answer any three out of five question
        3) Assume suitable data wherever necessary and state them clearly
        4) Figure to the right indicate full marks

Q.No.

Q1a)	Explain Duties & responsibilities of piping field engineer	05
b)	Write short notes on Stress intensification factor(SIF)	05
c)	Explain various types of expansion joints with diagram	05
d)	Explain the properties of cold insulation and hot insulation material.	05

Q2 a)   Explain with neat diagram the construction, working and application of Globe valve.   **10**

    b)   Explain with figure IRON –CARBIDE phase diagram   **10**

Q3 a)   What are the factors to be considered while preparing P& ID . Explain with respect to any process consisting reactor, distillation column, and Dryer   **10**

    b)   What kind of stresses occur in piping system? What induces these stresses? How are they calculated?   **10**

Q4 a)   Explain Non Destructive Test for finding out defects in welding.   **10**

    b) A 8"NB Carbon steel pipeline is used to convey steam at a design pressure of 22 kg/cm2(g). Determine the minimum thickness of pipe needed for the system based on the following :—   **10**

                Allowable Stress = 1500 kg/cm2
                Outer diameter = 219 mm
                Corrosion Allowance = 15 mm
                Weld factor = 0.4
                Allowable tolerance = 12.5%
                Joint efficiency = 0.90

Q5 a)   Write short notes on ASME B 31.1   **10**

    b)   Explain the role of piping engineer in design, fabrication, erection and commissioning of a chemical plant.   **10**

Q.6   Write short notes on   **20**
      i) Desirable properties of piping materials
      ii) Y type strainer
      iii) Flame arrester
      iv) Inline Mixer and static mixer

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