Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Semester –Vth Examination December - 2010

Subject code: 355502 Subject Name: Piping Engineering

Date: 27 /12 /2010 Time: 02.30 pm – 05.00 pm

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Assume suitable data if necessary**

Q.1 (a) Give Definition **07**

1. One volume solid 2. Theoretical spreading rate 3. Consumption factor
4. Dry to touch 5. Volatile organic content 6. Fully cured
7. Shelf life

(b) Explain important factor for selection of piping material. **07**

Q.2 (a) Explain the term "coating"? classify them and explain any one method of coating **07**

(b) List types of expansion joints and draw neat sketch of any one **07**

OR

(b) Define the heat insulation and classify the piping heat insulation and explain their need and application. **07**

Q.3 (a) Lists the various types of piping drawing and explain piping isometric drawing. **07**

(b) Explain characteristics of five types of coating and do's and don'ts in maintenance painting **07**

OR

Q.3 (a) Determine the size dia of pipe to carry. **07**

Discharge = Q = 3000lit/min. Maximum velocity = V = 5m/sec

(b) Explain expansion joint. **07**

a) Slip type b) Bellows expansion joint.

Q.4 (a) Explain ASME B.31.3 **07**

(b) State required design information for piping analysis. **07**

OR

Q. 4 (a) Define **07**

(1) WPS (2) WPQ (3) PQR (4) essential variable
(5) supplementary Essential variable (6) P Number (7) F - Number

(b) Prepare WPS and PQR with help of following data.(assume suitable addition data, if necessary) **07**

a) Matériel : SA 516 GR 60
b) Pipe dia : 4" N.B (100mm)
c) Electrode : E-7018 of O 3.15 × 350 mm
d) Thickness of pipe : 6 mm
e) Welding process : SMAW
f) Position : 5G/6G
g) grooved design : $\theta = 45^{o}$ with double 'v' piping

Q.5 (a) Explain with neat sketch of following & give its types. **07**

1. Rigid support (any two) 2. Flexible support (any two)

(b) State role of pipe welding inspector before, during and after welding. **07**

OR

Q.5 (a) Explain pipe fabrication practice. **07**

(b) State pipe cutting procedure for carbon steel pipe and stainless steel pipe. **07**

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