

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering Sem. - V - Examination – June- 2011

Subject code: 355502

Subject Name: Piping Engineering

Date: 20/06/2011

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. English version is Authentic
5. Assume suitable data if necessary

- Q.1** (a) Give Definition **07**
1. Mixing ratio
 2. Thinner
 3. Pot life
 4. Dry film thickness
 5. Wet film thickness
 6. Recoat interval
 7. Surface preparation

- (b) Explain in brief four criteria for developing equipment and piping layout. **07**

- Q.2** (a) Explain pipe under stress and State objective of stress analysis. **07**
- (b) State procedure for checking of piping drawing. **07**

OR

- (b) How to start piping GA? Explain in brief one typical piping GA drawing. **07**

- Q.3** (a) Explain Purging and FPW in pipe welding. **07**
- (b) Determine the size dia of pipe to carry. **07**

$$\text{Discharge} = Q = 2000 \text{ lit/min.}$$

$$\text{Maximum velocity} = V = 8 \text{ m/sec}$$

OR

- Q.3** (a) State need and importance of pipe coating and insulation **07**
- (b) Draw neat following types of expansion joint and gives its application. **07**
- | | |
|--------------------------|---------------|
| (a) axial- single/double | (b) Universal |
| (c) swing | (d) Hinged |

Q.4 (a) Define pipe bending, thinning, ovality, buckling. Explain pipe bending method. **07**

(b) Explain pipe fabrication practice. **07**

OR

Q. 4 (a) Prepare WPS and PQR with help of following data.(assume suitable addition data, if necessary) **07**

- a) Material : SA 516 GR 60
- b) Pipe dia : 10" N.B (250mm)
- c) Electrode : E-7018 of O 3.15 × 350 mm
- d) Thickness of pipe : 12 mm
- e) Welding process : SMAW
- f) Position : 5G/6G
- g) grooved design : $\theta = 30^\circ$ with double 'v' piping

(b) Define **07**

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

Q.5

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

- a) Rigid support (any two)
- b) Flexible support (any two)

(b) Explain function of flange and flange rating. Explain flange preparation, inspection and installation. **07**

OR

Q.5 (a) State role of pipe welding inspector before, during and after welding. **07**

(b) State importance of ASME B.31.3. in piping engineering field **07**
