

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGG.- Vth SEMESTER-EXAMINATION – JUNE- 2012

Subject code: 355502**Date: 05/06/2012****Subject Name: Piping Engineering****Time: 10:30 am – 01:00 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 considered to be Authentic

Q.1 (a) Define the term 'pipe'? Explain the classification of pipes / piping based on various criteria. **07**

(b) 1. Determine the size of pipe dia. to carry. **04**

Discharge = $Q = 3200$ lit / min. of water

Maximum velocity = $V = 5$ M/Sec

2. Water flow through a pipe having a following data: **03**

Dia = $d = 20$ cm

Length = $L = 100$ m

Velocity = $V = 3.0$ m/sec

Co-efficient of friction = $f = 0.01$

Gravitationnels constant $g =$ (Assume) 9.81 m / sec

Find out the head loss (Pressure drop) due to friction ?

Q.2

(a) Prepare PQR with help of following data . **07**
(Assume suitable addition data, if necessary)

I) As per ASME SEC IX prepare WPS in a standard format for given data

1. Matériel : SA 516 GR 60
2. Pipe dia : 10" N.B (100mm)
3. Electrode : 7018 of O 3.15×350 mm
4. Thickness of pipe : 10 mm
5. Welding process : SMAW
6. Position : 5G / 6G

(b) Define the term 'pressure drop' (head losses) in piping ? **07**
Explain the phenomena of pressure drop and their causes In piping system.

OR

(b) List out the following types of piping elements state its functions ? **07**

- (1) Various types of Pipe fittings
- (2) Various types Fasteners
- (3) Various types of valves
- (4) Various types Piping specialties

Q.3

(a) Classify the various types of supports ? Explain in brief the various factors affecting selection of pipe supports ? **07**

(b) Classify the pipe based on end connection and draw its neat sketch and state their typical application. **07**

OR

- Q.3** (a) Explain in brief with neat sketch : - **07**
 1. Siphoned in water pipe with neat sketch.
 2. Pipe bending method.
- (b) State role of ASME B.31.3 Code in piping fabrication industry. **07**
- Q.4**
- (a) State the functions of Gaskets. **07**
 Classify the gasket based on various criteria.
 List the properties of gasket required and state their need and function?
- (b) Explain in brief :- preliminary criteria of piping design. **07**
 OR
- Q.4** (a) List out the various types of piping drawings ? **07**
 Explain Any one typical piping isometric drawing.
- (b) Explain in brief with neat sketch. **07**
 1 Down hill welding of pipe
 2 Up- hill welding of pipe
- Q.5**
- (a) Define the term pipe 'coating' ? **07**
 Classify the 'coating' based on various criteria ?
 State factor affecting selection of paint and coating.
- (b) Define the term pipe 'insulation' ? **07**
 List out the types of the 'insulation' ?
 State its properties and importance. ?
 OR
- Q.5** (a) Explain in brief with neat sketch : - Purging in pipe welding. **07**
 Defines the pressure and vacuum and state its units ?
- (b) State function in piping engineering department. **07**
 State the procedure for checking of piping drawing.
