Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER–V • EXAMINATION – SUMMER • 2014

Subject Code: 355502 Date: 27-05-2014

Subject Name: Piping Engineering

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 considered to be Authentic.**

Q.1	(a)	Define the term 'Pipe' and Classify the pipes based on various criteria.	**07**
	(b)	Describe Functions and duties of piping engineering department.	**07**
Q.2	(a)	Prepare lists of following Piping elements: (1) Various types of Pipe fittings. (2) Various types Fasteners. (3) Various types of valves. (4) Various types Piping specialties.	**07**
	(b)	State role of ASME B.31.3 Code in piping fabrication.	**07**
		OR	
	(b)	Calculate the diameter of pipe to carry , Q = Discharge = 500 lit / Min of water Vmax = Maximum velocity = 15 m / sec Also find the head losses due to friction [Loss of pressure due to friction] in pipe if, Length of pipe = L = 12 km Assume Co efficient of friction = f = 0.015 Gravitational constant = g = 9.8 m / sec^2.	**07**
Q.3	(a)	Define and Explain ' Renolds number'. List various types of flow. Compare Laminar and Turbulent flow.	**07**
	(b)	Describe Design consideration of typical pipe Support.	**07**
		OR	
Q.3	(a)	List out the various types of drawing used in piping eng. Draw neat sketch and explain in brief :- ISO PIPING	**07**
	(b)	Give classification of Gasket based on various criteria. State properties, need and functions of gasket.	**07**
Q.4	(a)	1) Explain in brief with neat sketch : - flanged joint of pipe. 2) Classify the pipe based on end connection and state their typical application	**07**
	(b)	Prepare PQR with help of following data: (Assume suitable addition data , if necessary) 1) Matériel : SA 516 GR 60 2) Pipe dia : 250 mm 3) Electrode : E-7018 of ø 3.15 × 350 mm 4) Thickness of pipe : 12 mm (assume) 5) Welding process : SMAW 6) Position : 5G/6G	**07**
		OR	
Q. 4	(a)	Describes the factor affecting piping equipment layout.	**07**
	(b)	Explain in brief with neat sketch : - 1) Steam traps , 2) Pipe Strainer	**07**
Q.5	(a)	Explain in brief with neat sketch :- procedure for checking of Piping drawings.	**07**

	(b)	Explain the term “coating”? Classify coating based on various criteria. Explain any one method of applying of coating	**07**
		OR	
Q.5	(a)	Explain in brief : - Mechanical seal and gasket	**07**
	(b)	Explain in brief : method of pipe cutting and their edge preparation	**07**

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