Enrolment No.\_\_\_\_\_

Seat No.:

## **GUJARAT TECHNOLOGICAL UNIVERSITY** Diploma Engineering - SEMESTER – V • EXAMINATION – WINTER 2012

Subje	ect cod	le: 355502	)ate:	26/12/2012
Subje	ect Na	me: Piping Engineering		
Time	: 10.3	) am - 01.00 pm	Tota	l Marks: 70
Instr	uctio	ns:		
	1. At	tempt any five questions.		
	2. Ma 3. Fig	gures to the right indicate full marks.		
	4. En	glish version is considered to be Authentic.		
Q.1	(a)	Defines the fluid and classifies the fluid flow.		07
	( )	Explain in brief : What do you understand by pipe siz	ing?	
	(b)	Explain in brief : preliminary criteria of piping des	ign.	07
Q.2				
	(a)	Calculate the diameter of pipe to carry, Q = Discharge = 200  lit / Min of water		07
		Q = Discharge = 200  Int / Min of water V = Maximum velocity = 11  M / sec		
		Also find the loss head due to friction		
		[Loss of pressure due to friction] in pipe if.		
		Length of pipe = $L = 10 \text{ kM}$		
		Assume		
		Co efficient of friction $= f = 0.015$		
	(1-)	Gravitation al constant $= g = 9.8 \text{ M} / \text{sec}^2$ .		
	(D)	Classify the pipe support.		07
		State the function of nine support		
		OR		
	(b)	Explain in brief with neat sketch Pipe Strainer		07
Q.3	(~)			
	(a)	A spherical storage tank having:		07
		Out side Diameter of spherical tank $= D_i = 32$	20 cm	,
		Thickness of tank = $t = 10$ mm		
		If the Rate of Painting = $60 \text{ Rs.} / \text{M}^2$		
		If the Rate of raw material = $100 \text{ Rs.} / \text{Kg}$		
		<ol> <li>Find out the inside volume of storage tank.</li> <li>Find the Total cost of out side Painting</li> </ol>		
		3] Find the Total cost of raw material of tank		
	(b)	List the various types of drawing used in piping engir	neering	2 <b>07</b>
	(~)	Explain meaning of piping spools in piping eng.	2	
		OR		
Q.3	(a)	Explain in brief with tabulated form : MTO used for	or pipe	07
	(h)	compare the following terms with next sketch		07
	(0)	1. Short radius and long radius Elbow		57
		2. Pipe and Tubes		
		3. Normal and Reducer Tee		
				1

Q.4	<b>4</b> (a) Prepare WPQ with help of following data.			
		(Assume suitable addition data, if necessary)		
		1) Matériel : SA 516 GR 60		
		2) Pipe dia : 200 mm		
		3) Electrode : E-7018 of $\Phi$ 3.15 × 350 mm		
		4) Thickness of pipe : 10 mm (assume)		
		5) Welding process : SMAW /GTAW		
		6) Position : 5G/6G		
	(b)	Explain in brief : The information available on "Nozzle schedule	07	
		table " of typical blue print.		
		OR		
Q. 4	(a)	Explain in brief with neat sketches for criteria for developing	07	
		equipment and piping layout.		
			07	
	(b) 1. Define the term ' heat insulation '?			
		2. List the various types of insulation		
~ -		state their properties / applications ?		
Q.5	<i>(</i> )			
	(a)	) Explain in brief with neat sketch :- procedure for checking of		
	piping drawings.			
	(D)	Explain the term "coating"?	07	
		classify coating based on various criteria.		
		Explain any one method of applying of coating		
0.5	(a)		07	
Q.5	(a)	Explain in brief : - Mechanical seal and gasket	07	
	(a)	Explain in order : method of pipe cutting and their edge preparation	07	
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