

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – IV • EXAMINATION – SUMMER- 2016

Subject Code: 345505**Date: 24- 05 - 2016****Subject Name: FAB. TECH - II****Time: 10:30 AM TO 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. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

Q.1 (a) Draw a neat sketch , label its elements and state its functions : **07**
 tube sheet bundle of H.E..

(b) During manufacturing of shell in PMR fabrication industries the observation of shell dia. At various orientations are found as follow : **07**
 Find out ,

Sr no.	Description	Sym	Dim in mm
1)	Diameter at $\alpha=30^\circ$	d1	4000
2)	Diameter at $\alpha=60^\circ$	d2	4006
3)	Diameter at $\alpha=90^\circ$	d3	3994
4)	Diameter at $\alpha=120^\circ$	d4	3998
5)	Diameter at $\alpha=150^\circ$	d5	4012
6)	Diameter at $\alpha=180^\circ$	d6	4010
7	Thickness of shell	t	16

1. Nominal dia. Of shell plate = D nom
2. Ovality & % of ovality.
3. Comment for long seam (L / seam) set up weather is it permissible or not as per code ?
4. To remove /prevent the Ovality Suggest your measures / Remedies

Q.2 (a) Described in brief : MTC with typical example and State use of Material test certificate **07**

(b) Calculate blank dia. From given prepare a drawing for template gauge **07**
 Toro-spherical D/End for following data to Do :-

Sr. no.	Descriptions OF element of d/end	Dimension Required	
		?	mm
1.	I/S Diameter	120	mm
2.	Crown radius Cr	10.6	cm
3.	Inside Depth h	35	mm
4	D/end thickness t	0.6	cm
5	Straight face SF	0.5	cm
6	Knuckle radius Kr	20	mm
	Also Calculate the C.G. of above D/end	?	

OR

- Q.3** (b) Described in brief : Manufacturing sequence of process equipment (P/E) **07**
 (a) List out the various types of codes & std. with their abbreviations. **07**
 Described in brief : ASME codes

- (b) Described in brief with neat sketch **07**
 1) Lifting lug 2) Bubble tube /sprit level
 3) Turn buckle 4) Hydraulic jack

OR

- Q.3** (a) Described in brief with neat sketch : - Positioners **07**

- (b) Define the term ‘ Heat Exchanger ‘ **07**
 State its function , Classify it on various basis / criteria

OR

- Q.4** (a) Find out chord length and radial distance by mathematically and compare with drawing dimension (i.e. distances between two consecutive holes) of Flange having following information / data. Find out weight of flange. High light all flange marking procedure construction lines on the drawing. **07**

Sr no	Description	Sym	Dim in mm
1)	O.D. of flange	D_o	2000
2)	P.C.D. of flange	D_{pcd}	1800
3)	Inside dia of flange	D_i	1200
4)	No. of bolts holes	N	20
5)	Dia of bolts holes	d_b	50
6)	Thickness of flange	T	50
7)	Sp. Weight of flange	δ	7.85 gms/cm ³

- (b) Classify the Vessel support in chart form : **07**
 Described in brief leg supports

oR

- Q.4** (a) Describe the steps followed for the SHELL to SHELL fit-up and set-up with neat sketch **07**

- (b) Classify the Vessel support in chart form : **07**
 Described in brief leg supports

- Q.5** (a) Described in brief with neat sketch pyramid type Three Roller plate Bending machine for forming shells. **07**

- (b) From the given shell raw material data of xyz ind. **07**
 Calculate remaining given blank cells in table.

Sr. no.	Description	Sym	Dim in mm
1)	Length of shell plate	L	7500
2)	width(length) of shell	H	1500
3)	Thickness of shell plate	T	10
4)	Sp. Weight of flange	δ	7.85
5)	Rate of finished material.	Rs. / kg	100
*	Calculate:-		
1)	Plate diagonal length	L_d	
2)	Max. outside & inside dia. of shell Mean dia of shell to be made.	D_o D_i D_{mean}	

3)	Weight of shell plate	Ws	
4)	TOTAL Cost of shell plate	Cs	
5)	Inside volume of shell	Vi	

OR

- Q.5** (a) List out the name of third party inspection agencies with their abbreviation. **07**
 Described its' function/ area of service in Fabrication industries.
- (b) Classify the limpet coil Describe them in brief. **07**

THE END BEST OF LUCK
