Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – VIII-EXAMINATION – WINTER 2015

Subject Code: 3345505 **Date: 09/12/2015**
Subject Name: FAB TECH -II
Time: 02:30 PM TO 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. Write your seat no. and enrolment no. in the above given space Q. PAPER.
5. Answer with neat sketch and to the point.

Q.1 (a) Draw a neat sketch , label its elements and state its functions : Reaction vessels **07**

(b) 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	300
2)	P.C.D. of flange	D_{pcd}	250
3)	Inside dia. of flange	D_i	150
4)	No. of bolts holes	N	8
5)	Dia. of bolts holes	d_b	10
6)	Thickness of flange	T	20
7)	Sp. Weight of flange	δ	7.85 gms/cm³

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

(b) Describe in brief with neat sketch: **07**
i) Tube sheet ii) Tie rod iii) Baffles iv) Spacers v) Tube

OR

(b) Describe the steps followed for the Shell to shell fit-up and set-up with neat sketch **07**

Q.3 (a) Define the term a P/V ? **07**
State the functions / application of a P/V ?
Classifies P/V on various basis / criteria ?

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

Sr no.	Description	Sym	Dim in mm
1)	Diameter at $\alpha=30^o$	d1	4000
2)	Diameter at $\alpha=60^o$	d2	4006
3)	Diameter at $\alpha=90^o$	d3	3994
4)	Diameter at $\alpha=120^o$	d4	3998
5)	Diameter at $\alpha=150^o$	d5	4012
6)	Diameter at $\alpha=180^o$	d6	4008
7	Thickness of shell	t	20

Find out ,

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 ?

To remove/prevent the Ovality Suggest your measures / Remedies

OR

Q.3 (a) 1. Define the term "Support" ? **07**

2. Classify the different types of supports ?
(Draw its neat sketch , Name the various type support)

(b) Calculate the blank dia. of D/End , & its C. G. Also prepare a template gauge drawing for Toro-spherical D/End from Given data :- **07**

Sr no.	Descriptions OF element of d/end	Dimension In mm	
1.	Inside Dia.	1400	mm
2.	Crown radius	1260	mm
3.	Knuckle radius	238	mm
4	Inside Height	390	mm
5	Straight face	38	mm
6	Thickness	1	cm

Q.4 (a) Described in brief with neat sketch a typical shell template Marking procedure. **07**

(b) State the DETAIL of ASME sub section of 1 to 12 . **07**
State the meaning of ASME, TEMA , ASTM & JIS.

OR

Q.4 (a) Describe in brief with neat sketch :- Nozzel Inspection Report **07**

(b) Describe the typical limpet coil marking with the help of given data : **07**
State the function / APPLICATION of limpet coil & Classify the limpet coil.

Sr no.	Description	Sym	Dim in mm / deg.
1)	Shell OD/ O.D. of vessel	Do	1000
2)	Pitch of Limpet coil	P	150
3)	Dia. of limpet coil	dc	30
4)	Angle of orientation Inlet nozzle and Outlet nozzle (approx)	 Ni No	 30 º 90 º
5)	Length of shell from T.L. TO T.L.	L	3000
6)	Distance from top tan line Inlet nozzle and Outlet nozzle (approx)	 L1 L_2	 100 2500

Q.5 (a) 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	8500
2)	width(length) of shell	H	1500
3)	Thickness of shell plate	T	10
4)	Sp. Weight of plate	δ	7.85 **gm/cm³**
5)	Rate of finished material.	R	450 Rs. / kg
*	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	V_i	

(b) Describe in brief with neat sketch **07**
1. PTC , Run –In & Run –Out Plate
2. R.F. Pad & T.T. Holes of nozzle.

OR

Q. 5 (a) Describe in brief with neat sketch : - Inspection report of D / End **07**

(b) Describe in brief with neat sketch : - Positioner **07**

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