Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER – IV • EXAMINATION – WINTER 2012

Subject code: 345505 **Date: 29/12/2012**

Subject Name: Fabrication Technology - II

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **English version is considered to be Authentic.**
5. **Write your seat no. and enrolment no. in the above given space.**
6. **Answer with neat sketch and to the point.**

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

Shell and tube type H. E.

(b) State the meaning of ASME code and various other Process equipments codes. :- State the usefulness of ASME sub section of 1 to 12 . **07**

Q.2 (a) From the given shell raw material data of xyz ind. calculate remaining given blank cells in table. **07**

Sr. no.	Description	Sym	Dim in mm
1)	Length of shell plate	L	1500
2)	Height(length) of shell	H	550
3)	Thickness of shell plate	T	10
4)	Sp. Weight of flange	δ gm/cm³	7.85
5)	Rate of finished material.	Rs. / kg	120
*	Calculate:-		
1)	Plate diagonal length	L_d	
2)	Max. outside & inside dia. of shell Mean dia of shell to be fabricated.	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) Draw neat sketch of alignment tools / leveling tools / equipment and accessories . **07**

OR

(b) Prepare a drawing for D/end template and calculate blank dia. for it. **07**

Sr no.	Descriptions OF element of d/end	Dimension Required	
1.	I/S Diameter	2565	mm
2.	Crown radius	210	cm
3.	Inside Depth	500	mm
4	D/end thickness	1	cm
5	Straight face SF	40	mm
6	Knuckle radius KR	400	mm

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

2. classify the different types of supports ?
   (Draw its neat sketch Name the type support)
3. Explain in brief with neat sketch :- Tube sheet inspection report

(b) Explain in brief :- Importance of MTC in Process equipment **07**

OR

Q.3 (a) Explain in brief with neat sketch **07**

Shell manufacturing for cylindrical shell manufacturing process.

(b) 1 . Explain in brief : - Mechanical cutting process **07**

2 . Explain in brief with neat sketch : - Positioners

Q 4 (a) ABC Shell fabricator having following data / information . calculate remaining given blank cells in table. **07**

Sr no.	Description	Sym	Dim in mm
1)	O.D. of shell	Do	500
2)	Height(length) of shell	H	200
3)	Thickness of shell	T	10
	Calculate / find out :-		
1)	I.D. of shell	Di	?
2)	Mean dia. Of shell	D_m	?
3)	Length of shell plate	L	?
4)	Shell plate diagonal length	L_d	?

(b) 1. Roll Forming Method Classification based on various criteria **07**
2 Specification of roll forming M/Cs
3 Find out arc length and chord length for nozzle N1 and N2. The orientation for nozzles is 55º & 96º. The Outside diameter at shell is 3200 mm .

OR

Q. 4 (a) Classify metal cutting process and explain any one fuel gas cutting process with neat sketch. **07**

(b) Explain in brief with neat sketch **07**
1. Tank rotator
2. T-T Hole and R. F. PAD

Q.5 (a) 1. Define the term D'end ? **07**
2. Classify the D'end based on various criteria ?
3. Explain in brief : safety standers

(b) Explain in brief the tolerance given in typical fabrication job **07**

OR

Q.5 (a) 1. Explain in brief :- Typical Nozzle schedule table. **07**

2. State the function of nozzle ?

3. list types of nozzle ?

(b) Explain the typical limpet coil marking with the help of following data: **07**
1. State the function / APPLICATION of limpet coil.
2. Classify the limpet coil.

Sr no.	Description	Sym	Dim in mm 0r degree
1)	Shell OD/ O.D. of vessel	Do	550
2)	Pitch of Limpet coil	P	100
3)	Dia of limpet coil	Dc	20
4)	Angle of orientation Inlet nozzle and Outlet nozzle (approx)	Ni No	30 º 60 º
5)	Length of shell from tan line to tan line	L	2500
6)	Distance from top tan line Inlet nozzle and Outlet nozzle (approx)	 L_1 L_2	 100 2200

The End
Best of luck
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