Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Semester -IV Remedial Examination December - 2010

Subject code: 345505

Subject Name: Fabrication Technology - II

Date: 16 /12 /2010 **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 Authentic**

Q.1 (a) Draw a neat drawing of flange marking with the help of following information. (All dimensions are in mm) **14**

SR. NO.	DESCRIPTION	SYMBOL	DATA
1	Outside dia. of flange	Do	800
2	Pitch Circle dia. of flange	Dpcd	650
3	Inside dia. of flange	Di	350
4	No. of Bolt Holes in flange	N	16
5	Bolt Hole Dia.	Db	40
6	Thickness of Flange	T	20
7	Sp. Weight of Material	δ	7.85 gm/cm3
8	Rate of material/ Kg.	Rs.	75

A. Calculate the weight of flange
B. Write a flange marking procedure with highlight all construction lines on the drawing.
C. Find out the chord length mathematically (Perpendicular distance between two consecutive hole)
D. Find out the total material cost of flange

Q.2

(a) Draw a neat sketch of elements of typical reaction vessel and label its elements **07**

(b) Explain the pressure vessel supports with neat sketch **07**

OR

(b) Explain the typical MTC with detail **07**

Q.3

(a) 1. Define and classify the dished end. **07**
2. Explain the tube sheet, baffles, R.F. pad and T.T hole with respect to heat exchanger with neat sketch

(b) 1. Define and classify the heat exchanger. **07**
2. List the various steps followed in manufacturing the heat exchanger

OR

Q.3 (a) The shell plate available with XYZ industry having following dimensions **07**

SR. NO.	DESCRIPTION	SYMBOLE	DATA
1	Length of shell plate	Ls	1050
2	Width of shell plate	Ws	350
3	Thickness of shell plate	t	10

Calculate

I. Find of the length of diagonals of given plate
II. Find out Inside diameter, outside diameter and mean diameter of shell

(b) Prepare a template gauge drawing with following information **07**

(All dimensions are in mm)

SR. NO	DESCRIPTION	SYMBOLE	DATA
1	Inside dia. of dished end	Di.	600
2	Crown Radius of dished end	Cr.	540
3	Knuckle Rad. of dished end	Kr.	100
4	Internal Height of dished end	Hi	190
5	Straight Face of dished end	Sf	35
6	Thickness of dished end	t	12

Calculate blank diameter for Toro spherical Dished end

Q.4

(a) XYZ industry information / observation of shell found at various orientations as per detail given below .Thickness 20 mm. **07**

(All dimensions are in mm).

SR.NO.	ORIENTATION	DIA. READING
1	0^0	D1 = 1008
2	30^0	D2 = 1006
3	60^0	D3 = 1002
4	90^0	D4 = 996
5	120^0	D5 = 1004
6	150^0	D6 = 1007

Find out

I. Nominal diameter Dn
II. Ovality & % ovality
III. State whether setup is permissible or not

(b) 1. Explain the concept of ovality. **07**
2. Classify the types of spider. State the functions of spider

OR

Q. 4 (a) Calculate the weight of equal angle having a following information 25 x 25 x 5 mm and length l = 1 mtr. Find out the cost of 1 piece having a specific weight δ = 7.85 gm/cm3 and rate of material R = 70 Rs./ Kg. **07**

(b) Explain in brief shell to shell setup **07**

Q.5

(a) Classify the cutting methods and explain the method of plasma cutting with neat sketch. **07**

(b) 1. Define the term nozzle. Explain set in and set out nozzle with nea sketch. **07**
2. Explain nozzle orientation marking with neat sketch

OR

Q.5 (a) ABC fabrication industry is manufacturing a shell having a following information **07**

SR. NO	DESCRIPTION	SYMBOL	DATA
1	Thickness of shell	t	16
2	Circumference of shell-I	Cr-1	3030
3	Circumference of shell-II	Cr-2	3054

Find out the offset of shell and comment for circumferential seam setup with respect to code whether it is permissible or not

(b) Explain the role of safety during the fabrication and erection work **07**

****