Seat No.:	Enrolment No.
Seat No.:	Enroiment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering Semester –I/II Examination Jan. 2012

Date: 24/01/2012

Subject code: 320015

•		ne: Mechanical Structure & Pipe Drafting 0 am – 01.30 pm Total Marks:	70
Instr	 Ma Fig 	s: dempt all questions. descriptions wherever necessary.	
Q.1	(a)	Explain general structural fabrication drawing and different	07
Q.2	(b)	information provided in it with neat sketch. Explain different dimensioning methods with neat sketch.	07
Ψ	(a) (b)	Explain advantages of AutoCAD over conventional drawing. Draw following symbols 1. General pipeline 2. Air pipeline 3. Gas pipeline 4. Oil pipe line 5. Cold water pipeline 6. Hot water pipeline 7. Flanged joint 8. Screwed elbow 90° 9. Flanged reducer 10. Screwed T 11. Screwed Gate valve 12. Flanged globe valve 13. Flanged stop coke 14. Flanged safety valve	07 07
	(b)	Draw following symbols [1] Square butt weld [2] Single V butt weld [3] Single bevel butt weld [4] Single J butt weld [5] Baking run [6] Fillet weld [7] plug weld [8] Spot weld [9] Seam weld [10] Concave fillet weld [11] Welding symbol showing position of symbol on drawing & all welding information.	05
Q.3		Draw [1] Front View [2] R.H.S. [3] L.H.S [4] Top Plan of Object shown in FIG-1. Use 1 st angle projection system. OR	14
Q.3		In FIG-2 Detail drawing of cotter joint is shown. Make assembly drawing of it and Draw following views. ASSUME SUITABLE DIMENSIONS. [1] Half sectional elevation [2] Top Plan [3] L.H.S.	14
Q.4		In FIG-3 Front View of three solids placed one above the other keeping their axes along one common line is shown. Draw the Isometric view of the same. OR	14
Q. 4		A cone, diameter of base 50 mm and height 60 mm, is resting on H.P. on its base. A cylinder of 30 mm diameter is penetrating the cone from the top side. The axis of cylinder is parallel to the axis of the	14

1

cone and at a distance between two axes is 5 mm. The plane containing both the axes is parallel to V.P. Draw the projections showing the curves penetration. Solve it by generator method.

Q.5

Draw development of Liter cane parts A,B,C and D shown in FIG - 4

OR

Q.5 (a) Draw N or Z type nomograph for equation B.H.P. = $\frac{2 \Pi N T}{4500}$

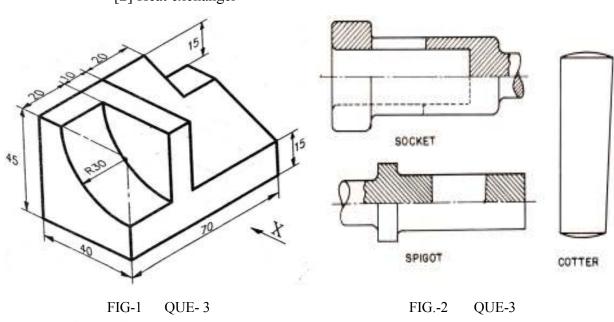
Where BHP – Brake Horse Power

N - RPM 0 TO 500

T - Torque Kg-m 0 to 100

Find BHP by using this graph for N = 200 RPM and T = 40 Kg-m.

- (b) Draw typical drawing of following and label its parts
 - [1] Pressure vessel
 - [2] Heat exchanger



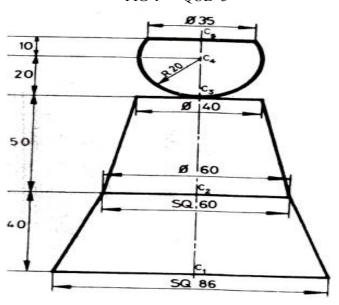


FIG-3 QUE-4

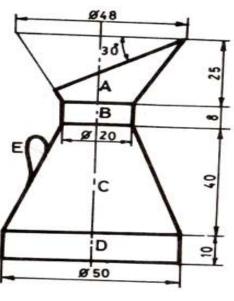


FIG-4 QUE - 5

ale ale ale ale ale ale ale ale ale ale

07

07