Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER–V • Examination – WINTER • 2014

Subject Code: 3355502 **Date: 28-11-2014**

Subject Name: Process Piping Fabrication

Time: 10:30 am - 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. **English version is considered to be Authentic.**

Q.1 (a) Describe in brief :- pipe schedule chart / table , conform the weight for any one example **07**

(b) Calculate the diameter of pipe to carry , **07**

Q = Discharge = 600 lit / Min of water

V = Maximum velocity = 6 M / sec

Also find the loss of head due to friction

[Loss of pressure due to friction] in pipe if,

Length of pipe = L = 10 kM

Assume

Co efficient of friction = f = 0.015

Gravitational constant = g = 9.8 M / sec².

Q.2 (a) Described in brief : with neat sketch: pipe welding position **07**

(b) State role of piping engineering ASME & API Codes in piping engineering? **07**

OR

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

High Point Vent **[HPV]** & Low Point Drain **[LPD]**

Q.3 (a) Described the Purging process used in pipe to pipe fitting welding with neat sketch.. **07**

(b) List out the following types of piping elements? **07**

1. Various types of Pipe fittings 2. Various types Fasteners

3. Various types of valves 4. Various types Piping specialties

OR

Q.3 (a) Describe in brief with neat sketch : State relationship among : **07**

1. Absolute pressure 2. Atmospheric pressure 3. Gauge pressure

(b) Describe in brief : Functions and duties of piping engineering departments. **07**

Q.4 (a) Describe in brief with neat sketch : - 1) Pipe Strainer, 2) Steam traps **07**

(b) Classify the pipe support. **07**

State the function of pipe support.

Draw neat sketch of any thee pipe types supports

OR

Q. 4 (a) Define the term ‘ heat insulation ’ with respect to piping ? **07**

Classify the various types of insulation /state its application , state their properties ?

(b) Prepare PQR with help of following data. **07**

(Assume suitable addition data , if necessary)

1. Matériel : SA 516 GR 60
2. Pipe dia : 1000 mm
3. Electrode : E-7018 of ø 3.15 × 350 mm

4. Thickness of pipe : 10 mm (assume)
5. Welding process : SMAW
Position : 5G/6G

Q.5 (a) Define the term 'pipe' W. R. to piping eng. ? **07**
Classify the pipe / piping based on various criteria?

(b) Described in brief with tabulated form : **07**
M T O used for pipe fabrications.

OR

Q.5 (a) Answer the following questions from the given (FIG -1) piping I S O drawing **14**
Show all the necessary the calculations whenever necessary.

1. State the information (1) Drawing No. (2) Revision No
(3) Starting point co-ordinates (N , E , EL) 4) No. of spools in given Isometrics
2. End point co-ordinates for End point -1.(N , E , EL) .
3. 1) No. Of Site /Field Joint
2) No. Of Shop/Spool Joint
3) Total No. Of Joints
4) No. of reducers with size
5) No. Of Bends / Elbows with size.
4 Total Amount of
1) Inch-Meter Erection In Piping Isometrics.
2) Inch-Dia. Welding In Piping Isometrics.

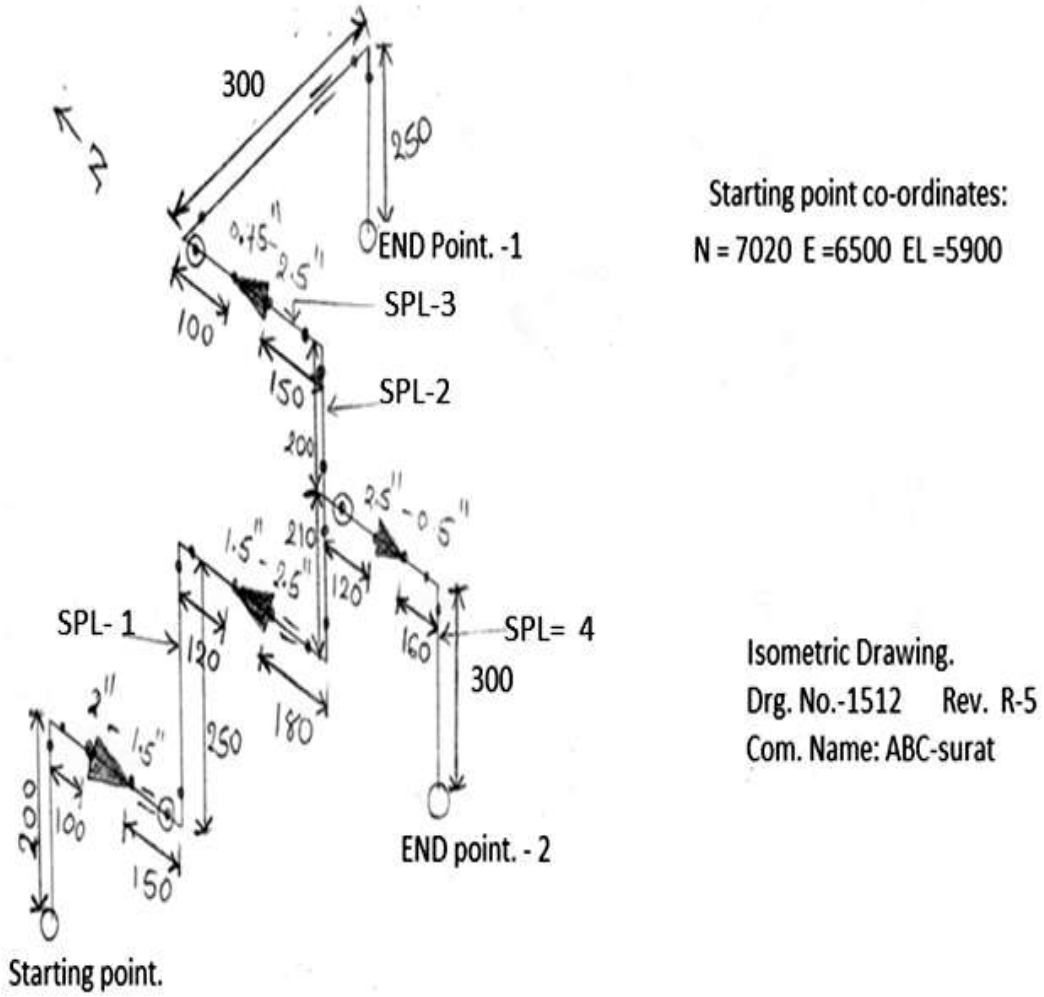

FIG -1

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