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**END SEMESTER EXAMINATION – 2022**

**Semester : 4th**

**Branch : Chemical Engineering**

**Subject Code : Ch-406**

**CHEMICAL ENGINEERING DRAWING – I**

**Full Marks – 70**

**Time – Four hours**

**The figures in the margin indicate full marks for the questions.**

**Instruction :**

- *All* questions of PART – A are compulsory.

**PART – A**

**Marks – 25**

1. Choose the correct answer : 1×5=5

(a) The fitting for connecting branch lines is

(i) plug

(ii) socket

(iii) tee

(iv) cap

**[Turn over**

- (b) A flange with no opening is called a
- (i) Reducer
  - (ii) Blind
  - (iii) Union
  - (iv) Couple
- (c) The valve used to control the flow of a fluid in a pipeline is
- (i) Globe
  - (ii) Gate
  - (iii) Check
  - (iv) Needle
- (d) Welded joints are now extensively used in place of
- (i) Flanged joints
  - (ii) Sleeve Joints
  - (iii) Union joints
  - (iv) Riveted joints
- (e) A small piece of pipe having threads on the outer side is called a
- (i) Nipple
  - (ii) Plug
  - (iii) Tubing
  - (iv) Socket

2. Fill in the blanks :

1×5=5

- (a) With the help of an \_\_\_\_\_ the direction of the flow can be changed.
- (b) When two ends of pipes are joined, the pipe fitting used is called \_\_\_\_\_.

- (c) \_\_\_\_\_ joints are used when there is a high chance of leakage in the joints.
- (d) The valve used for starting or stopping the flow is the \_\_\_\_\_ valve.
- (e) Pressure vessels are effectively fabricated by \_\_\_\_\_.

3. Write direct answers : 10

- (a) Name the fitting used to connect four pipes. 1
- (b) Mention the use of Bell and Spigot Joint. 1
- (c) What is the junction of a check valve ? 1
- (d) Name two process variables controlled by an automatic control valve. 2
- (e) Name two types of welded joints. 2
- (f) For sewers, the pipes are made of which material ? 1
- (g) Give one use of an expansion joint. 1
- (h) Name the commonly used joint for cast iron pipes. 1



4. Match the following :

1×5=5

(a) Double lap	(i) Bell and spigot joint
(b) Lead	(ii) Closes the line
(c) Stainless steel	(iii) Joins pipes of different diameters
(d) Plug	(iv) Example of welded joint
(e) Reducer	(v) Corrosion resistance

### PART – B

Marks – 45

#### Instruction :

- From PART-B Question No. 5 is *compulsory* and answer any *five* questions from Question No. 6 :

5. Draw a labeled diagram either of a Gate or of a Globe valve. 15

6. Draw any *five* of the following : 6×5=30

(a) A Check valve

(b) A fitting for changing the direction.



- (c) Double Lap Joint
- (d) Screwed socket joint
- (e) Union joint
- (f) Automatic control valve.