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END SEMESTER REGULAR / RETEST EXAMINATION, JULY–2023

Branch : Chemical Engineering

Semester : 4th

Subject Code : Ch–406

CHEMICAL ENGINEERING DRAWING – I

Full Marks – 70

Time – Three hours

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

Instruction :

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

PART – A

Marks – 25

1. Choose the correct answers : 1×5=5

(a) Two pipes of different diameters are coupled together with the help of a

(i) elbow (ii) reducer

(iii) long-turn bend (iv) cross

[Turn over

(b) Fittings for introducing branch lines can be

(i) tees (ii) crosses

(iii) Y-bends (iv) All of these

(c) The valve used to control the flow of a fluid in a pipeline is

(i) Gate (ii) Globe

(iii) Check (iv) None of these

(d) Check valve is a type of

(i) pressure reducing valve

(ii) pressure relief valve

(iii) directional control valve

(iv) None of the above

(e) Welded joints are now extensively used in place of

(i) flanged joints (ii) riveted joints

(iii) union (iv) sleeve joints

2. Fill in the blanks : $1 \times 5 = 5$

(a) A _____ joint helps the pipeline to branch off at 90^0.

(b) A plug is used for closing a pipeline that has an _____ thread.

(c) _____ are mechanical devices that control the flow and press within a system or process.

(d) When _____ are used in pipelines, it is easy to dismantle and repair.

(e) The _____ joint is obtained by placing the edge of the plate to edge.

3. Write direct answers : 2×5=10

(a) What are pipes used for ?

(b) Name two types of welded joints.

(c) Why is a union used widely in pipelines ?

(d) Name two fittings used to change the direction of flow.

(e) Name two process variables controlled by a control valve.

4. Match the following : 1×5=5

(a) Cap	(i) Threads on the outside
(b) Sleeve	(ii) Welded joint
(c) Fillet joint	(iii) Protective cover
(d) Socket	(iv) Controlling the flow
(e) Globe valve	(v) Closing the pipe-end

PART – B

Marks – 45

5. Draw a fitting to change the direction of a pipeline. 5

6. Draw any *two* of the following : 10×2=20

   (a) Union Joint

   (b) Globe Valve

   (c) Screwed Socket joint.

7. Draw any *two* of the following : 10×2=20

   (a) A Check valve

   (b) Automatic Control Valve

   (c) Double V Butt Joint.