**Scheme - I**

**Sample Question Paper**

**Program Name : Diploma in Chemical Engineering**
**Program Code : CH**
**Semester : Sixth**
**Course Title ; Piping in Chemical Engineering (Elective II)**
**Marks : 70** **Time: 3Hrs.**

**22612**

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## Instructions –

**(1) All Questions are compulsory.**
**(2) Illustrate your answers with neat sketches wherever necessary.**
**(3) Figure to the right indicates full marks.**
**4) Assume suitable data if necessary**
**5) Preferably write the answers in sequential order.**

## Ques. No. 1. Attempt any FIVE of the following (10 Marks)

a) Define Pipe size, Schedule number.
b) Give classification of pipe.
c) List different mechanical properties of piping materials.
d) Enlist material used for insulation for piping.
e) Give types of heat tracing system.
f) Define pipe rack.
**g)** Give method of leak testing for piping.

## Ques. No. 2. Attempt any THREE of the following (12 Marks)

a) Describe selection of design code for piping.
b) Describe selection process of gaskets for piping.
c) Describe color bands in color coding as per IS 2379:1990.
**d)** Explain in detail heat loss through insulation**.**

## Ques.No.3 Attempt any THREE of the following (12 Marks)

a) Describe erection planning in piping.
b) Differentiate Hydrostatic and pneumatic method of leak testing.
c) Explain the term piping installation drawing.
d) Describe isometric dimensions with neat diagram.

**Ques.No.4.Attempt any THREE of the following (12 Marks)**

a) Give guidelines for organize the pipe rack spacing.
b) Describe the term critical thickness and optimum thickness of piping material.
c) Explain color coding for pipe carries hazardous materials.
d) Enlist functions and properties of gaskets for piping.
**e)** Differentiate API and ASME with suitable example**.**

**Ques No. 5 Attempt any TWO of the following (12 Marks)**

a) Draw diagram of typical component of steam tracing system.
b) Draw diagram of pipe rack drawing organization.
c) Compare properties of insulation material used for piping.
    1 Calcium silicate
    2 Cellular Glass
    3 Fiberglass

**Ques No. 6 Attempt any TWO of the following (12 Marks)**

a) Differentiate single line and double line drawing for piping.
b) Describe physical properties of piping materials with respect to density, thermal conductivity and specific heat.
c) Draw isometric symbols of tees(straight,reducing), reducer(concentric,eccentric), flanges, valves(Gate,Globe).

## Scheme - I

## Sample Test Paper - I

**Program Name** : **Diploma in Chemical Engineering**

**Program Code** : **CH**

**Semester** : **Sixth**

**22612**

**Course Title** : **Piping in Chemical Engineering (Elective II)**

**Marks** : **20** **Time: 1 Hour**

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**Instructions:**

(1) All questions are compulsory.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data if necessary.

(5) Preferably, write the answers in sequential order.

**Q.1 Attempt <u>any FOUR.</u>** **(08 Marks)**

a) Define pipe wall thickness.
b) Give classification of Pipe.
c) List API standard referred by piping engineer.
d) Enlist selection criteria for piping materials.
e) State properties of gaskets in piping.
f) List material of construction for piping.

**Q.2 Attempt <u>any THREE.</u>** **(12 Marks)**

a) Describe color coding for pipe carries utilities.
b) Explain the role of piping engineer in piping design, fabrication.
c) Compare Codes and standard for piping with example.
d) Describe different types of gaskets used in Piping.
e) State in detail 1 Modulus of elasticity 2 Yield strength**.**

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## Scheme - I

## Sample Test Paper - II

**Program Name** : **Diploma in Chemical Engineering**

**Program Code** : **CH**

**Semester** : **Sixth**

**22612**

**Course Title** : **Piping in Chemical Engineering (Elective II)**

**Marks** : **20** **Time: 1 Hour.**

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**Instructions:**

(1) All questions are compulsory.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data if necessary.

(5) Preferably, write the answers in sequential order.

**Q.1 Attempt <u>any FOUR.</u>** **(08 Marks)**

a) Enlist insulation materials used for piping.
b) Give types of heat tracing system.
c) Explain the term piping joint alignment.
d) Define pipe rack.
e) Enlist different methods of heat testing.
f) Explain accessory materials used for piping insulation.

**Q.2 Attempt <u>any THREE.</u>** **(12 Marks)**

a) Give guidelines for organize the pipe rack spacing.
b) Explain skin effect tracing with the help of diagram.
c) Describe critical thickness of insulation and optimum thickness of insulation.
d) Explain the concept heat loss through insulation.
e) Describe in detail pneumatic method of leak testing.

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