22612

24225

3 Hours / 70 Marks   Seat No. ⬚⬚⬚⬚⬚⬚⬚⬚

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answer with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1.   **Attempt any FIVE of the following:**   **10**

a) Give the classification of pipe.

b) Define Modulus of elasticity.

c) Define critical thickness of insulation.

d) Define induction heating.

e) List out the information sources for piping arrangement drawings.

f) Define pipe size and schedule number.

g) Define specific heat.

Marks

2. **Attempt any THREE of the following:** **12**

a) Write down the functions and properties of Gaskets.

b) Explain in detail heat loss through insulation.

c) Describe pneumatic leak testing.

d) Explain the selection criteria of piping.

3. **Attempt any THREE of the following:** **12**

a) List out the salient features of IS2379:1990.

b) Draw Isometric piping symbols.

c) Describe the piping installation for chemical industries.

d) List out the accessory materials for insulation with specific application.

4. **Attempt any THREE of the following:** **12**

a) Explain double line drawing format.

b) Explain vacuum and static head testing.

c) Compare phenolic foam and polyurethane foam.

d) List out the applications of copper and its alloys and Aluminium find its alloys.

e) Differentiate API and ASME standards with example.

5. **Attempt any TWO of the following:** **12**

a) Define - thermal conductivity, thermal expansion hardness and toughness.

b) Write down the types of heat tracing system. Also discuss the selection criteria for tracing system.

c) Draw diagram of pipe rack drawing organization.

6. **Attempt any TWO of the following:** **12**

a) Describe Isometric dimension and text call outs with neat diagram.

b) Describe Isometric offset with neat diagram.

c) Discuss design parameters of insulating system for piping. Also write down the service types for insulation design.

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