Q P. Code:-24344

[Time: Three Hours] **[Marks:80]**

1. Question one is compulsory
2. Attempt any three from Q.2 to Q.6
3. Assume data wherever necessary
4. Figure to the right indicate full marks.

Q.1 Attempt any four of the following 20

a) State all types vessel support with their application and neat sketch.
b) State the procedure for cylindrical shell subjected to an external pressure.
c) State brief reasons for loss of fluid in storage tanks.
d) Classify heat exchanger as per TEMA.
e) Classify agitators.

Q.2 a) State all the names of ASME sections. 12
b) Explain with reference to pressure vessels 8
i. Welded joint efficiency factor
ii. Corrosion allowance

Q.3 a) Explain significance of different types flanges with sketch and define gasket and state ideal properties of gasket. 10
b) Draw a neat sketch of pressure vessel showing all the categories of joint as per ASME.. 10

Q.4 a) Explain significance of following 10
i. API code
ii. ASME code
b) Draw a neat sketch of reinforced openings showing all the areas as per ASME code. 10

Q.5 a) Draw a neat sketch of agitator with system components. 10
b) Write a note on testing and inspection methods used in process equipment. 10

Q.6 Attempt any four 20

a) Design consideration in process equipment design
b) Power requirements for agitation
c) Explain tube pattern in relation with heat exchanger.
d) Describe procedure of rectangular tank.
e) Explain P and ID and PFD

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