

OR

- Q.3** (a) What is the significance of assembly drawing? **03**
(b) Compare nitriding and cyaniding. **04**
(c) What is phase diagram? List out the importance of heat treatments. Also explain Annealing in detail. **07**

- Q.4** (a) Compare single effect and multiple effect evaporators. Show different methods of feeding in evaporators by labeled diagram. What are the uses of evaporators in food industry? **07**
(b) Discuss carburizing and its methods in detail. **07**

OR

- Q.4** (a) Discuss concept of cooling curve with diagram also discuss micro constituents of iron and steel with allotropy. **07**
(b) What is Plate Heat Exchanger (PHE)? What are its applications in food industry? With the help of a neat diagram explain PHE. **07**

- Q.5** (a) Explain the principle of oxy acetylene gas welding with diagram. Draw different types of welding joints. **07**
(b) Differentiate between single and multiple start threads with the help of a neat labeled diagram. The number of threads in a M25 external ISO metric screw thread bolt are 20 per inch. Calculate the following: **07**
(i) Slope of the screw in mm if it is a single start thread
(ii) Nominal diameter in mm.
(iii) Lead in mm if it is a double start thread.
(iv) Pitch in mm.

OR

- Q.5** (a) Draw Front and Top view of given isometric drawing. **14**


