# UNIT 1

1. Define system and its characteristic.
2. What is concurrent engineering?
3. Explain system approach briefly.
4. System is goal seeking. Explain.
5. What are different mechanical systems?
6. What is system design?
7. Explain Entities, attributes and activities.
8. Explain engineering activities matrix.
9. Analyze need statement of a heat pump.
10. What is important of need statement?
11. How initial element of need statement originated?
12. Explain system design where environment and safety are prime concern.
13. The hot combustion gases of furnace are separated from the ambient air and it's surrounding, which are at $30^{o}C$ by a brick wall (k=1.2 $w/mk$) of 0.15 cm thickness having surface emissivity of 0.8. Under steady state conditions, the temperature of outer surface is $100^{o}C$ and film heat transfer coefficient of air adjoining the surface is 20 $w/m^{2}k$. Calculate the brick inner surface temperature. Take $F_{12}$=1.

14. What are the types of needs?

15. Write down the preliminary need statement for

    a. Bicycle
    b. Telephone
    c. Electric iron

16. What are linear and non linear systems? What is an additive system?

17. What are main objectives of concurrent engineering?

18. What is meant by entity, attribute and activity of a system?

19. Write down the steps in decision process approach?