Quiz

1. What are the different stages of phase transformation?
2. What are homogeneous and heterogeneous nucleation?
3. Derive the expression for critical radius of the nucleus?
4. What are the different phases present in the Fe-C system?
5. How many invariants reactions are present in the Fe-C system and what are those?
6. What are microstructure of eutectoid, hypoeutectoid and hypereuctectoid steels obtained under equilibrium conditions?
7. What are T-T-T and C-C-T diagrams? What is the fundamental difference between them?
8. What should be the conditions for forming martensite in steels?
9. Why is the martensitic transformation in steels a diffusionless process?
10. What are sorbite and troostite?
11. A plain-carbon steel contains 93 wt% ferrite and 7 % Fe_3C. What is the average carbon content in the steel?
12. A 0.9% C steel is slowly cooled from 900 °C to a temperature just below 727 °C . Calculate the percentages of proeutectoid cementite and eutectoid ferrite?
13. A 0.4% C steel is slowly cooled from 940 °C to (A) just above 727 °C (B) just below 727 °C.

    Calculate the amount of austenite and proeutectoid ferrite for case (A).

    Calculate the amount of proeutectoid ferrite and eutectoid ferrite and cementite for case (B).