1. Gibbs phase rule for general system:

(a) P+F=C-1 (b) P+F=C+1 (c) P+F=C-2 (d) P+F=C+2

2. Following is wrong about a phase diagram.

(a) It gives information on transformation rates.

(b) Relative amount of different phases can be found under given equilibrium conditions.

(c) It indicates the temperature at which different phases start to melt.

(d) Solid solubility limits are depicted by it.

3. A solid phase results in a solid plus another solid phase up on cooling during \_\_\_\_\_\_\_\_\_\_ reaction.

(a) Eutectoid (b) Peritectoid (c) Eutectic (d) Peritectic

4. A solid phase results in a solid plus another solid phase up on heating during \_\_\_\_\_\_\_\_\_\_ reaction.

(a) Eutectoid (b) Peritectoid (c) Monotectoid (d) None

5. A liquid phase produces two solid phases during \_\_\_\_\_\_\_\_\_ reaction up on cooling.

(a) Eutectic (b) Eutectoid (c) Peritectic (d) Peritectoid

6. Eutectic product in Fe-C system is called

(a) Pearlite (b) Bainite (c) Ledeburite (d) Spheroidite

7. Eutectoid product in Fe-C system is called

 (a) Pearlite (b) Bainite (c) Ledeburite (d) Spheroidite

8. Phases that exist on left side of an invariant reaction line are called (a) Pro-phase (b) Hypo-phase (c) Hyper-phase (d) None

9. In in Fe-C system what is the content of eutectoid steel.

(a) 72% (b) 76% (c) 0.76% (d) 2.14%

10. Relative amounts of phases in a region can be deduced using

(a) Phase rule (b) Lever rule (c) Either (d) None

11. 8. The boundary line between (liquid) and (liquid+solid) regions must be part of \_\_\_\_\_\_\_\_\_.

 (a) Solvus (b) Solidus (c) Liquidus (d) Tie-line 9

12. Alloys with carbon content upto 2.0 percent are called

(a) steels (b) cast irons (c) duralium (d) stainless steel.

13 ……. Is the softest structure that appear on the Fe-C equilibrium diagram?

1. Austentite (a) ledeburite (c) pearlite (d) ferrite.

14.What is the name of structucture of austenite.

(a) BCC (b) FCC (c) Hexagonal closed packed (d) simple cubic

15. When austenite is cooled at rate faster than the critical cooling rate, it transforms to

(a) martensite (b) pearlite (c) bainite (b) cementite

16. Bainite hasa) the same morphology as

(a) austenite b) a non lamellar morphology of ferrite and cementite c) the coarsest morphology among all the products from austenite d) none of these

17. During pearlite transformations

a) new phases form b) crystal structure change c) composition of phases changes d) there is no diffusion

18.The temperature and carbon content at which eutectoid reaction occurs in Fe C equilibrium diagramare

a) 723º C and 0.02 % C b) 723º C and 0.08 % C 623º C and 0.02 % C b) 623º C and 0.08 %

 19. The eutectoid mixture of steel is

a) a mixture of ferrite and cementite b) a mixture of ferrite and austenite c) a mixture of austenite and cementite d) called pearlite

20.The reaction that, on heating one solid phase, yields another solid phase plus one liquid phase is called a) eutectic  b) eutectoid c) peritectic d) peritectoid