

# 11. Heat Treatment

Q. ID: ITISKILL8940BC

May 2026

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Answer Key

Duration: 30 Mins

Total Marks: 14

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1. What are the various types of heat treatment processes?

- A) Annealing, Normalising, Hardening and Tempering  
B) Tempering, Cooling, Packing and Solling  
C) Hardening, Soaking, Painting and Packing  
D) Normalising, Heating, Cooling and Painting

**Answer: A) Annealing, Normalising, Hardening and Tempering**

2. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?

- A) 10 minutes  
B) 20 minutes  
C) 15 minutes  
D) 5 minutes

**Answer: D) 5 minutes**

3. What is the process of heat treatment?

- A) The process of cooling to measure the dimensions  
B) The process of heating and bending as per our requirement  
C) The process of heating and cooling to change the structure and properties  
D) The process of heating to change the dimensions

**Answer: C) The process of heating and cooling to change the structure and properties**

4. What are the various stages of heat treatment?

- A) Quenching, Cooling and Heating  
B) Heating, Soaking and Quenching  
C) Soaking, Quenching and Cooling  
D) Heating, Cooling and Quenching

**Answer: B) Heating, Soaking and Quenching**

5. What is the name of the structure formed, if a steel is heated for about 723 Degree C?

- A) Ferrite  
B) Martensite  
C) Austenite  
D) Cementide

**Answer: C) Austenite**

6. What is the purpose of tempering a steel?

- A) To increase the hardness  
B) To remove the ductility  
C) To reduce the brittleness  
D) To increase the brittleness

**Answer: C) To reduce the brittleness**

7. What is colour of a metal piece when heated to 250 Degree C while doing the tempering process?

- A) Brown  
B) Blue  
C) Pale  
D) Purple

**Answer: A) Brown**

8. Which process steel is heated in a carbonaceous atmosphere for the penetration of carbon?

- A) Carburising  
B) Induction hardening  
C) Nitriding  
D) Case hardening

**Answer: A) Carburising**

9. Which process produce equilibrium conditions?

- A) Annealing and Hardening  
B) Normalising and Tempering  
C) Normalising and Tempering  
D) Annealing and Normalising

**Answer: D) Annealing and Normalising**

10. Which heat treatment process is done to refine the grain structure of the steel?

- A) Tempering  
B) Normalising  
C) Annealing  
D) Hardening

**Answer: B) Normalising**

11. Which is the suitable nitriding process for all alloyed and unalloyed steels?

- A) Gas nitriding  
B) Nitriding in Quenching tank  
C) Nitriding in salt-bath  
D) Silver nitriding

**Answer: C) Nitriding in salt-bath**

12. Which is a kind of surface hardening process?

- A) Cementide  
B) Ferrite  
C) Nitriding  
D) Tempering

**Answer: C) Nitriding**

13. What is the name of heat treatment process done to relieve strain and stress?

- A) Hardening  
B) Annealing  
C) Normalising  
D) Tempering

**Answer: B) Annealing**

14. What is the name of the heat treatment process, where the metal is heated and quenched in water or oil?

- A) Annealing  
B) Tempering  
C) Hardening  
D) Normalising and Tempering

**Answer: C) Hardening**