

**Duration: 60 Mins**

**Total Marks: 17**

**ID: ITISKILL2289EL**

Student Name: \_\_\_\_\_ Roll No: \_\_\_\_\_

1. Which is a kind of surface hardening process?  
 A) Nitriding                      B) Ferrite  
 C) Tempering                      D) Cementite

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2. Where the centre of gravity of a circle lies?  
 A) At its centre                      B) Any where on its radius  
 C) Any where on its diameter      D) Any where on its circumference

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3. What are the various stages of heat treatment?  
 A) Soaking, Quenching and Cooling      B) Heating, Soaking and Quenching  
 C) Heating, Cooling and Quenching      D) Quenching, Cooling and Heating

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4. Which affects the centre of gravity of the object?  
 A) Mass                                  B) Weight  
 C) Shape                                  D) Density

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5. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?  
 A) 10 minutes                      B) 5 minutes  
 C) 15 minutes                      D) 20 minutes

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6. What is the process of heat treatment?  
 A) The process of heating and cooling to change the structure and properties      B) The process of heating and bending as per our requirement  
 C) The process of heating to change the dimensions      D) The process of cooling to measure the dimensions

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7. What is colour of a metal piece when heated to 250 Degree C while doing the tempering process?  
 A) Purple                                  B) Blue  
 C) Brown                                  D) Pale

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8. Which process produce equilibrium conditions?  
 A) Annealing and Hardening      B) Annealing and Normalising

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9. Which process steel is heated in a carbonaceous atmosphere for the penetration of carbon?  
 A) Case hardening                      B) Induction hardening  
 C) Nitriding                                  D) Carburising

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10. Which is the suitable nitriding process for all alloyed and unalloyed steels?  
 A) Nitriding in salt-bath                      B) Silver nitriding  
 C) Gas nitriding                                  D) Nitriding in Quenching tank

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11. Which heat treatment process is done to refine the grain structure of the steel?  
 A) Tempering                                  B) Annealing  
 C) Normalising                                  D) Hardening

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12. What is the name of heat treatment process done to relieve strain and stress?  
 A) Hardening                                  B) Annealing  
 C) Normalising                                  D) Tempering

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13. What is the name of the heat treatment process, where the metal is heated and quenched in water or oil?  
 A) Hardening                                  B) Annealing  
 C) Tempering                                  D) Normalising and Tempering

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14. What is the name of the structure formed, if a steel is heated for about 723 Degree C?  
 A) Cementite                                  B) Martensite  
 C) Austenite                                  D) Ferrite

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15. What is the purpose of tempering a steel?  
 A) To increase the brittleness      B) To increase the hardness  
 C) To reduce the brittleness      D) To remove the ductility

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

A) Tempering, Cooling,  
Packing and Solling

C) Hardening, Soaking,  
Painting and Packing

B) Annealing, Normalising,  
Hardening and Tempering

D) Normalising, Heating,  
Cooling and Painting

**17.** What is the name of the point at which all the weight of the body concentrated?

A) Initial point

C) Central point

B) Centroid

D) Centre of gravity