Sample Questions
Metallurgical Engineering

1. Which of the following heat treatment creates a case hardened surface?
   a. Flame hardening
   b. Carburizing
   c. Nitriding
   d. Cyaniding

2. The breaking stress of a particular steel is 1.5 GPa. What force will be needed to break a piece of wire of diameter 1 mm?
   a. 1178 N
   b. 1195 N
   c. 1170 N
   d. 1180 N

3. Which of the following elements in steel can enhance the machinability by increasing sulphur content?
   a. Aluminium
   b. Manganese
   c. Copper
   d. Calcium

4. Flaws in conductive material can be detected by ________.
   a. Radiography
   b. Holography
   c. Eddy current testing
   d. Ultrasonic testing

5. Flaws in conductive material can be detected by ________.
   e. Radiography
   f. Holography
   g. Eddy current testing
   h. Ultrasonic testing

6. Which of the following methods is used to determine the atomic and/or magnetic structure of a material?
   a. Scanning electron microscopy
   b. Transmission electron microscopy
   c. X-ray diffraction
   d. Optical microscopy
   e. Neutron diffraction

7. Which of the following mills is not used for fine grinding of ores?
   a. Ball mill
   b. Turbo mill
   c. Vibrating mill
   d. Hammer mill
8. Which of the following laws states that the vapor pressure of an ideal solution is proportional to the Mole fraction of solvent?
   a. Henry's law
   b. Sievert's law
   c. Raoult's law
   d. Gibbs-Duhem equation

9. Why are low alloy steels welded using nickel alloys as filler metals?
   a. For controlling hot cracking
   b. For controlling cold cracking
   c. For controlling porosity
   d. For controlling distortion

10. Which of the following metal working processes is not a hot working process?
    a. Rolling
    b. Forging
    c. Extrusion
    d. Wire drawing