

## 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