

23 Multiple choice questions

1. a generic term for glass that has been processed in order to resist shattering
 - a. safety glass
 - b. laminated glass
 - c. tempered glass
 - d. pearlite

2. a phase of carbon steel and cast iron consisting of ferrite and cementite formed into distinct layers on slow cooling from austenite
 - a. work
 - b. pearlite
 - c. reactance
 - d. tempering

3. involves the use of a variety of rates of cooling to cause a steel to harden; this is done in water, brine and oil
 - a. quenching
 - b. tempering
 - c. pearlite
 - d. reactance

4. a sandwich of two panes of glass with a polymer interlayer of polyvinyl butyral (PVB), joined under heat and pressure in a furnace called an autoclave
 - a. safety glass
 - b. insulator
 - c. laminated glass
 - d. tempered glass

5. a heat treatment process for ferrous alloys involving heating the material above the upper critical temperature, then cooling in still air, the object being to enhance toughness by refining grain size
 - a. tempering
 - b. normalising
 - c. spheroidising
 - d. rectifier

6. heat-treatment in which pearlite lamellae are broken down to form spheroids
 - a. tempering
 - b. quenching
 - c. normalising
 - d. spheroidising

7. any device which automatically provides protection for the occupants of a vehicle, such as the bumpers, seat belts, air bags etc.
 - a. phase diagram
 - b. pearlite
 - c. passive safety
 - d. transistor

8. containing no or minimal iron
 - a. power
 - b. transformer
 - c. momentum
 - d. non-ferrous

9. a substance whose electrical conductivity is intermediate between that of a metal and an insulator and whose conductivity increases with temperature and in the presence of impurities
 - a. microprocessor
 - b. transistor
 - c. insulator
 - d. semiconductor

10. reheating of a quenched steel to a sub-critical temperature in order to improve ductility and toughness
 - a. power
 - b. tempered glass
 - c. quenching
 - d. tempering

11. a measure of the work done within a specified time or a measure of the rate at which work is being done, expressed in watts (W) or kilowatts (kW)
 - a. work
 - b. momentum
 - c. power
 - d. pearlite

12. the property of a device which opposes the flow of an electric current, measured in ohms
 - a. reactance
 - b. resistance
 - c. rectifier
 - d. transistor

13. a programmable computer processor manufactured on a single 'chip', or in some cases, multiple chips
 - a. semiconductor
 - b. power
 - c. transistor
 - d. microprocessor

14. an instrument containing diodes that allows the conversion of AC current to DC
 - a. power
 - b. reactance
 - c. rectifier
 - d. transistor

15. an electrical device, which by electromagnetic induction allows the voltage of an alternating current to be stepped up or down
 - a. transistor
 - b. rectifier
 - c. insulator
 - d. transformer

16. a semiconductor wafer on which electrical components such as resistors, transistors, capacitors have been manufactured; also known as a chip or microchip
 - a. insulator
 - b. integrated circuit
 - c. tempered glass
 - d. laminated glass

17. a measure of the energy expended by a force in moving an object a certain distance
 - a. power
 - b. momentum
 - c. work
 - d. pearlite

18. a material of such low conductivity that the flow of current through it is usually negligible
- pearlite
 - transistor
 - reactance
 - insulator
19. glass heat-treated to create a compressive surface layer by controlled cooling of the surface
- tempering
 - laminated glass
 - tempered glass
 - safety glass
20. a semiconductor device with three connections, capable of amplification in addition to being used to switch electronic signals on and off
- resistance
 - transistor
 - insulator
 - transformer
21. that part of the impedance of an alternating current (AC) circuit that is due to the inductance and capacitance
- reactance
 - rectifier
 - pearlite
 - resistance
22. a diagram in which the existence and coexistence of various phases are identified by regions and lines
- pearlite
 - phase diagram
 - power
 - spheroidising
23. a measure of the motion of a body equal to the product of its mass and velocity
- tempering
 - momentum
 - work
 - power