# Chapter 26 WELDING PROCESSES

# Multiple Choice Quiz

There are 30 correct answers in this multiple choice quiz (some questions have multiple answers that are correct). To achieve a perfect score on the quiz, all correct answers must be given. Each correct answer is worth 1 point. Each omitted answer or wrong answer reduces the score by 1 point. Percentage score on the quiz is based on the total number of correct answers.

1. The feature that distinguishes fusion welding from solid-state welding is that melting of the faying surfaces occurs during fusion welding but not in solid-state welding: (a) true or (b) false?
2. Which of the following processes are classified as fusion welding (three correct answers): (a) electrogas welding, (b) electron-beam welding, (c) explosion welding, (d) forge welding, (e) laser-beam welding, and (f) ultrasonic welding?
3. Which of the following processes are classified as solid-state welding (three correct answers): (a) cross-wire welding, (b) diffusion welding, (c) friction welding, (d) pressure gas welding, (e) resistance seam welding, (f) roll welding, and (g) stud welding?
4. Electrodes used in arc welding processes are classified as consumable or nonconsumable. Filler metal is always added when consumable electrodes are used and never added when nonconsumable electrodes are used: (a) true or (b) false?
5. An electric arc is a discharge of current across a gap in an electrical circuit. The arc is sustained in arc welding processes by the transfer of molten metal across the gap between the electrode and the work: (a) true or (b) false?
6. Which two of the following are common gases used for shielding in arc welding: (a) argon, (b) carbon monoxide, (c) fluorine, (d) flux, (e) helium, (f) hydrogen, and (g) nitrogen?
7. Which one of the following arc welding processes has the lowest heat transfer factor: (a) FCAW, (b) GMAW, (c) GTAW, or (d) SMAW?
8. Which one of the following arc welding processes uses a nonconsumable electrode: (a) FCAW, (b) GMAW, (c) GTAW, or (d) SMAW?
9. MIG welding is a term sometimes applied when referring to which one of the following processes: (a) FCAW, (b) GMAW, (c) GTAW, or (d) SMAW?
10. "Stick" welding is a term sometimes applied when referring to which one of the following processes: (a) FCAW, (b) GMAW, (c) GTAW, or (d) SMAW?
11. Which one of the following arc welding processes uses an electrode consisting of continuous consumable tubing containing flux and other ingredients in its core: (a) FCAW, (b) GMAW, (c) GTAW, or (d) SMAW?
12. Which one of the following arc-welding processes produces the highest temperatures: (a) CAW, (b) PAW, (c) SAW, or (a) TIG welding?
13. Resistance-welding processes make use of the heat generated by electrical resistance to achieve fusion of the two parts to be joined; no pressure is used in these processes, and no filler metal is added: (a) true or (b) false?
14. Metals that are easiest to weld in resistance welding are ones that have low resistivities since low resistivity assists in the flow of electrical current: (a) true or (b) false?
15. The rate of heat energy supplied in a resistance spot welding operation is determined by which one of the following equations: (a) *RH* = *ERt*, (b) *RH* = *E*2*R*, (c) *RH* = *IR*, (d) *RH* = *I*2*R*, or (e) *RH* = *I*2*Rt*, where *RH* =rate of heat energy, *E* = voltage, *I* = current, *R* = resistance, and *t* = time?
16. The fused zone between the two parts in a resistance spot welding operation is called which one of the following: (a) weld contact, (b) weld fillet, (c) weld nugget, (d) weld seam, or (e) weld spot?
17. Oxyacetylene welding is the most widely used oxyfuel welding process because acetylene mixed with an equal volume of oxygen burns hotter than any other commercially available fuel: (a) true or (b) false?
18. The term "laser" stands for "light actuated system for effective reflection": (a) true or (b) false?
19. Thermite used in thermit welding is a mixture of which two of the following powder ingredients: (a) aluminum, (b) aluminum oxide, (c) iron oxide, (d) magnesium, (e) nitroglycerine, or (f) potassium nitrate?
20. Friction stir welding is a fusion welding process in which a rotating tool is fed along the joint line between two workpieces, generating friction heat and mechanically stirring the metal to form the weld seam: (a) true or (b) false?
21. Which of the following solid-state welding processes applies heat from an external source (two best answers): (a) diffusion welding, (b) forge welding, (c) friction welding, and (d) ultrasonic welding?
22. The term weldability takes into account not only the ease with which a welding operation can be performed, but also the quality of the resulting weld: (a) true or (b) false?
23. Copper is a relatively easy metal to weld because its thermal conductivity is high: (a) true or (b) false?