1.What is welding ?

a. Material joining through the action of interaction of interatomic forces
b. Material joining through the action of interaction of intermolecular forces
c. Material joining through ionic bonding
d. Both a and b above

2. Energy applied to create a weld pool

a. Is dissipated by conduction to the base metal
b. Is dissipated by conduction to the welding fixtures
c. Is dissipated by conduction to the environment
d. All of the above

3. Which force is dominant in giving shape to the penetration profile during welding

a. surface tension induced forces
b. electromagnetic forces created by arc current and magnetic fields
c .buoyancy forces created by density differences between hot and cold metal
d. aerodynamic drag forces by gas flow on the surface of the weld

4. Cracking in weld metal can occur

a.During welding
b. After the weldment is cooled to room temperature
c. During the weld heat treatment
d. Allof the above

5. Diffusion into the metal components to be joined is required in

a. solid state welding
b. plasma arc welding
c. electron beam welding
d. laser welding

6. Rotation of one of the workpieces to be joined is required in

a. Thermit welding
b. Electro slag welding
c. Friction welding
d. Cold welding

7. A welding process in which electrical arc , resistance to flow of electricity or combustion of gases is not required to produce heat

a. cold welding
b .solid state welding
c.diffusion welding
d .thermit welding

8. Hot cracks in the base metal due to sulfur is reduced by the presence of
   a. manganese
   b. ferrite
   c. silicon
   d. carbon

9. The need for pre and post heating carbon steels may be indicated by
   a. ferrite number
   b. Carbon equivalent
   c. Martensite content
   d. Austenite content

10. To increase strength of HSLA steels nitrogen is added in amounts upto
   a. 0.2 %
   b. 0.5%
   c. 0.02%
   d. 0.06%

11. A type of steel that would exhibit a mixture of ferrite and martensite in the HAZ of a rapidly cooled weldment would be
a. SS430
b SS410
c. SS304
d. SS316

12. Low hydrogen electrodes are specified for welding steels with a carbon content
   a. More than 0.03 %
   b. More than 0.5%
   c. More than 0.9%
   d. More than 0.3%

13. The presence of boron in the steel being welded can affect weldability because it
   a. increase hardenability
   b. increases CE
   c. decrease fluidity of weld
   d. increase cooling time

14 .Nickel based hardfacing alloys
   a. increase wear resistance
   b. are highly resistant to corrosion and heat
   c. increase hardenability
   d. cannot be deposited on carbon steels

15 . Test method commonly used to test strength of spot welded joints

a. Tension shear
b. Tensile test
c. Bend test
d. Radiography

16. Pre heating of most nickel alloys is not required because the single phase crystal structure is

a. FCC
b. BCC
c. BCT
d. HCP

17 . Metal with highest resistivity and lowest conductivity

a. copper
b. iron
c. nickel
d. Titanium

18 . Susceptibility to stress corrosion cracking is generally less in

a. High purity metal
b. Martensitic microstructure
c. High CE alloys
d. HSLA steel

19. A form of base metal cracking in the HAZ of steel weldment in which the stress acts in the short transverse direction but the crack propagation direction is in the longitudinal and long transverse direction

a. HIC
b. Lamellar tearing
c. SCC
d. IGCC

20 . Defects generated by Hydrogen can be

a. Hydrogen combines with sulphur o form Hydrogen sulfide
b. Cracks in weld or HAZ
c. Both the above
d. None of the above

Answers

1. d
2. d
3. a
4. d
5. a
6. c
7. d
8. a
9. b
10. c
11. a
12. b
13. a
14. b
15. a
16. a
17. d
18. a
19. b
20. c