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1. The liquid temperature of the filler metal used in brazing is \_\_\_\_\_

- a) 150°C
- b) 427°C
- c) 723°C
- d) 1000°C

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Answer: b

Explanation: Brazing is defined as the joining of two metal pieces by using a filler metal. The liquid temperature of the filler metal is above 427°C and below the solidus of the base metal.

2. Copper and aluminum can be joined by brazing when \_\_\_\_\_ alloy is used.

- a) Copper-zinc
- b) Aluminum-silicon
- c) Copper-tellurium
- d) Aluminum-zinc

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Answer: b

Explanation: Most metals and alloys such as carbon steels, cast iron, stainless and alloy steels, brass, and others can be brazed. Aluminum and copper can also be joined if an aluminum-silicon alloy is used as the brazing filler metal.

3. Which of the following filler metals is used in the electrical industry?

- a) BAG-1
- b) BAG-3
- c) BAG-5
- d) BAG-6

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Answer: c

Explanation: Silver brazing filler alloys are used for joining most ferrous and non-ferrous metals except aluminum and magnesium. BAG-5 filler metal is composed of 44-46% Ag, 29-31% Cu, 23-27% Zn, and 0.15% of other elements. It is mostly used in the electrical industry.

4. Nickel filler metals are heat resistant up to \_\_\_\_\_ in short time service.

- a) 610°C
- b) 982°C
- c) 1204°C
- d) 1666°C

View Answer

Answer: c

Explanation: Nickel filler metals are used for their corrosion and heat resistance properties up to 982°C for continuous service and 1204°C for short time service. These are used primarily on AISI 300 and 400 series stainless steels and nickel and cobalt base alloys.

5. Which of the following filler metals is used for carbide tip brazing?

- a) BAG-1
- b) BAG-4
- c) BAG-8
- d) BAG-18

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Answer: b

Explanation: BAG-4 filler metal is used for carbide tip brazing and is composed of 39-41% Ag, 29-31% Cu, 26-30% Zn, 1.5-2.5% Ni, and 0.15% of other elements. BAG-1 freely flows into low and narrow capillary joints. BAG-8 filler metal is used in a controlled atmosphere or vacuum brazing, whereas BAG-18 is used for brazing of ferrous and non-ferrous alloys without flux.

6. Tin-zinc solders are used for joining \_\_\_\_\_

- a) Aluminum
- b) Zinc
- c) Copper
- d) Glass

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Answer: a

Explanation: Tin-zinc solders contain a varying composition of tin and zinc, each with a solidus temperature of 199. These solders are used for joining aluminum. Aluminum can also be joined using zinc-aluminum solders.

7. What is the solidus temperature of tin-lead solders?

- a) 183
- b) 297
- c) 444
- d) 604

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Answer: a

Explanation: Tin-lead solders constitute the largest portion of all solders in use. They possess good corrosion resistance to most media and can be used to join most metals. Except for the 5/95% Sn/Pb solders, all solders of this type have a solidus temperature of 183.

8. Addition of \_\_\_\_\_ increases the mechanical properties of a tin-lead solder.

- a) Bismuth
- b) Tellurium
- c) Antimony
- d) Molybdenum

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Answer: c

Explanation: Addition of antimony up to 60% of the tin content increases the mechanical properties of the solder. However, this results in a slight impairment of the soldering characteristics. Of the various solders of this type, the composition of Pb is the highest, whereas that of antimony is lowest.

9. Aluminum can be joined to another aluminum with the use of \_\_\_\_\_ solder.

- a) Lead-silver
- b) Indium-tin
- c) Cadmium-silver
- d) Fusible alloy

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Answer: c

Explanation: Cadmium-silver solders are used for joining aluminum to itself or to other metals. It is composed of 95% cadmium and 5% silver. Due to high cadmium content, improper use of this solder may lead to health hazards.

10. \_\_\_\_\_ solders are used for glass-to-glass and glass-to-metal soldering.

- a) Lead-silver
- b) Tin-zinc
- c) Cadmium-zinc
- d) Indium-tin

View Answer

Answer: d

Explanation: A 50% indium and 50% tin solder is used for glass-to-metal and glass-to-glass soldering. Cadmium-zinc and Tin-zinc solders are used for soldering and joining aluminum. Lead-zinc solders are used for soldering of copper and its alloys.