

Questions for self assessment

1. Define arc welding processes and enlist common arc welding process.
2. Explain the principle of shielded metal arc welding process with suitable schematic diagram.
3. How is weld metal protected in SMAW process?
4. What is role of welding parameters on development of sound weld joint by SMAW?
5. What is the role of coating on SMAW electrode?
6. Write common constituents used in coating of electrode along with their role?
7. What is coating factor? How does it affect the welding?
8. Explain the factors affecting the selection of type of welding current for SMAW.
9. Which type of power sources is commonly used with SMAW process and why?
10. What are common modes of metal transfer in SMAW? How does metal transfer affect the quality of the weld joint in SMAW?
11. What are factor determining the welding current and OCV in SMAW?
12. Schematically show different types of weld beads along with their application in specific welding condition.
13. Explain the principle of SAW process and its application.
14. What is the role of flux in SAW?
15. What are common types of fluxes for SAW? Write limitations and advantages of each type of the SAW flux.
16. Write factors affecting the selection of welding power sources and polarity in SAW process with justification?
17. What is role of welding parameters on development of sound weld joint by SAW?
18. Write advantages, limitations and application of SAW process.
19. Explain the principle of GTAW process and write its applications.
20. Why does GTAW offer cleanest weld among other common arc welding processes?
21. Write role of important components of GTAW process.

22. Describe factors affecting the selection of power sources and polarity in GTAW process with justification?
23. What are shielded gases used in GTAW process? Write factors affecting the effectiveness of protection of the weld pool in GTAW process.
24. What is role of welding parameters namely welding current, arc voltage and welding speed on development of sound weld joint by GTAW?
25. Write advantages, and limitations of GTAW process.
26. Explain the factors determining the current carrying capacity of electrode in GTAW process?
27. Explain principle of pulse GTAW process and mention its suitable application?
28. Describe different types of electrodes used in GTAW process.
29. Explain the effect of electrode tip angle on shape and power density distribution for GTAW process.
30. Describe the principle of initiating the GTAW arc?
31. How does pulse GTAW process help in developing sound weld joints of thin sheet?
32. How different parameters of pulse GTAW process are decided?
33. What is advantage of hot wire GTAW process? Explain the principle of GTAW process.
34. How plasma arc welding is different from GTAW process?
35. Explain the principle of PAW process using suitable schematic diagram.
36. What are the factors determine penetration capability and energy density of PAW process?
37. Distinguish the transferred and non-transferred plasma arc welding?
38. How the net heat generated for pulse GTAW can be obtained?
39. Why does GMAW process offer lesser clean weld than GTAW?
40. What are important components of GMAW process and write their role?
41. How do the shielding gases affect the metal transfer in GMAW?
42. Describe effect of welding parameters on melting rate in GMAW?
43. What are modes of metal transfer commonly observed in GMAW?

44. What is transition current? Explain the effect of various factors affecting the transition current?
45. Explain the principle of pulse GMAW and its advantages over conventional GMAW process?
46. Why brazing and soldering are called solid-liquid phase process?
47. What are common situations where brazing and soldering processes are preferred over fusion welding processes?
48. What are joint designs commonly used for brazing and soldering?
49. Compare the brazing and soldering processes in respect of various technical points?
50. Write application and limitations of brazing and soldering processes.
51. What is the role of fluxes in brazing and soldering?
52. What is the importance of clearance in brazing and soldering?
53. What is the importance of having clean faying surfaces for brazing and soldering?