G 672 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Seventh Semester

Branch : Mechanical Engineering

WELDING TECHNOLOGY (Elective I) (M)

(Old Scheme – Prior to 2010 Admissions)

[Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 4 *marks.*

1. What is the need for using figures during soldering?
2. What are the advantages of using seam welding over spot welding?
3. When will a welder use excess of oxygen in oxyacetylene welding? Explain.
4. How can Nickel and Magnesium alloys be welded?
5. What is meant by straight and reverse polarity in arc welding?
6. What is meant by submerged arc welding process?
7. What is the range of voltages used at various parts of the electron beam welding facility?
8. What is meant by cold welding?
9. Explain the importance of heat affected zone?
10. Explain how neck break and tensile tests are conducted.

(10 × 4 = 40 marks)

Part B

Answer **all** *questions.*

Each full question carries 12 *marks.*

11. (a) (i) Distinguish between Fusion welding and Solid state welding processes. Give examples.

(ii) Explain the process of forge welding.

(6 + 6 = 12 marks)

Or

(b) (i) With the help of tin-lead binary diagram, explain the process of joining during soldering.

(ii) Write briefly about aluminium brazing.

(7 + 5 = 12 marks)

Turn over

12. (a) With the help of figures, explain how acetylene can be produced for gas welding.

Or

(b) (i) Explain the various weld movements carried out during gas welding.

(ii) Explain the three types of flames used during gas welding.

(6 + 6 = 12 marks)

13. (a) Explain the process of Tungsten Inert Gas welding with the help of figures. What are its advantage over Shielded Metal Arc Welding process?

(12 marks)

Or

(b) Explain about the various power sources used for arc welding. Explain their characteristics, advantages and limitations.

(12 marks)

14. Explain the following welding process with the help of neat sketches. Write its advantages, limitations and specific applications :

(a) Plasma Arc Welding.

(12 marks)

Or

(b) Explosive Welding.

(12 marks)

15. (a) Explain any *three* non-destructive tests conducted on welded joints, with the help of figures.

(12 marks)

Or

(b) (i) How can the residual stresses in Weldments be relieved? Explain.

(ii) Explain the method of conducting impact test welded joints.

(7 + 5 = 12 marks)

[5 × 12 = 60 marks]