

B.TECH
(SEM VIII) THEORY EXAMINATION 2022-23
ADVANCE WELDING

Time: 3 Hours

Total Marks: 70

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. 2 x 7 = 14

- a. Define Welding. Compare it with other fabrication processes.
- b. Discuss HAZ.
- c. List the limitations of Manual Metal Arc Welding in comparison to MIG.
- d. Define Hardfacing and Cladding.
- e. Describe various welding symbols.
- f. Differentiate between Brazing and Soldering
- g. Differentiate between DCEP and DCEN modes.

SECTION B

2. Attempt any three of the following: 7 x 3 = 21

- a. Summarize about the voltage distribution along the arc.
- b. Explain with neat sketch Electron Beam welding. Explain the difference between electron beam welding and laser beam welding.
- c. Explain distortion in Weldment. Discuss the methods to prevent it.
- d. Explain the effect of various alloying elements on weld ability.
- e. Classify and explain various types of welds joints with suitable diagram.

SECTION C

3. Attempt any one part of the following: 7 x 1 = 7

- a. Illustrate the different types of metal transfer and their uses.
- b. Illustrate the working of transformer, rectifier and generator power sources in welding.

4. Attempt any one part of the following: 7 x 1 = 7

- a. Explain types of underwater welding and their working mechanism.
- b. Discuss the principle and working of MIG welding. List its advantages and disadvantages.

5. Attempt any one part of the following: 7 x 1 = 7

- a. Discuss the effect of weld thermal cycle on residual stresses development during welding?

- b. What are the major stresses that affect the life of weld? Discuss about peak temperature in welding?

6. Attempt any *one* part of the following:

7 x 1 = 7

- a. Write short notes on:
- a) Welding of Cast Iron
 - b) Welding of Plain Carbon Steel
 - c) Aluminium
- b. Explain Metallizing Process. Also discuss its advantages and disadvantages.

7. Attempt any *one* part of the following:

7 x 1 = 7

- a. Explain and enumerate various defects in welding with neat diagram.
- b. Discuss various types of non destructive testing and explain any one in detail.

QP23EP1_311

| 14-06-2023 08:51:04 | 27.63.133.28