

- (c) Resistance welding
- (d) Thermit welding with pressure
- 1-d. Which of the following joint have high corrosion resistance? [CO4] 1
- (a) Welding joint
- (b) Riveted joint
- (c) Bolted joint
- (d) None of the above
- 1-e. Sensors used to detect metallic parts only: [CO5] 1
- (a) Capacitive sensor
- (b) Inductive sensors
- (c) Thermocouple sensor
- (d) Photoelectric sensor

2. Attempt all parts:-

- 2.a. Define neutral flame and give its ratio? [CO1] 2
- 2.b. What is the significance on which individual defect depend on? [CO2] 2
- 2.c. What are the advantages and disadvantages of Non transferred plasma arc welding? [CO3] 2
- 2.d. What is the strength of the single fillet weld? [CO4] 2
- 2.e. Write short note on robot velocities. [CO5] 2

SECTION B

20

3. Answer any five of the following:-

- 3-a. What is the effect of preheating in welding? [CO1] 4
- 3-b. What are the similarities and differences between casting and welding process? [CO1] 4
- 3-c. List any six optical aids that are being used in visual inspection. [CO2] 4
- 3-d. What are the different methods of penetrant application? [CO2] 4
- 3.e. Explain the effect of beam focussing on penetration in electron beam welding. [CO3] 4
- 3.f. Why the cast iron is difficult to weld? [CO4] 4
- 3.g. What is meant by through the arc sensing in robotic welding? [CO5] 4

SECTION C

35

4. Answer any one of the following:-

- 4-a. With a neat sketch Explain Flux cored arc welding? [CO1] 7

4-b. Why there are residual stresses in welds, why are they undesirable? Explain. [CO1] 7

5. Answer any one of the following:-

5-a. Explain fusion penetration with neat sketch? [CO2] 7

5-b. With a neat sketch explain root cracking test? [CO2] 7

6. Answer any one of the following:-

6-a. Explain the mechanism of Diffusion bonding. [CO3] 7

6-b. Explain the key holing technique in Electron Beam Welding with a neat sketch. [CO3] 7

7. Answer any one of the following:-

7-a. Write a short note on under water repair of ship [CO4] 7

7-b. Write about the safeties to be followed in welding processes. [CO4] 7

8. Answer any one of the following:-

8-a. What is meant by controlling a welding robot. [CO5] 7

8-b. Write about the welding mechanisation. [CO5] 7

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