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Question Paper Code : 50826

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Fourth/Seventh Semester

Mechanical Engineering

ME 6008 – WELDING TECHNOLOGY

(Common to Production Engineering)

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Write the physics behind arc welding process.
2. What is electroslag welding process ? Mention its applications in heavy industries.
3. How spot welding overcomes riveting ?
4. What are the limitations of high frequency resistance welding process ?
5. Differentiate diffusion and explosion welding process.
6. Write the applications of ultrasonic welding process.
7. Name the different tool materials used for joining of high strength materials in friction stir welding process.
8. What is exothermic reaction ?
9. Select a suitable welding technique to join Al and its alloys and justify why ?
10. Sketch the welding symbol with location of elements.



PART – B

(5×13=65 Marks)

11. a) With a neat sketch explain about TIG welding process and mention its advantages.

(OR)

- b) Select a suitable welding process to join 1 inch thick plates and explain with justification.

12. a) Explain the process of resistance spot welding with neat sketch and heat input calculation.

(OR)

- b) Explain the working principles of the followings :

- i) Percussion welding.
- ii) High frequency resistance welding.

13. a) Discuss the mechanism of explosive welding with a neat sketch. Explain its limitations and applications.

(OR)

- b) Explain the effect of process variables on heat pattern at the interface and flash formation in friction welding process with suitable sketch.

14. a) Discuss the working principle of friction stir welding process with neat sketch. Also, mention some of the technologies associated with it.

(OR)

- b) Explain any one welding automation systems used in aerospace industries.

15. a) Explain the problems encountered with welding of austenitic stainless steels and what are the remedial actions.

(OR)

- b) Describe the measurement of the flaws in welded joints using ultrasonic flaw detector.

PART – C

(1×15=15 Marks)

16. a) Explain the working principle, advantage limitation and application of seam welding.

(OR)

- b) Discuss the working principle, merits, demerits and application of forge welding.
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