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Question Paper Code	12269
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Sixth Semester

Mechanical Engineering

PR8592 - WELDING TECHNOLOGY

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---|-------------------------------|
| 1. Define welding process. | <i>2,K1,CO1</i> |
| 2. Write the disadvantages of plasma arc welding. | <i>2,K1,CO1</i> |
| 3. List down the various types of resistance welding. | <i>2,K1,CO2</i> |
| 4. Write down the various metal joining process. | <i>2,K1,CO2</i> |
| 5. Define solid state welding. | <i>2,K1,CO3</i> |
| 6. Enumerate the types of solid-state welding. | <i>2,K2,CO3</i> |
| 7. Give chemical reaction in thermit welding. | <i>2,K1,CO4</i> |
| 8. Write down the principle of LBM. | <i>2,K1,CO4</i> |
| 9. List out the welding defects. | <i>2,K1,CO5</i> |
| 10. List out the various types of hardness testing. | <i>2,K1,CO5</i> |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Explain gas welding process and their equipments, advantages, disadvantages and applications. *13,K2,CO1*
- OR**
- b) Draw and explain construction and working principle of submerged arc welding. Also give advantages and disadvantages. *13,K2,CO1*
12. a) Explain the working of Resistance spot welding (RSW) and their advantages and limitations. *13,K2,CO2*
- OR**
- b) Briefly explain the construction and working of Percussion Welding and list its advantages, disadvantages and applications. *13,K2,CO2*
13. a) Explain the working principle of Explosive Welding. Write the advantages, disadvantages and applications. *13,K2,CO3*

OR

- b) Discuss the working principle of Cold Pressure Welding process with a neat sketch. 13,K2,CO3

14. a) Explain Wet Underwater Welding with a neat sketch. Give its advantages and disadvantages. 13,K2,CO4

OR

- b) Briefly explain about Atomic Hydrogen Welding with a neat sketch. 13,K2,CO4

15. a) Draw neat sketches and explain liquid penetrate testing and magnetic particle testing. 13,K2,CO5

OR

- b) With neat sketch explain the different types of welding defects, causes and remedies. 13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Explain the working of Ultrasonic Welding and their equipments in detail. Write down the process parameters involved in ultrasonic welding and explain them in details. 15,K2,CO6

OR

- b) For the structure shown in fig. determine the two fillet weld lengths L_1 and L_2 . Assume working stress in shear in fillet weld as 800kg/cm^2 and size of the fillet as 20mm. 15,K3,CO6

