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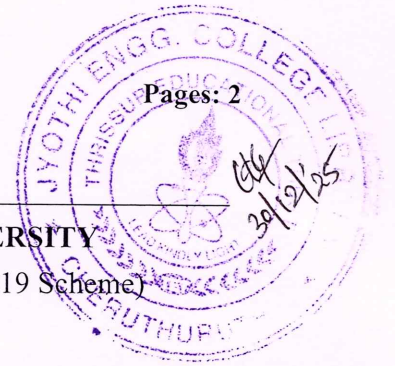
Pages: 2

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S6 (S,FE) Examination December 2025 (2019 Scheme)



Course Code: MET372

Course Name: ADVANCED METAL JOINING TECHNIQUES

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

- | | | |
|----|--|-----|
| 1 | Draw the diagram EBW gun and mark the important parts | (3) |
| 2 | Write three applications of laser beam welding | (3) |
| 3 | Write three applications of adhesive bonding | (3) |
| 4 | Write a short note on cold pressure welding equipment | (3) |
| 5 | Draw the diagram of friction welding set up and mark the important parts | (3) |
| 6 | List the different components used in explosive welding process | (3) |
| 7 | Write three applications of ultrasonic welding | (3) |
| 8 | Write three advantages of brazing | (3) |
| 9 | Explain the term MIAB in welding | (3) |
| 10 | Write three limitations of plasma arc welding | (3) |

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

- | | | |
|----|---|------|
| 11 | a) Explain the process characteristics and variables of Electron Beam Welding | (10) |
| | b) Explain the weld joint design of Electron Beam Welding | (4) |

OR

- | | | |
|----|---|------|
| 12 | a) Explain the principle of operation of laser beam welding with neat diagram | (10) |
| | b) Write a short note on carbon dioxide lasers in welding | (4) |

Module II

- | | | |
|----|---|-----|
| 13 | a) Explain the principle of diffusion welding | (8) |
| | b) List the different steps in adhesive bonding | (6) |

OR

- | | | |
|----|---|------|
| 14 | a) Explain the types of adhesives and bonding method used in adhesive welding | (10) |
| | b) Write four application of cold pressure welding | (4) |

Module III

- 15 a) Describe the different stages in explosive welding (10)
b) Explain about two process variables in friction welding (4)

OR

- 16 a) Explain the principle of operation of friction welding (10)
b) Write four applications of friction stir welding (4)

Module IV

- 17 a) Explain the working of ultrasonic welding with neat diagram (10)
b) Explain about two process parameters of ultrasonic welding (4)

OR

- 18 a) Explain the working principle of brazing (6)
b) Explain the following operations (8)
a. Torch brazing b. Vacuum brazing

Module V

- 19 a) Describe the steps involved of MIAB with neat diagram (7)
b) Explain the principle of operation of dry under water welding (7)

OR

- 20 a) Write six applications of MIAB (6)
b) Explain the principle of operation of Plasma arc welding (8)
