

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID :226232

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M. Tech. (Sem. II)
THEORY EXAMINATION, 2014-15
ADVANCED WELDING TECHNOLOGY

Time : 3 Hours]

[Total Marks : 100

Note: Attempt all questions.

1. Attempt any four of the following : 5×4=20
- (a) Explain Weldability of metals and Metallurgy of welding.
 - (b) Briefly explain the projection welding process. Also, give its advantages and disadvantages.
 - (c) What is Heat Affected Zone (HAZ)? How can they be avoided?
 - (d) Distinguish between soldering and brazing.

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(e) Explain the rule that must be followed to avoid cracking in welded joints.

(f) Explain the effects of alloying elements on weldability.

2. Attempt any two of the following: $10 \times 2 = 20$

(a) Briefly describe the various defects and distortion in welding and its causes and remedies.

(b) Describe discontinuities in weld with their causes and explain quality conflicts.

(c) Explain principles of sound weld design and material joining characteristics. *uptuonline.com*

3. Attempt any two of the following : $10 \times 2 = 20$

(a) What is Laser Beam Welding (LBW) process? With the help of a suitable sketch, explain its working. also give its limitations and scope of application.

(b) What is Electron Beam welding (EBW) process? With the help of a suitable sketch, explain its working. Also give its limitations and scope of application.

(c) What is friction welding process? Describe in brief, giving its field of Applications.

4. Attempt any two of the following :

(a) Explain manufacturing of welding longitudinal welded pipes by induction welding.

(b) Explain mechanization of I beams (arc weld) in detail with the help of figure.

(c) Explain the process of circular/ spherical welding joints.

5. Attempt any two of the following : $10 \times 2 = 20$

(a) What are the specifications for robot design and also explain the application in welding.

(b) Explain microelectronic welding and soldering and its applications. Also describe its advantage and limitations.

(c) What are the advantages of using robots for car body welding? Explain its working.

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