

Printed Pages : 3



EME022

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

PAPER ID : 140656

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15
ADVANCED WELDING TECHNOLOGY

Time : 2 Hours]

[Total Marks : 50

- Note :**
- (1) Attempt all questions.
 - (2) All questions carry equal marks.
 - (3) Be precise in your answer.

- 1 Write short notes on any four parts of the following : 2×5=10
- (a) Soldering and brazing
 - (b) Selection of welding process.
 - (c) Schaeffler and Maurer diagram
 - (d) Arc stability
 - (e) TIG and MIG welding
 - (f) Hard facing
 - (g) Life prediction of weld design.

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

- (a) Explain ultrasonic welding process, its application, advantages and disadvantages with the help of neat sketch.
- (b) What is the principle behind generation of LASER and hence describe laser beam welding ?
- (c) Explain with the suitable sketch the process of plasma arc welding.

3 Attempt any two parts of the following : $5 \times 2 = 10$

- (a) For welding the parts of a ship which is floating on a sea, which welding process will you prefer and why ? Explain the process.
- (b) What do you understand by friction welding ? Where is it suitable ? Explain its working principle with the help of neat sketch.
- (c) Explain resistance welding. How spot welding differs from projection welding ?

4 Attempt any two parts of the following : $5 \times 2 = 10$

- (a) Mention the origin of different kinds of defects in weld and suggest suitable remedial measures.
- (b) What is HAZ in welding ? Why micro alloyed steels are better in their HAZ properties than plain carbon steels ?

(c) Explain the effect of the following on a welded joints :

- (i) Alloying element
- (ii) Absorption of gases by weld
- (iii) Slag inclusion.

5 Attempt any one part of the following : $10 \times 1 = 10$

- (a) What are the various Thermal considerations for welding ? Also discuss the variation of Heating and curves.
- (b) Discuss in brief about the working principle of Explosive welding and Spray welding, with their applications.