* 0 4 9 4 / 4 0 0 0 *

Printed Pages : 3 TME – 033

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

PAPER ID : 0494 Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VIII) EXAMINATION, 2008-09

ADVANCED WELDING TECHNOLOGY

Time : 3 Hours] *[Total Marks : 100*

Note : (1) Attempt all five questions.
(2) All questions carry equal marks.
(3) Be precise in your answer.
(4) No second answer book will be provided.

1 Write short notes on any **four** of the following : **5×4**

(a) Explosive welding

(b) Modes of metal transfer

(c) Hard facing

(d) Ultrasonic welding

(e) TIG versus MIG welding

(f) Solering and Brazing

2 Answer any **two** of the following : **10×2**

(a) What is schaeffler diagram? How it can be used for the selection of electrode?

(b) Explain the principle of electron beam welding with a neat diagram. What is the mechanism of high electron penetration? What do you understand by work accelerated and self acceelrated electron gun?

(c) Explain with the help of a diagram the laser beam welding. What is the principle of a laser generation?

3 Answer any **two** of the following : **10×2**

(a) What do you mean by underwater welding? Describe in brief. How arc stability could be improved in it? What are the advantages and limitations of wet underwater welding?

(b) What is the principle behind Ultrasonic welding? Describe ultrasonic welding with a neat sketch.

(c) What is metallising process? How the surface of work must be prepared for this process ? Also describe the nature of bond between sprayed metal and work.

4 Answer any **two** of the following : **10×2**

(a) Briefly describe with neat sketches the procedure commonly followed for the welding of pipe lines on site. What is stove-pipe technique of welding pipe-lines?

(b) What are the similarities and differences between casting of metals and fusion welds?

(c) Explain in brief the various defects and distortions in welding.

5 Answer any **two** of the following : **10×2**

(a) Define weldability of materials and mention the factors on which weldability depends.

(b) What is weld decay? How can weld decay be avoided?

(c) What are the characteristics of the HAZ? Also explain the facters affecting HAZ.