Roll No. .....

23053

M. Tech. 1st Semester (Mech. Engg.)
(Manufacturing & Automation)
Examination – January, 2016
WELDING AND ALLIED PROCESSES

Paper : 832

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Compare A.C. power source welding and D.C. power source welding. 10

(b) Explain the characteristics of arc welding mechanics viz., constant current and constant voltage. 10

2. (a) Explain the difference between TIG and MIG welding process. Give the application of each. 10

(b) Explain the principal of arc welding with neat sketch. 10

3. Write detailed notes on the following with neat sketch : 10 + 10 = 20

   (i) Ultrasonic welding.

   (ii) Explosive welding.

4. (a) Discuss the method of plastic welding. What are its advantages and disadvantages ? 10

   (b) Explain the friction welding with its advantages, disadvantages and application in detail. 10

5. Explain the following with their application and advantages : 10 + 10 = 20

   (i) Thermal spraying.

   (ii) MIG surfacing method.

6. (a) Explain main features and application of under water process of welding in detail. 10

   (b) Explain the principle and operation of flame cutting. 10

7. (a) Explain the following : 5 + 5 = 10

      (i) Flexible automated welding.

      (ii) Welding Mechanization.

   (b) Explain the types of welding Robots and Robotic welding process in detail. 10

8. Explain the following : 10 + 10 = 20

   (a) Welding defects,

   (b) Welding bead geometry and shape factor,

   (c) Joint tracking system,

   (d) Robot selection mechanics in welding.
