

Total No. of Questions : 8]

SEAT No. :

PA-1532

[Total No. of Pages : 2

[5926]-152

T.E. (Mechanical / Automobile)

ADVANCED FORMING AND JOINING PROCESSES

(2019 Pattern) (Semester - I) (Elective - I) (302045A)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data if necessary.

Q1) a) Explain the following points in relation to HAZ. **[9]**

- i) Definition
- ii) Causes
- iii) Effects
- iv) Reduction of HAZ formation

b) What is Weld ability? Elaborate the various factors affecting weld ability. **[8]**

OR

Q2) a) What are the various criteria's for the characterization of the weld. Explain them in detail. **[9]**

b) What are the factors affecting weld thermal cycles. **[8]**

Q3) a) Explain with neat sketch construction & working of Ultrasonic Welding. **[9]**

b) Discuss various steps to be followed during adhesive bonding. **[9]**

OR

Q4) a) Explain with the sketch basic principle of friction stir welding. **[9]**

b) Explain with the sketch how explosive welding is carried out. **[9]**

P.T.O.

- Q5)** a) Explain the process of underwater welding. [8]
b) Explain working of Laser beam welding with neat sketch. [9]

OR

- Q6)** a) Explain the process of Electron Beam welding along with its applications. [8]
b) Write a short note on Robotic Welding. [9]

- Q7)** a) What is sustainable manufacturing and what are the drivers for sustainable Manufacturing practices. [9]
b) Explain the basic stages of conducting a Life Cycle Assessment. [9]

OR

- Q8)** a) List and Explain about the major factors that influence sustainability. [9]
b) Explain the five core elements of ISO 14000. [9]
