

Total No. of Questions : 8]

SEAT No. :

**P343**

[Total No. of Pages : 2

[6003]-424

**T.E. (Mechanical /Automobile)**

**ADVANCED FORMING AND JOINING PROCESSES**

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

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *All questions are compulsory i.e. Solve Que. 1 or Que. 2, Que. 3 or Que. 4, Que. 5 or Que. 6, Que. 7 or Que. 8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

- Q1) a)** Explain in detail, weld thermal cycles and their effects with sketches. [8]
- b)** Explain in details concept of Heat Affected Zone (HAZ) with sketches and Effects of HAZ on the different properties? [9]

OR

- Q2) a)** Explain in detail importance of effects of pre and post weld heat treatments processes? [8]
- b)** Explain in detail concept of weldability & its assessment; explain the importance of weldability. [9]

- Q3) a)** Explain with sketch, Cold pressure welding process with advantages and limitations. [9]
- b)** Explain in detail with sketch, Ultrasonic welding process features and applications. [9]

OR

- Q4) a)** Explain in detail with sketch, Explosive welding process with features and advantages. [9]
- b)** Explain in detail with sketch, Forge welding process with advantages and limitations. [9]

*P.T.O.*

**Q5) a)** Analyze with the sketch, working of Electroslag welding process and its applications. [8]

b) Explain with sketch, working principle of Electron beam welding and its applications. [9]

OR

**Q6) a)** Analyze with the sketch, working of Laser Beam welding process and its applications. [8]

b) Explain the role of welding automation in aerospace, nuclear and surface transport vehicles. [9]

**Q7) a)** Explain in detail, sustainability and drivers for sustainable development and sustainable manufacturing. [9]

b) Explain the importance of Safety norms in forming and welding also explain Socio-economic aspects related to forming and welding. [9]

OR

**Q8) a)** Explain one case study on waste recycling and one on material recycling. [9]

b) Explain various Environment protection norms and recycling techniques. [9]

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