

(3 Hours)

[Total Marks: 80]

**N.B:** 1) Question No.1 is compulsory

- 2) Attempt **any three** questions from remaining five questions
- 3) Illustrate your answers with neat sketches
- 4) Figure at right side indicate marks

**Q.1.** Write short notes on any four -

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- a) Pattern Allowances
- b) Silicon Integrated Circuits processing
- c) Rapid prototyping.
- d) Mechanism of rolling process
- e) Tool life

**Q.2 .a** Explain investment casting and give its relative merit and demerits

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b. Describe the difference between compound, progressive and Transfer Dies.

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**Q.3. a.** Explain Machinability and explain the mechanism of chip formation with suitable diagram.

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b. Explain the following term:

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- (i) Bending (ii) Embossing (iii) types of chip (iv) cutting fluid

**Q.4. a.** what are the basic element of lathe machine? Explain the function of each

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b. Explain shaping machine with neat diagram.

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c. what are the advantages and disadvantages of adhesive bonding technology ?

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**Q.5. a.** Distinguish between Brazing and Soldering

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b. Explain the basic principle of forge welding with neat sketch

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c. Explain the construction, working, application of ultrasonic machining process

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**Q.6. a.** Draw the schematic diagram of laser beam machining. What are the limitations of laser beam machining?

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b. Name the three exposure technique in photolithography and explain any one

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c. Discuss printed circuit board with suitable diagram

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