

- Note
1. All questions carry equal marks.
 2. Question number one is compulsory.
 3. Solve any three questions from remaining questions.
 4. Assume suitable data if necessary.

- Q.1 Answer **any four** of the following. 20
- i) What is high speed machining? What are the requirements of high speed machining?
 - ii) Write short note on flexible manufacturing system.
 - iii) Explain general arrangement of two plate injection mould.
 - iv) Write the difference between jigs and fixtures.
 - v) Why pilots are used on progressive die? Explain types of pilot.
 - vi) Explain principle, advantages and limitations of laser beam machining.
- Q.2 a) Explain following design principles used to jigs and fixtures. 10
- i) Fool proofing
 - ii) Burr grooves
 - iii) Ejectors
- b) What is indexing? Explain any one type of indexing jig with neat sketch. 10
- Q.3 a) Why jig should have four feet not three? 05
- b) Write the design principles used for the turning fixtures. 05
- c) What is clearance on cutting dies. What are factors affecting clearance? 05
- d) What do you mean by bending allowance? Write the factors affecting it. 05
- Q. 4 Write short note on the following.
- i) Strip layout 05
 - ii) Double action redraw die. 05
 - iii) Explain various methods of reducing cutting force in cutting die. 05
 - iv) With the neat sketch, explain the principle and working of abrasive jet machining. 05
- Q.5 a) With neat sketch explain feed system. What is the balanced feed system? Also write factors affecting runner size. 10
- b) What is ejection system? List ejection techniques and explain any one of them with neat sketch. 10
- Q.6 a) What is agile manufacturing? Also write enablers of agile manufacturing. 10
- b) Explain with neat sketch, principle, working, advantages, limitations & applications of EDM. 10
