

- 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.

- 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
