

Time : 3 hours

Marks: 80

- 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) Write the classification of automatic machines.
 - ii) Write short note on flexible manufacturing system.
 - iii) Explain general arrangement of two plate injection mould.
 - iv) Write short note on jig bushes.
 - v) Why pilots are used on progressive die? Explain types of pilot.
 - vi) Explain principle, advantages and limitations of Electron beam machining.
- Q.2 a) Explain principles used for designing jigs and fixtures. **10**
- b) With the help of neat sketch explain any three types of clamps. **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) Write the classification of presses. **05**
- d) What do you mean by bending allowance? Write the factors affecting it. **05**
- Q.4 Write short note on the following.
- i) Types of strippers. **05**
 - ii) Double action redraw die. **05**
 - iii) Combination die. **05**
 - iv) With the neat sketch, write 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 USM. **10**
