

(Time: 3Hours)

(80 Marks)

- N.B.: (1) All questions carry equal marks.
(2) Question No.1 Compulsory.
(3) Attempt any three from remaining five questions.
(3) Figures to the right indicate full marks.
(4) Draw neat sketches wherever necessary.

1. Write short notes on the following. (Any four) (20)
 - (a) Interchangeability
 - (b) Requirement of clamping system
 - (c) Redundant location
 - (d) Welding Fixture
 - (e) Application of Indexing
2. (a) Explain principles of location with the help of neat diagrams. (10)
(b) Draw and explain any five types of clamping devices used in Jigs and Fixtures. (10)
3. (a) Explain common principles applied to both Jigs and Fixtures, (10)
(b) Sketch and explain latch Jig and Channel Jig. (10)
4. (a) Design a drill jig using suitable case study. (10)
(b) With the help of neat sketches explain various types of Jig bushes. (10)
5. (a) Explain elements of milling fixture. (10)
(b) With neat sketches explain different turning fixtures. (10)
6. (a) Explain essential features of an Indexing Jigs/fixtures. (10)
(b) Describe Internal & external broaching fixtures. (10)
