

Duration 3Hrs

Max. Marks: 100

Instructions:

- (1) Question No.1 is compulsory and Answer 3 Questions remaining 5 Questions.
- (2) Assume suitable data wherever necessary
- (3) Concepts explanation with suitable case study justification
- (4) Diagram and sketches explanations are right to reserve full marks

Q1 Answer Any Four Questions

1. Integration of process and Product development system 20
2. Classification of various press tool machines with line sketches
3. Write short note on Ultra Sonic Machining (USM)
4. Explain Scrap strip Layout
5. Define Jigs and Fixtures

- Q2**
1. Explain Transfer machine machines used in industry? 10
 2. Explain various sheet metals production process with neat sketches. 10

- Q3**
1. Explain the following with neat sketches i, Locators
ii) Clamping Devices (Any Two Each) 10
 2. Explain the general arrangement of Injection plastic molding process 10

- Q4**
1. Tabulate classification of non-traditional manufacturing processes & Explain Electron Beam Machining (EBM) 10
 2. Explain Flexible Manufacturing System (FMS) 10

- Q5**
1. Explain principle, construction, working, applications, advantageous and limitations of Abrasive Jet Machining (AJM) 10
 2. Draw an economical strip layout and find out percentage utilization of material of square product. Thickness of sheet metal 1 mm (Assume side of the product is 25mm) 10

- Q6 Answer Any Two Questions** 20
1. Explain principle, construction, working, applications, advantageous and limitations of Electro chemical Machining (ECM)
 2. Agile Manufacturing System principles, procedures, implementation in Production Process
 3. Write short note on (i) Die and Punch of press tool design with neat sketches (ii) 3-2-1 Principle of Locators with neat sketches
