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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech IV Year I Semester Supplementary Examinations August-2022****METAL FORMING PROCESS**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 Develop an expression for two dimensional stress analysis. **12M**

OR

- 2 a Explain theory of Plasticity. **6M**
b Outline the elastic and plastic deformation behavior of metals. **6M**

UNIT-II

- 3 Discuss briefly the working principle and various stages in drop forging with a neat sketch. **12M**

OR

- 4 Explain the various types of Forging defects that occur in Forging operation. **12M**

UNIT-III

- 5 a Construct and explain the typical draw die used for wire drawing process. **6M**
b Explain the defects occurred in wire drawing process. **6M**

OR

- 6 a Discuss in detail about the extrusion defects with neat sketch. **6M**
b Estimate the force required for extruding a brass billet is to be extruded from its initial diameter of 100 mm to a final diameter of 50mm. The working temperature of 7000°C and extrusion constant is 250 Mpa. **6M**

UNIT-IV

- 7 Outline the working principle of stretch forming and embossing which are carried out in sheet metal work with neat sketches. **12M**

OR

- 8 a Discuss briefly about the defects in sheet metal products. **8M**
b Explain the concept of spring back in sheet metal shearing with a suitable sketch. **4M**

UNIT-V

- 9 Explain the working principle of thermoforming process with neat sketch. **12M**

OR

- 10 Discuss the working principle of Stereo lithography technique with neat sketch. **12M**

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