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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech IV Year I Semester Regular Examinations Nov/Dec 2019****METAL FORMING PROCESS****(Mechanical Engineering)**

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I****1** State and explain about Von misses yield criteria. **12M****OR****2 a** What is Strain Hardening? Explain. **6M****b** Derive the relationship between the True Strain and Engineering Strain? **6M****UNIT-II****3 a** Explain the working principle of roll forging with the help of neat sketch. **6M****b** List and elaborate the defects in rolled products. **6M****OR****4** In a single pass rolling operation a 20 mm thick plate with plate width 100 mm is reduced to 18 mm. The roller radius is 250 mm and rotation speed is 10 RPM. The average flow stress for the plate material is 300 MPa. What is the power required for the rolling operation in kW? **12M****UNIT-III****5** With a neat sketch, explain the wire drawing operation. **12M****OR****6 a** Explain the following extrusion processes: **8M**

(i) Impact extrusion. (ii) Hydrostatic extrusion.

**b** List out wire drawing defects. **4M****UNIT-IV****7** Explain any two types of high energy rate forming processes. **12M****OR****8 a** What are the force and power requirements in sheet metal operations? **6M****b** Discuss on the defects in sheet metal products. **6M****UNIT-V****9 a** Explain the concept of rapid manufacturing process. **6M****b** State the merits and applications of rapid proto typing process. **6M****OR****10** Explain the compression moulding process with a neat sketch. **12M**

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