

SIES Graduate School of Technology, Nerul

Subject: Production Process - III

Semester: V

Class: T.E.(Mechanical)

Academic Year: 2015-2016

CASE STUDY NO. 1

Choose any one of sub-topics from the below as given in Module-01 of syllabus:-

- High Speed Machines
- Special purpose machines
- Transfer lines
- Mass production machines
- Types of automats and its tooling.

Then do extensive search for literature in concern with relevant sub-topic. Then choose a further focus area based on sub-topic, do specific literature review on it and then present the same in the form of case study report. The focus area for chosen subtopic can be like Selection of a machine for given typical product, Selection of Transfer line for given conditions, Modification of transfer line for new products, Problems like bottle-necks or Productivity issues in concern with sub-topics only, etc.

Note that the references should mainly be journal papers and reference books, but may also be extended to books and websites.

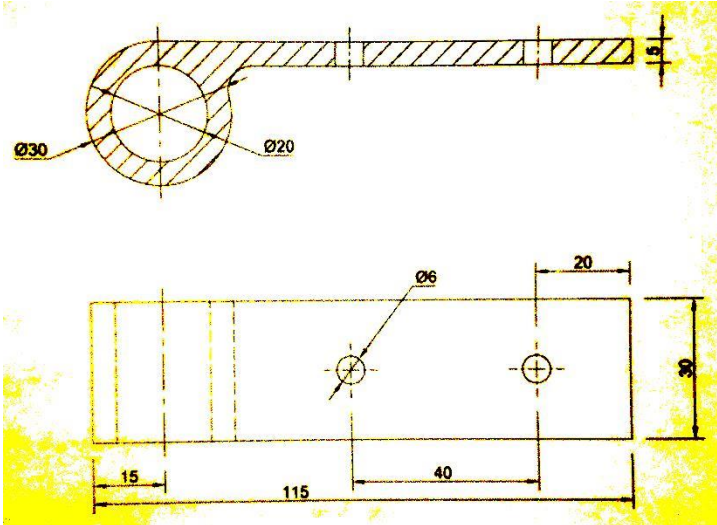
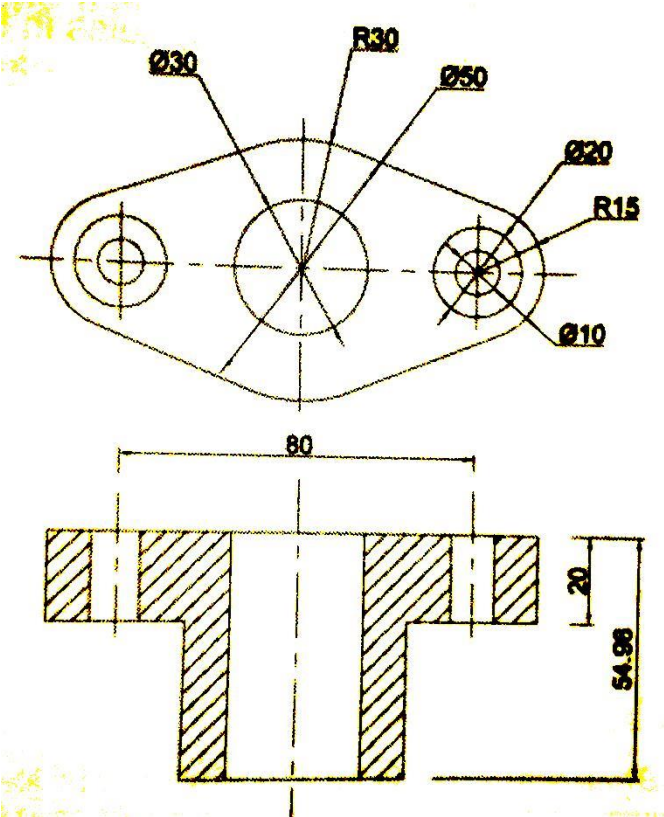
(*'Format for writing the case study'* should be followed for this case study)

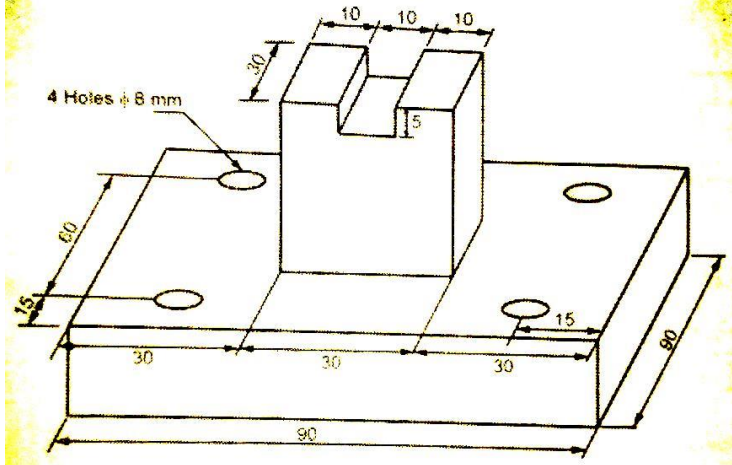
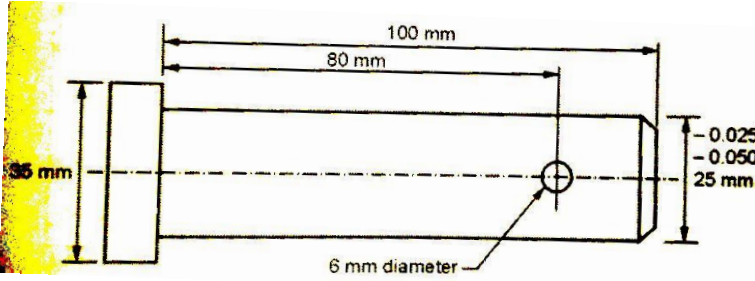
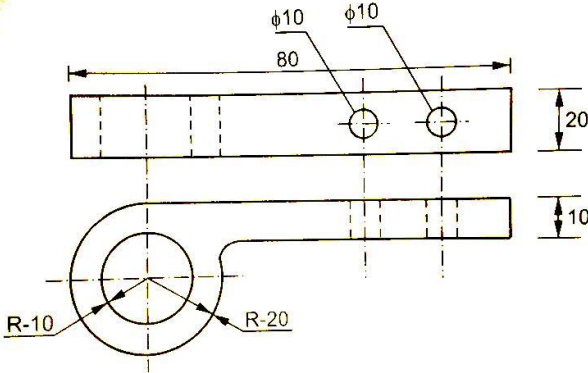
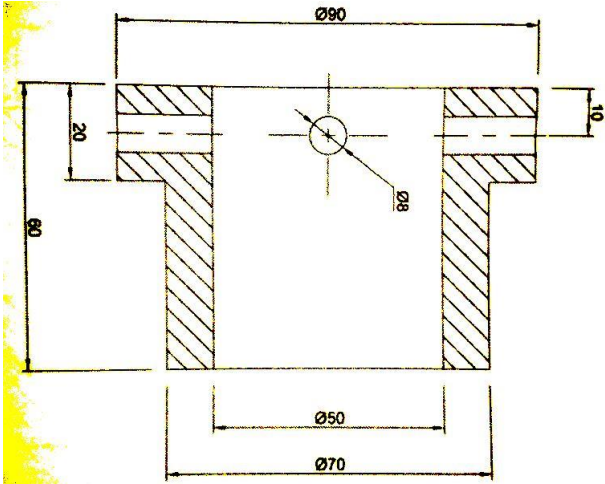
CASE STUDY NO. 2

- Q1. Find the total pressure, dimensions of tools to produce a washer 5 cm outside diameter with a 2.4 cm diameter hole, from material 4 mm thick, having a shear strength of 360 N/mm².
- Q2. A cup without flanges and of height 10 cm and diameter 5 cm is to be made from sheet metal 2.5 mm thick. Find the suitable number of draws.
- Q3. A washer with a 12.7 mm internal hole and an outside diameter of 25.4 mm is to be made from 1.5 mm thick strip of 0.2 percent carbon steel. Considering the elastic recovery of the material, find: (a) the clearance, (b) blanking die-opening size, (c) the blanking punch size, (d) the piercing punch size, and (e) the piercing die-opening size.
- Q4. A symmetrical-cup workpiece with 50 mm outside diameter, 90 mm depth and 1.6 mm inner corner radius is to be made from cold rolled steel 0.8 mm thick. Make the necessary calculations for designing the drawing die for this part.

CASE STUDY NO. 3

Design and draw jigs/fixtures for the components given below (A3/A2 size sheet).

| Sr. No. | Component | Desired feature |
|---------|--|-------------------------------|
| 1. |  | Drilling holes of $\phi 6$. |
| 2. |  | Drilling holes of $\phi 10$. |

| | | |
|-----------|--|---|
| <p>3.</p> |  | <p>Milling a slot of 10 mm width, 5 mm deep and 30 mm length.</p> |
| <p>4.</p> |  | <p>Drilling a hole of $\phi 6$ mm.</p> |
| <p>5.</p> |  | <p>Drilling holes of $\phi 10$.</p> |
| <p>6.</p> |  | <p>Drilling holes of $\phi 8$.</p> |

CASE STUDY NO. 4

Instructions same as given for CASE STUDY NO.1 are to be followed.

CASE STUDY NO. 5

Instructions same as given for CASE STUDY NO.1 are to be followed.

CASE STUDY NO. 6

Instructions same as given for CASE STUDY NO.1 are to be followed.
