

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
B. Tech. in Mechanical Engineering,
3rdYear (5th Semester)
End Term Examination, December, 2022

Course No. : ME1109
Course Title : Production Technology - II
Nature of Exam : End Term Examination
Weightage : 30%
Max Marks : 60
Duration : 180 Minutes
Date of Exam : _____

No. of Pages =	01
No. of Questions =	04

Session: _____

Note:

1. Please read through and follow all the instructions given on the cover page of the answer book.
2. Hand written notes are allowed.
3. All parts of a question should be answered consecutively.
4. Electronic gadgets including cell phones (other than calculator) not allowed during the examination.
5. All questions are compulsory.

- Q1. A manufacturer plans to manufacture a metallic block of 10 mm * 50 mm for which he has billet of size 21 mm * 25 mm. With the press of 15000 kN, whether the manufacturer will be able to obtain the required product? The tensile yield stress of the material is 13 MPa and the coefficient of friction between die and material is 0.2. (Assume if any other data required) [Marks: 15] LO: 01

- Q2. [Marks: 15] LO: 02

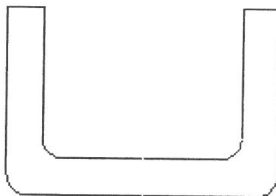


Fig.1: Cup to manufacture

A manufacturer has to manufacture the cup as shown in the Figure 1. The diameter of the blank is 500 mm and thickness is 12 mm. Determine the all dimensions of the cup (max size) that can be manufactured. Also discuss about the major components of die and punch assembly used for punching and blanking operations.

- Q3. A steel material was to turn using an orthogonal turning process, when the chip thickness is 0.6 mm, feed is 0.24 mm/rev, and rake angle is 12 degrees. Calculate the chip thickness ratio, shear angle and shear strain involved in deformation process. [Marks: 15] LO: 03
- Q4. A bolt M12 is manufactured using CNC turning machine and the material of bolt is SS304. Considering three most significant machining parameters discuss the process to obtain optimized surface roughness value. [Marks: 15] LO: 04