



DIPLOMA IN AUTOMOBILE ENGINEERING

CENTRALIZED QUESTION BANK

**4020561 – Computer Integrated Manufacturing
Practical**

**DIRECTORATE OF TECHNICAL
EDUCATION GOVERNMENT OF
TAMILNADU**

DIPLOMA END SEMESTER / YEAR EXAMINATION – 2023

Course: Automobile Engineering

Subject : Computer Integrated Manufacturing Practical

QP Code : 4020561

Time : 3 Hours

Date :

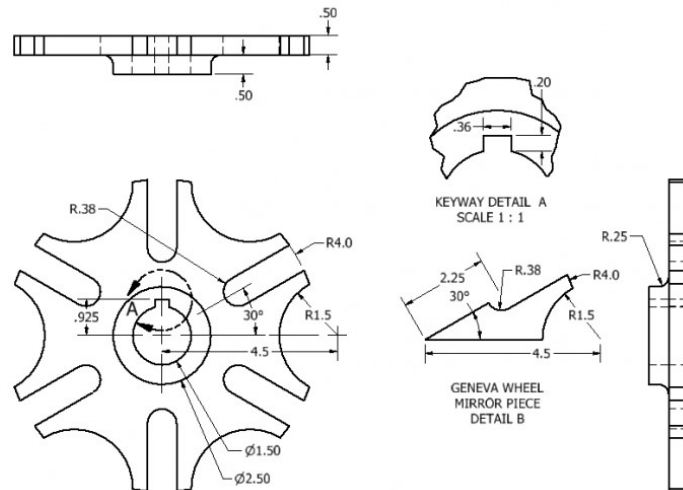
Session:

Max Marks: 100

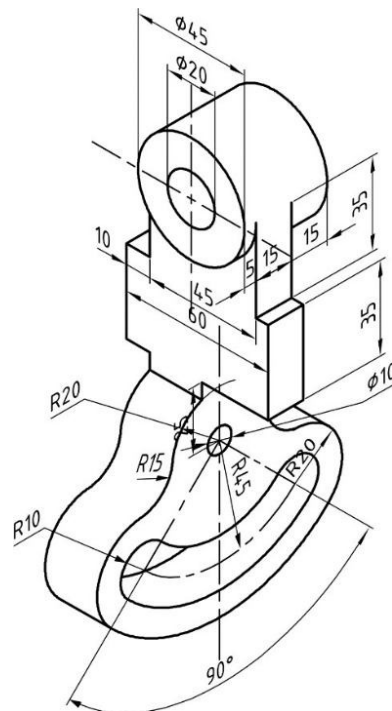
Answer the Following Questions

1. A) Create 3D Solid models of machine components using modelling software- Geneva Wheel.
 B) Using Linear and Circular interpolation- Create apart program and Produce component in the CNC Lathe Machine .Material: M.S/ Aluminium / Acrylic fibre /Plastic
2. A) Create 3D Solid models of machine components using modeling software- Bearing Block.
 B) Using Stock removal cycle–part program for multiple turning Operations and produce component in the CNC Lathe Machine. Material : M.S/ Aluminium / Acrylic fibre / Plastic
3. A) Create 3D Solid models of machine components using modeling software- Bushed bearing.
 B) Using canned cycle Create apart program for thread cutting, grooving and produce component in the CNC Lathe Machine. Material: M.S/Aluminium /Acrylic fibre /Plastic
4. A) Create 3D Solid models of machine components using modeling software- Gib and Cotter joint.
 B) Using Linear interpolation and Circular interpolation–Create apart program for grooving and produce component in the Milling Machine. Material: M.S/Aluminium /Acrylic fibre /Plastic
5. A) Create 3D Solid models of machine components using modeling software- Screw Jack.
 B) Using canned cycle-Create apart program for drilling, counter sinking and produce component in the Milling Machine. Material: M.S/Aluminium /Acrylic fibre / Plastic
6. A) Create 3D Solid models of machine components using modeling software- Universal Coupling.
 B) Using sub program- Create a part program and produce component in the Milling Machine. Material: M.S/ Aluminium / Acrylic fibre / Plastic

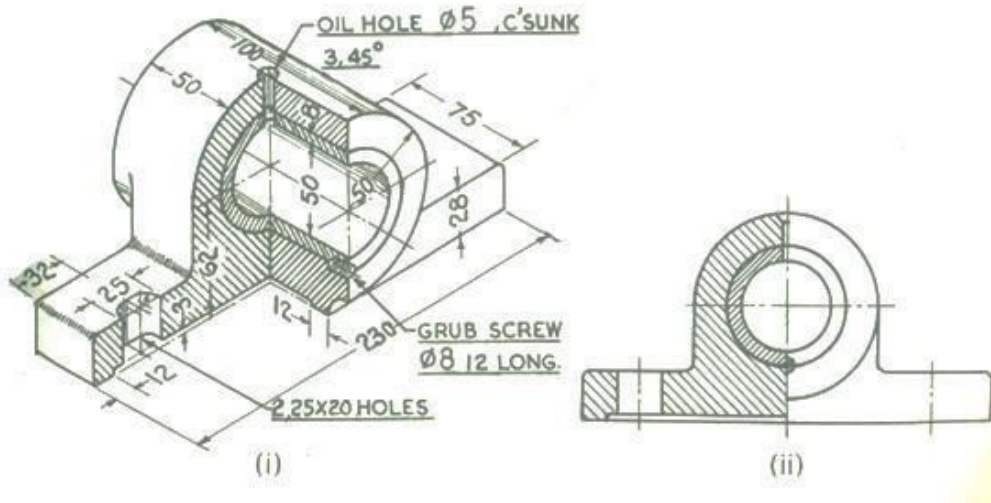
1. a. Geneva Wheel



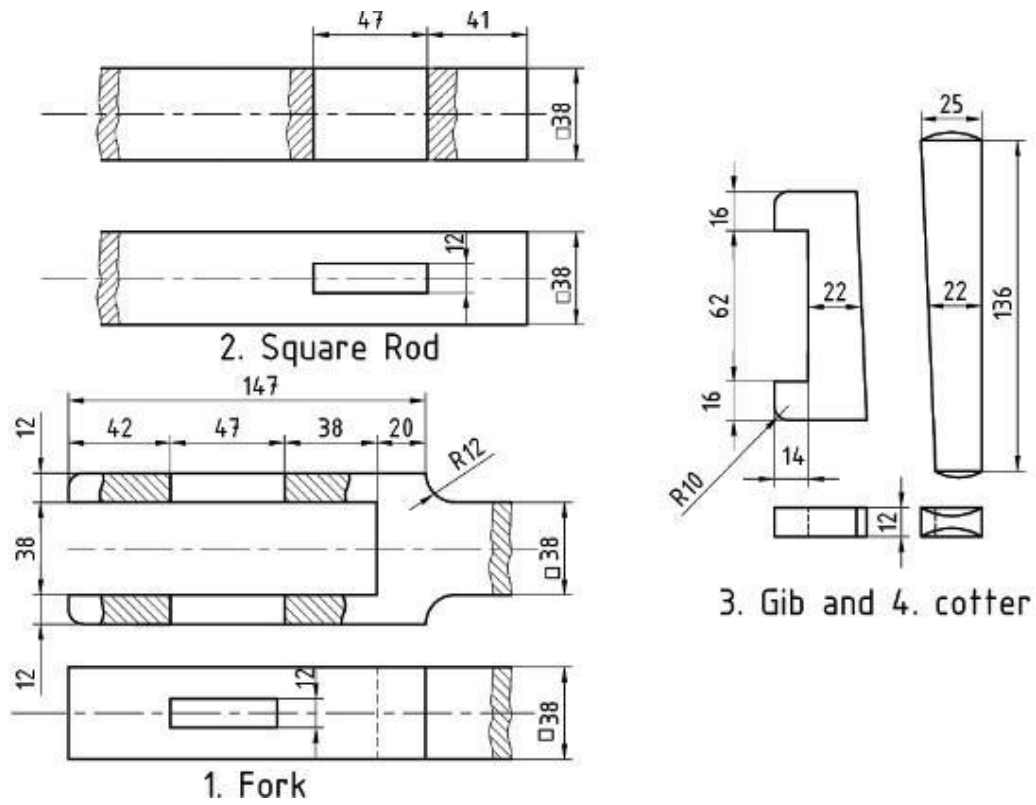
2. a. Bearing Block



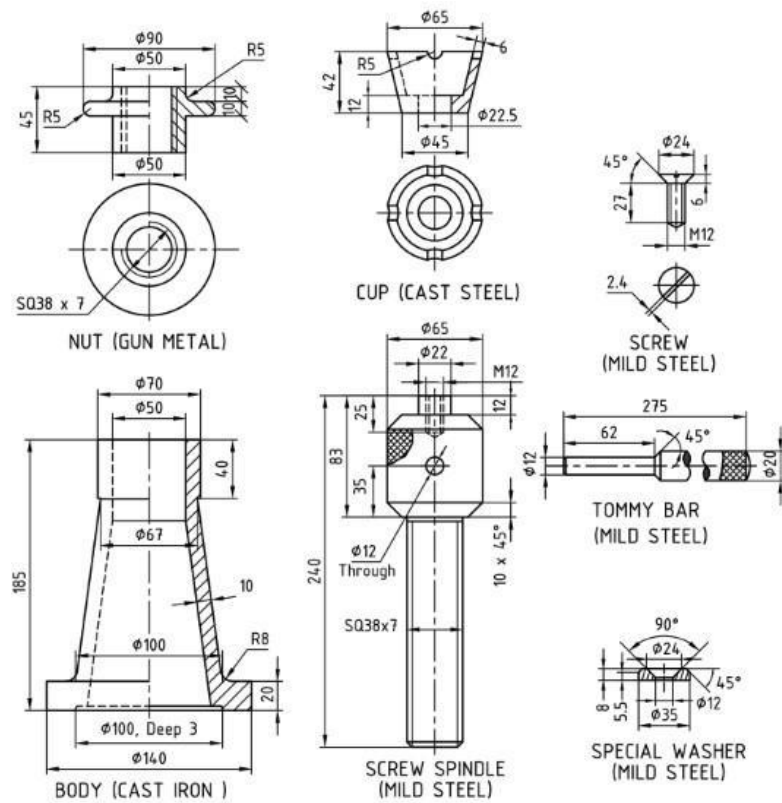
a. Bushed bearing



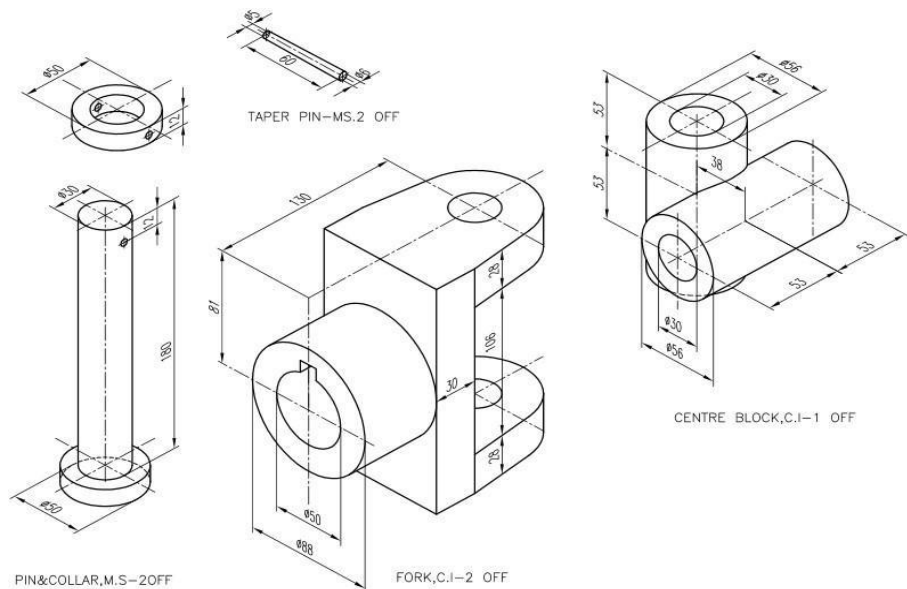
a. Gib and Cotter joint



5. a. Screw Jack



6. a. Universal Coupling



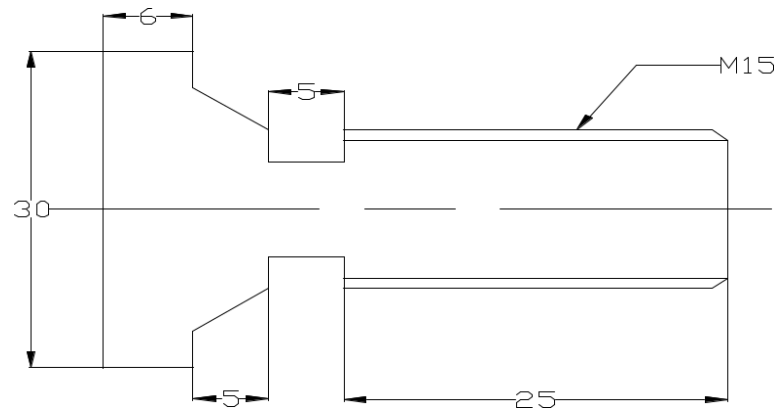
Note: Print the orthographic view and sectional view from the above assembled 3D drawing.

CNC Turning Machine Material: M.S/Aluminium /Acrylic fibre /Plastic

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- The diagram shows the orthographic projection of a mechanical part, consisting of a front view (top) and a top view (bottom).
- Front View Dimensions:**
- Top horizontal edge: 6
 - Second horizontal edge from top: 8
 - Left vertical edge: 30
 - Internal vertical edge: 23
 - Bottom horizontal edge: 5
 - Rightmost vertical edge: 22
 - Curved transition: R4 (top) and R8 (bottom)
- Top View Dimensions:**
- Left vertical edge: 6
 - Right vertical edge: 8
 - Bottom horizontal edge: 5
 - Internal horizontal edge: 23
 - Rightmost horizontal edge: 22

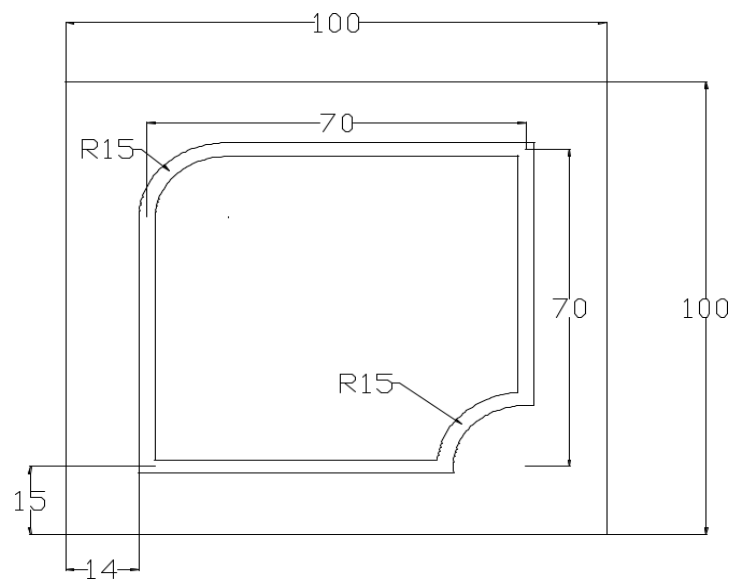
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- Technical drawing of a mechanical part with the following dimensions and features:
- Overall width: 10
 - Overall height: 31
 - Internal width: 23
 - Internal height: 14
 - Top-left corner radius: R4
 - Top-right corner radius: R4
 - Bottom-right corner radius: R8

3. b. Using canned cycle- Create a part program for thread cutting, grooving and produce component in the CNC Lathe Machine.

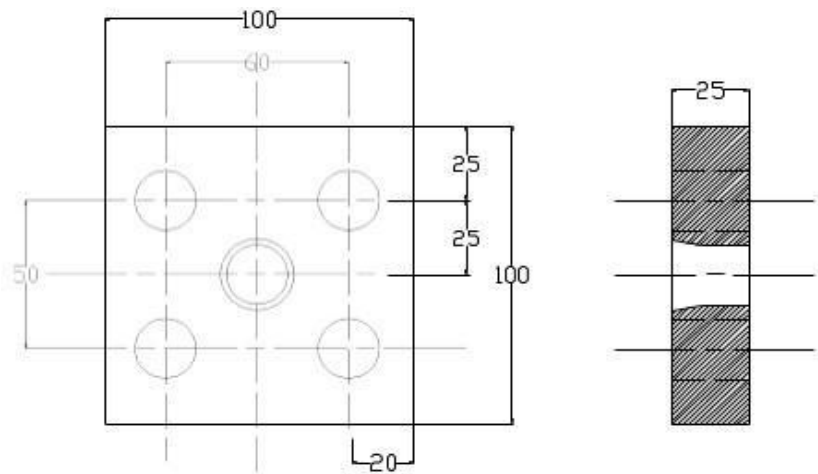


CNC Milling Machine Material: M.S/Aluminum /acrylic fibre/plastic

4. b. Using Linear interpolation and Circular interpolation- Create a part program for grooving and produce component in the Milling Machine.



5. b. Using canned cycle - Create a part program for drilling, counter sinking and produce component in the Milling Machine.



6. b. Using subprogram - Create a part program and produce component in the Milling Machine.

