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College of Engineering Pune
 (An Autonomous Institute of Govt. of Maharashtra)
END Semester Examination
(PE-306) Tool & Die Design

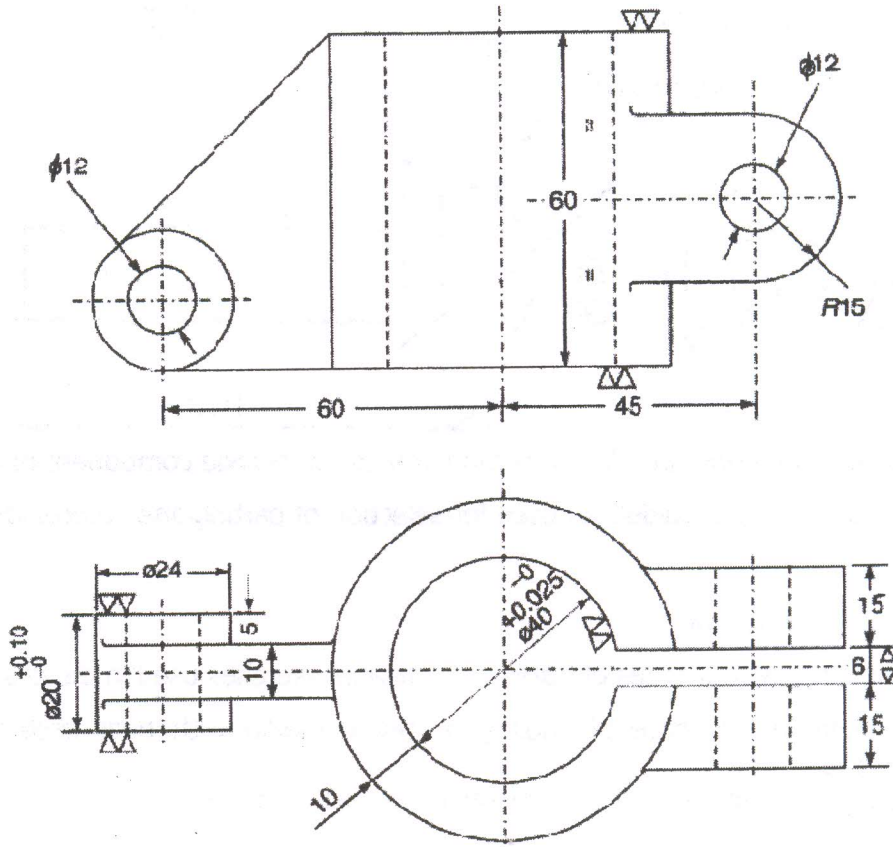
Programme: T.Y. B.Tech. (Production S/W)
 Duration: 3 hrs.

Year: 2012 - 13
 Max. Marks: 50

Instructions:

- 1) All Questions are compulsory
- 2) Neat Diagrams must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.

Q 1 a) Design a drilling jig for drilling of holes of $\phi 12$ mm for a component shown in Fig.1. 6
 Assuming this is last operation.



b) Explain different type's bushes with neat sketches. 4

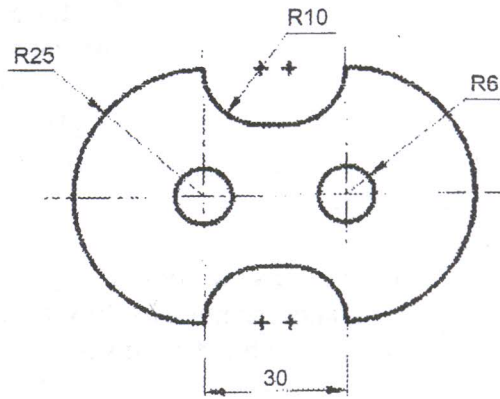
OR

c) Explain With Suitable sketch : 4
 i) Latch clamps
 ii) Equalizing clamps
 iii) Cam Operated Clamp

Q 2 a) Explain types of bending dies with suitable sketches. 3

b) What are the different defects in Drawing operation and states the different factors affecting deep drawing. 3

- c) Design a progressive die for the component shown in Figure.
 Given: Stock thickness = 2.4 mm, Shear strength of material = 285 MPa and Percentage penetration factor is 0.6.
 i) Draw best strip layout and find material utilization
 ii) Find press tonnage with full shear
 (All Dimensions are in mm)



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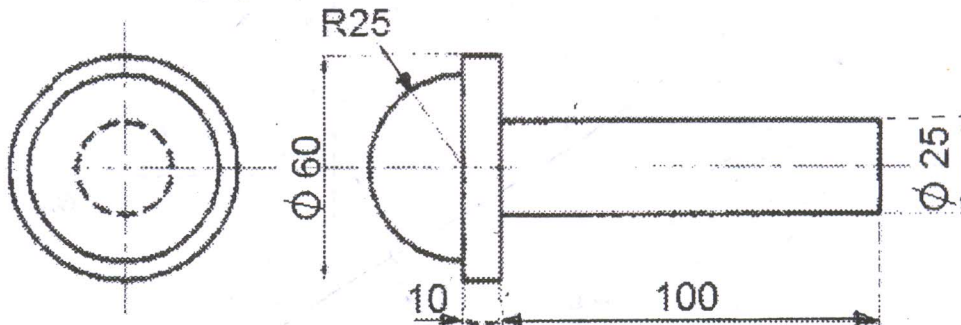
Q 3

Attempt Any Two

- a) For forging component shown in figure. Find
 1. Required stock size,
 2. Dimensions of die block
 3. Forging load.

Given:
 Yield strength = 315 N/mm²
 Flash thickness = 1 mm

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- b) What is edging? And design edging impression for the component in above figure.
 c) Discuss various guidelines used for selection of parting line in forging operation.

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Q 4

Attempt Any Two

- a) Explain any four types of gates with suitable sketches used in die casting process.
 b) Explain integer type of cooling of cavity mould with neat sketches in die casting process.
 c) Explain Solidification phenomenon in die casting process.

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Q 5

Attempt Any Two

- a) Compare transfer moulding and injection moulding.
 b) State & Describe any four types of ejection system with neat sketches used in injection Moulding.
 c) Explain Compression moulding and its application.

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