



III SEMESTER B.TECH. (AERONAUTICAL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2018

SUBJECT: AIRCRAFT PRODUCTION TECHNIQUES [AAE 2102]

REVISED CREDIT SYSTEM

(24/11/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A. Differentiate between amorphous and crystalline solids (03)
- 1B. With a neat sketch explain cold isostatic and hot isostatic pressing in powder metallurgy (04)
- 1C. Explain the mechanism of strengthening in metals (03)
- 2A. List and explain the process parameters which affects the machining in abrasive water jet machining process (03)
- 2B. List and explain the Hume Rothery rules (03)
- 2C. Write the part program for the component given in figure 1 (04)
- 3A. Explain the favorable conditions for interstitial solid solution (02)
- 3B. With a neat sketch explain the ultrasonic machining with its merits and demerits over thermal machining process. (04)
- 3C. With a neat sketch explain the binary isomorphous phase diagram with its basic equation (04)
- 4A. Write the part program for the component given in figure 2 (06)
- 4B. With a neat sketch explain the powder metallurgy process. Explain how this technique is unique compared to normal machining process. (04)
- 5A. List the different mechanism of materials removal in ultrasonic machining process (02)
- 5B. With a neat sketch explain the eutectoid reaction in iron carbon phase diagram. Explain the solidification process at 0.83% carbon (04)
- 5C. With a neat sketch explain the FCC and BCC Structures (04)

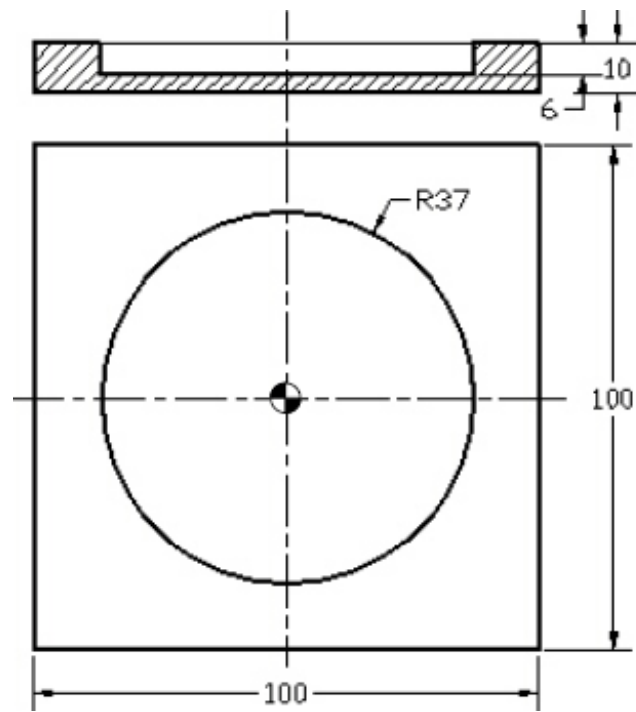


Figure: - 1

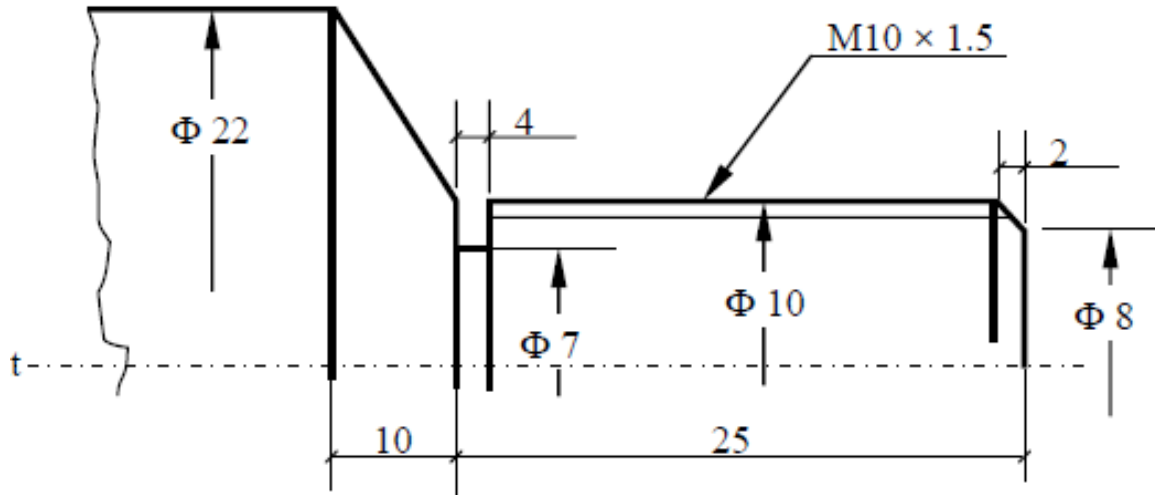


Figure: -2