B.Tech. SEM -V Mechanical 2014 Course (CBCS) : WINTER - 2018
SUBJECT: ADVANCED MANUFACTURING PROCESSES

Day: Saturday
Date: 01/12/2018

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

W-2018-2424

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.

Q.1 **a)** Define clearance, why it is provided on dies? **(05)**

b) Explain the importance of strip layout. **(05)**

OR

Q.1 **a)** Calculate the bending force for channel bending for the following data: **(05)**
Thickness of blank = 3.2mm
Bending length = 900 mm
Die radius = punch radius = 9.5 mm
Ultimate tensile strength of the material = 400 N/mm^2

b) Write the difference between blanking die and piercing die. **(05)**

Q.2 **a)** Write any five considerations to decide the clamping system in Jigs and fixtures. **(05)**

b) Explain with neat sketch the different types of latch clamps. **(05)**

OR

Q.2 **a)** Design and draw drilling JIG to drill 4 holes as shown in fig. 1. **(10)**

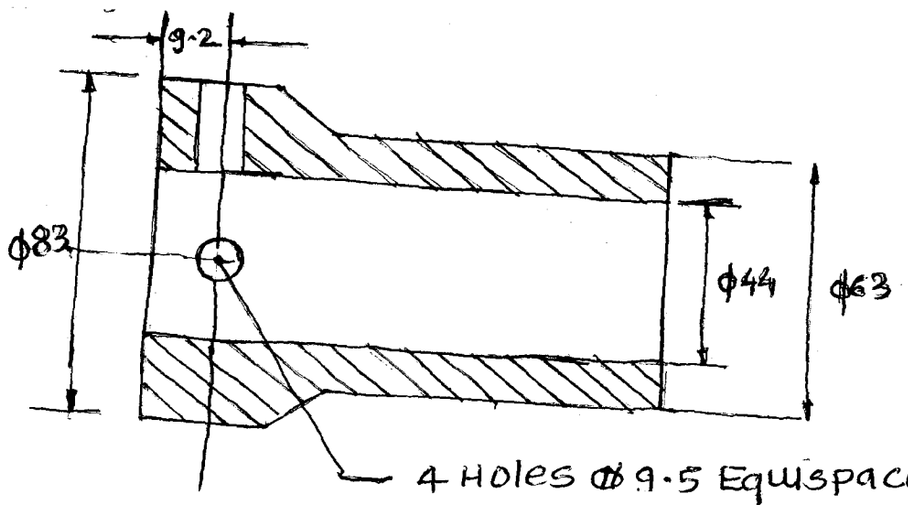


Fig 1

P. T. O.

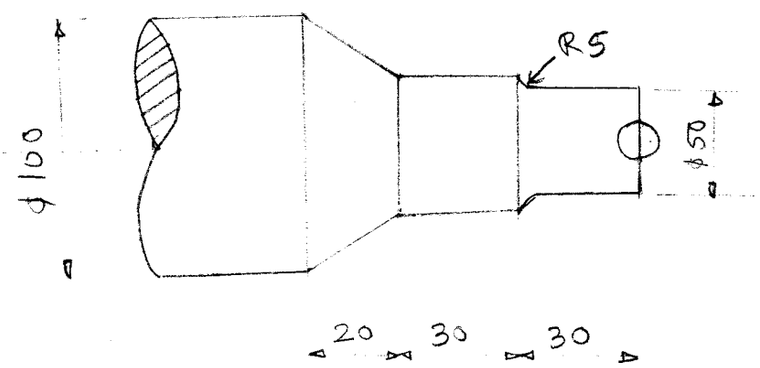
Q.3 **a)** Differentiate between conventional and non-conventional machining processes. **(05)**

b) Explain the process of Ion beam machining with neat sketch. **(05)**

OR

Q.3 Describe the process of Electro-chemical machining with neat sketch. State its working, merits, limitations and applications. **(10)**

Q.4 Write a manual part program for finishing a forged component as shown in fig.(2). Assume the speed and feed on the turning Centre is 200 rpm and 0.35 mm/rev. Assume 1mm material is to be removed racially from external diameter. **(10)**



Que 4. fig 2

OR

Q.4 What are the different types of Robots? Explain any one with neat sketch. **(10)**

Q.5 **a)** What is hardenability? How it is measured? **(05)**

b) Explain Tool steels with its classification properties and applications. **(05)**

OR

Q.5 **a)** What is Heat treatment of tool steels? **(05)**

b) Explain the process of carburizing with its working and application. **(05)**

Q.6 Explain the following techniques of powder production: **(10)**

i) Pressing
ii) Extruding

OR

Q.6 Discuss the composite materials with its constituent, advantages, limitations and applications. **(10)**

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