Total No. of Questions : 12]

SEAT No. :

P567

[Total No. of Pages : 3

[4457]-20

S.E. (Mechanical/Automobile) (Semester - II)

PRODUCTION TECHNOLOGY

(2008 Course)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates :

1) ***Answer three questions from Section I and three questions from Section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Unit - I

Q1) a) With a neat sketch show the different angles on the cutting tool. **[6]**

b) Draw Merchant's diagram with a neat labeled diagram and explain its significance. **[6]**

c) Explain in detail the different types of tool wears. **[4]**

OR

Q2) a) Explain in detail the reasons for tool wear. **[8]**

b) Explain the measurement of cutting forces with the help of dynamometer. **[8]**

Unit - II

Q3) a) What are the different types of broaching machines? **[4]**

b) Explain the gear hobbing process in detail with proper sketch. **[6]**

c) Explain the working of thread chasers and dies. **[6]**

OR

Q4) a) Discuss gear shaping and gear shaving process in detail with a neat labeled sketches. **[8]**

b) With the help of neat schematic diagram explain thread finishing process. **[8]**

P.T.O.

Unit - III

Q5) a) Write the various features of CNC machines in detail. **[6]**

b) Explain any 4, G codes used on CNC machines. **[6]**

c) Discuss difference between NC and CNC. **[6]**

OR

Q6) a) Explain with neat sketch the open loop and closed loop system in CNC machines. **[6]**

b) Compare the NC and CNC machines in detail. **[6]**

c) What is FMS? Explain in detail. **[6]**

SECTION - II

Q7) a) Explain the function of the following parts used in shearing press:- stripper plate, back up plate. **[4]**

b) Define clearance. Find the punch and die size to blank and pierce the part shown in fig.1, considering clearance 15% of stock thickness. **[6]**

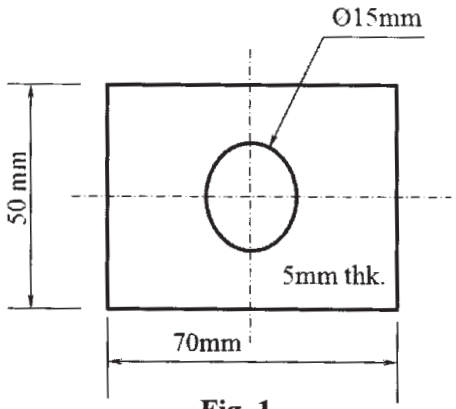


Fig. 1

c) Find the press tonnage to blank a regular pentagon shown in fig.2. How much and on which part shear have to be provided to bring the press tonnage to 75 kN, if the shear strength of material is 400 MPa and material is 3 mm thick. Percentage penetration is 40%. **[6]**

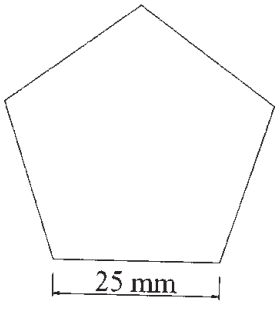
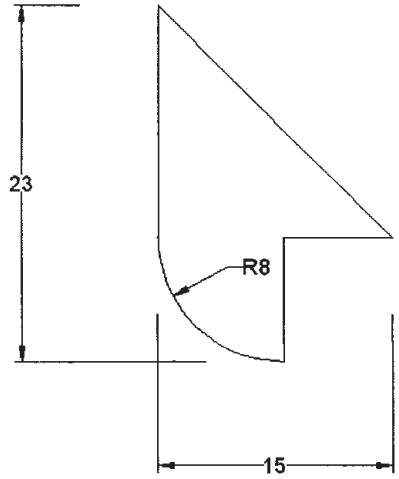


Fig. 2

OR

Q8) a) Explain the terms used in forming press :- bend allowance, spring back. **[4]**

b) Define centre of pressure. Also locate the centre of pressure for part shown in fig.



[6]

c) Sketch the general strip layout with proper labeling. Mention the importance of strip layout. **[6]**

Q9) a) Explain with neat sketch AJM, mentioning principle of machining, advantages, limitations, factors affecting MRR. **[9]**

b) Explain with neat sketch ECM, mentioning principle of machining, advantages, limitations, factors affecting MRR. **[9]**

OR

Q10) a) Explain briefly with neat sketch LBM. **[6]**

b) Explain briefly with neat sketch USM. **[6]**

c) Explain briefly with neat sketch EDM. **[6]**

Q11) a) Explain the following terms used in jigs and fixtures :- fool proof, redundancy. **[4]**

b) Explain channel jig with neat sketch. **[6]**

c) Explain turning fixture with neat sketch. **[6]**

OR

Q12) a) Explain with application the various bushes used in jig. **[4]**

b) Write a note on modular fixturing. **[6]**

c) Explain the principle of clamping and explain any two clamping with neat sketch. **[6]**