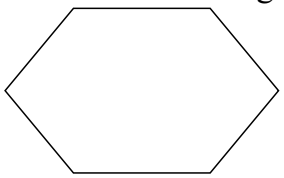
Q.26 Give five differences between blanking die & piercing die.
Q.27 Explain the term material condition with respect to cutting dies.
Q.28 Calculate the force required to cut a blank of 50 mm Dia. from 300 mm dia. And 6 mm thick Sheet having shear strength of 300N/mm2
Q.29 Explain the function of piloting and bolster plate.
Q.30 Draw a free hand sketch of simple drawing tool
Q.31 Explain the Strip Guiding with diagram.
Q.32 Describe various feeding mechanism with example.
Q.33 Draw a freehand sketch for explaining the working of a Compound die
Q.34 Give the functions of bushes and their types.
Q.35 Differentiate between bending and curling operation giving their applications.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Design and draw a die to produced sheet metal regular hexagon of 60 mm side component as shown in fig 'A'. The Component is made of Aluminium having an ultimate shear strength of 250N/mm². Your design should include:
a) Front views of the die
b) Economic strip layout.
c) Press tonnage calculations.



Q.37 Explain the following:
a) Principle of grain direction
b) Land angle
Q.38 Sketch & design a progressive die to make a steel washer 50 mm outside diameter with 40 mm hole inside, from a 4mm thick metallic sheet. The ultimate shear strength of the steel is 300 N/mm².

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3rd Sem./Branch : T&D, CNC, CAD / CAM
(6th Sem)
Subject:- Press Tool-Design and Drawing

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The following types of force is the main force in the sheet metal forming processes:
a) Shearing force
b) Compressive force
c) Tensile force
d) Indirect compressive force
Q.2 What is the function of pilot?
a) to control overfeeding and locate the material accurately
b) To prevent buckling of strip caused by the stop
c) To prevent under feeding of material in case of mechanical feeding
d) All of the above
Q.3 Which of the following methods of manufacturing is used for the production of appliances like the fridge and the vacuum cleaner?
a) Forging
b) Deep drawing
c) Sheet metal forming and cutting
d) Rolling

Q.4 Piercing is an operation of cutting
a) cylindrical hole in a sheet of metal by the punch and the die
b) a hole (other than cylindrical) in a sheet of metal by the punch and the die
c) a flat sheet to the desired shape
d) a number of holes evenly spaced in a regular pattern on a sheet of metal

Q.5 Which of the following is the application of cutting die?
a) Cutting the sheet metal in two parts
b) Removal of the desired shape from the edge of plate
c) Cutting a sheet metal in a straight line along with the length
d) All of the above

Q.6 Notching is the operation of
a) Cutting a sheet of metal in a straight line along the length
b) Removal of metal to the desired shape from the edge of a plate
c) Cutting a sheet of metal through part of its length and then bending the cut portion
d) Bending a sheet of metal along a curved axis

Q.7 In drawing which angle allows the introduction of lubricant into the working zone?
a) Entrance angle b) Die angle
c) Semi-die angle d) Relief angle

Q.8 Formula for calculating the blank diameter in drawing operation is
$D= d^2+4dh$
$D= d/2+4dh$
$D= d^2+4/dh$
$D= d^2/4(d-h)$

Q.9 Degree of drawing is given by the expression?
a) (di-df) b) (Ai-Af)
c) (Ai-Af)/Ai d) 1-((df-di))

Q.10 Which of the following are the types of stop?
a) Finger stop b) Pawl stop
c) Trigger stop d) All of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 The best cut band will be for_____of sheet thickness
Q.12 _____is the operation of straightening a curved sheet
Q.13 Plunging is the operation of bending sheet of metal along a_____axis
Q.14 Thick blank needs_____for its shearing operation.
Q.15 In a single operation in cutting and forming operations can be performed _____die
Q.16 While drawing a cup the stress in walls would be (shear/tensile/compressive)
Q.17 _____prevent buckling of strip caused by the stop
Q.18 Name any two secondary operations.
Q.19 The bending operation is best for the axis angle of _____degree
Q.20 Give one difference of notching and trimming.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Describe the working of a simple hydraulic press.
Q.22 Explain the various factors on which the Cutting clearance depends
Q.23 What are bottom & top pillars? Give their BIS standards.
Q.24 Describe the formula and importance of 'Percentage Penetration' in designing press tools.
Q.25 Give various calculations of cutting and angular clearances