Q.29 Explain the machine setup for die casting.

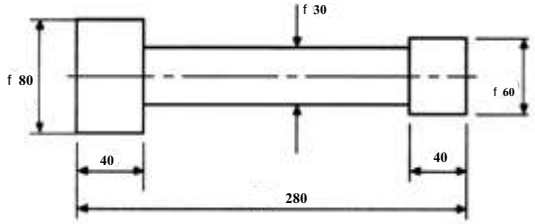
Q.30 Explain the procedure for processing of non-ferrous metal using my software package known to you.

Q.31 Write the design procedure for a double ended spanner.

Q.32 Explain Pressure die casting of multi cavity-hot chamber method.

Q.33 Describe the Die bases for pressure casting die parts.

Q.34 A component of the dimensions shown in figure by forging, by upsetting the ends of cylindrical bars of 30mm diameter. Calculate the length of bar required for upsetting the large head of the part if billet diameter is 150mm diameter. All dimensions in mm.



Q.35 Explain hammer key, shank and dowel.

SECTION-D

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

Q.36 Draw the assembly and details drawing of a die set and base taking any suitable part example.

Q.37 A round billet made of 70-30 brass is extruded at a temperature of 675C°. The billet diameter is 125mm, and the diameter of the extrusion is 50mm. Calculate the extrusion force required. Also Design and perform cost analysis & evaluation.

Q.38 Write short note on

i) fixing keys, dowel slot

ii) compare castability, hot shortness and ageing of Mild steel and cast iron.

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Roll No. .....

3rd Year / Branch : Advance Diploma in Tool and Die Making

Subject:- Tool Design Practice-IV (Forging & Casting Dies)

Time : 4Hrs. M.M. : 100

SECTION-A

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

Q.1 The plane where the two die halves meet along the forging is known as

a) Web b) Boss

c) Parting line d) Flash

Q.2 _____ is the thin section of metal remaining at bottom of a cavity or depression in a forging.

a) Web b) Boss

c) Parting line d) Flash

Q.3 _____ is the relatively short cylindrical projection on the surface of a forging.

a) Web b) Boss

c) Parting line d) Flash

Q.4 In which of the following forging process poor material utilization occurs?

a) Open die b) Closed die

c) Impression dies d) Hold dies

Q.5 _____ is the portion of the die impression that distributes metal, during forging, into areas where it is most needed to facilitate filling the cavities of sequential subsequent impressions.

a) Fuller b) Edger

c) Stock size d) Bender

Q.6 _____ is a tool designated to bend forging stock to conform to the general configuration of die impressions used subsequently.

a) Fuller b) Edger
c) Stock size d) Bender

Q.7 The die impression that imparts the final shape to a forged part is known as _____

a) Finisher b) Fuller
c) Edger d) Bender

Q.8 The Heading is a kind of which forging operation?

a) Piercing b) Embossing
c) Upsetting d) Coining

Q.9 The degree of 'looseness' with which a shaft is inserted into a bored hole

a) Limits b) Tolerance
c) Specifications d) Fits

Q.10 The _____ is the path by which the molten metal travels and fills the mould cavity.

a) Rib b) Draft angle
c) Fuller d) Runner

SECTION-B

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

Q.11 The process of producing a metal component by hammering is called _____.

Q.12 Taper applied to the vertical walls of the die cast/molded component to help easily removing the part from the die, is called _____.

Q.13 Thin internal members usually perpendicular to the web, is known as _____.

Q.14 The _____ is used to join the projection with the wall. (boss/fillet)

Q.15 The forging tool used to spread the metal more efficiently, is known as _____.

Q.16 A forging tool that approximates the general shape of the final part with an intermediate same preliminary shape.

Q.17 The tool that is used to cut off flash, around the part during forging is known as _____.

Q.18 Expand MDT.

Q.19 _____ is the total amount a dimension may vary or the difference between the upper (maximum) ad lower (minimum) limits.

Q.20 Connected channels that convey the molten metal to different parts of the mould are known as _____.

SECTION-C

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

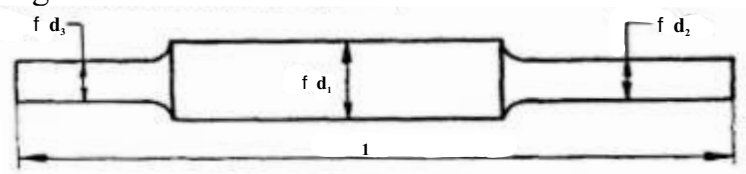
Q.21 Explain the balancing of parting line.

Q.22 Describe Die design parameters.

Q.23 Explain the sequence of performing operations.

Q.24 Differentiate of conceptual & optimum design.

Q.25 Calculate the volume of forged component as shown in figure below



The value of d3&d2=20mm; d1=50mm; The total length of component is 100mm whereas the respective lengths are |1=60mm;| 2=25mm.

Q.26 Describe a typical runner system layout.

Q.27 Explain the concept of core and cavity.

Q.28 Describe the quality and quantity requirement of components.