

- Q.23 Write short note on upsetting die operation.
  - Q.24 Write the steps of cold forging operations and their advantages.
  - Q.25 Describe various types of die impressions.
  - Q.26 Classify forging dies.
  - Q.27 Write short note on machining allowances.
  - Q.28 What do you mean by rib? Describe its function.
  - Q.29 Explain optimal design parameters for forging tools.
  - Q.30 Write the procedure to calculate material weight and volume.
  - Q.31 Write short note on maintenance of dies.
  - Q.32 Explain casting dies.
  - Q.33 Explain the terms cold and hot chamber.
  - Q.34 Write the procedure for storage of dies.
  - Q.35 Write short note on gravity die casting.

## **SECTION-D**

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

- Q.36 Explain the forging defects and their remedies with their diagrams.

Q.37 Differentiate between pressure and gravity die casting and their types.

Q.38 A strip of lead with initial dimensions 24mm X 24mm X 150mm is forged between two flat dies to a final size of 6mm X 96mm X 150mm. If the coefficient  $f$  of friction between the job and the die is 0.25, determine the maximum forging force. The average yield stress of lead in tension is  $7\text{N/mm}^2$ .

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202036

# **3rd Year / Advance Diploma in Tool and Die Making**

## **Subject:- Tool Design Theory-IV**

### **(Forging & Casting Dies)**

Time : 3Hrs.

M.M. : 100

## **SECTION-A**

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

- Q.1 The portion of die that distributes metal, during forging, into areas where it is most needed to fill the cavities of subsequent impressions in the forging sequence, is called \_\_\_\_\_

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

Q.2 Heating the material and creating bulb at one end of the material is known as \_\_\_\_\_

a) Fullering                    b) Blocking  
c) Gathering                   d) Edgering

Q.3 The die impression that imparts the final shape to a forged part is called \_\_\_\_\_

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

Q.4 The following is the forging tool

a) Flatters                    b) Tooling blocks  
c) Handle wraps              d) All of the above

Q.5 \_\_\_\_\_ are the curved parts where two surface would normally join together at a sharp angle

- a) Rib
- b) Web
- c) Fillet
- d) None of the above

Q.6 The relation between weight and volume is \_\_\_\_\_

- a) Weight/volume = density
- b) Weight/volume = weight density
- c) Weight/volume = mass density
- d) Both a and c

Q.7 In \_\_\_\_\_ die casting, the molten metal is poured directly into a semi-permanent or permanent die.

- a) Open
- b) Gravity
- c) Ladle
- d) Pressure

Q.8 \_\_\_\_\_ is a thin internal members usually perpendicular to the web, projection

- a) Web
- b) Rib
- c) Wall
- d) Boss

Q.9 \_\_\_\_\_ is a long, shaped bar of metal used as raw material for forging.

- a) Ingots
- b) Billet
- c) Angle
- d) Rib

Q.10 Which type of forging is also known as "Heading"?

- a) Upset
- b) Open die
- c) Closed die
- d) Pressure

## SECTION-B

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

Q.11 \_\_\_\_\_ a manufacturing process which involves the shaping of metal using localized impact / compressive forces.

Q.12 The forging tool, used to spread the metal is called

Q.13 The function of \_\_\_\_\_ is to enable the forming of complex shape to be finished to approximate intermediate shape.

Q.14 Function of bender in forging is to \_\_\_\_\_

Q.15 Heating the material and creating bulb at one end of the material is known as \_\_\_\_\_

Q.16 Plastic deformation of a metal by the application of a force causing that material to flow through an orifice or die is called \_\_\_\_\_

Q.17 The thin section of metal remaining at bottom of a cavity or depression in a forging are known as \_\_\_\_\_

Q.18 To cut off the flash, the part of the raw material which flowed around the part during forging is known as

Q.19 The SI unit for measuring Volume is \_\_\_\_\_

Q.20 The imitation of any real world process on computers is known as \_\_\_\_\_

## SECTION-C

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

Q.21 Explain the principle of metal flow in press forging.

Q.22 Describe various main parts of forging press.