

Please, Answer the all Following Questions:-

Q1- (24 Marks)

- a) - What are Equipment for Manual and Power Spinning?
- b) - What are effects of Speeds and Feeds for cone Spinning?
- c) - What are of Spinning on work-Metal Properties?

Q2- (24 Marks)

- a)- Explain the Failures in Rubber Pad Flanging.
- b)- What are Equipment and Accessory Equipment for all Rubber- Pad Forming processes?
- c)- What are different between Rubber- Diaphragm and Rubber Punches Forming?

Q3- (24 Marks)

- a)- What are Explosive Forming Equipment?
- b)- What are effect of Transmission Mediums upon the explosive forming processes?
- c)- What are the consideration factors of Die systems and Materials for Explosive Forming?

Q4- (24 Marks)

- a)- What are basic types of Coils and Shapers used in EMF?
- b)- What are industrial applications of EMF?

Q5- (24 Marks)

- a)- Define the following: Aspect Ratio- Bimetallic- Compocasting- and Whiskers.
- b)- A 0.5 cm bimetallic strip composed of equal thickness of Copper and Invar is heated to 100°C. Calculate the radius of curvature produced. ($\alpha_{cu}=1.7*10^{-6} \text{ cm/cm.}^{\circ}\text{C}$, $\alpha_{In}=1*10^{-6} \text{ cm/cm.}^{\circ}\text{C}$, $E_{cu}=18*10^6 \text{ Psi}$, $E_{In}=21.4*10^6 \text{ Psi}$)
- c)- What are different between *Knuckle Joint* and *toggle* presses?

Good Luck
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