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**B.Tech. (Sem. - 4<sup>th</sup>)**

**MANUFACTURING PROCESSES - II**

**SUBJECT CODE : ME - 210**

**Paper ID : [A0812]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours**

**Maximum Marks : 60**

**Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

**Section - A**

**Q1)**

**(10 × 2 = 20)**

- a) Define the term metal forming.
- b) What is the purpose of cold working processes?
- c) Differentiate between open die forging and closed die forging.
- d) How high velocity forming is different from conventional forming processes?
- e) Show a neat sketch of forward extrusion process.
- f) Enumerate three advantages of powder metallurgy process.
- g) Give two advantages and limitations of 'high speed steels' as the cutting tool materials.
- h) What is the significance of nose radius of single point cutting tool on machining performance?
- i) Enumerate various types of bonding materials employed in grinding wheels.
- j) Enumerate various broaching machines commonly employed in manufacturing industry.

**Section - B**

**(4 × 5 = 20)**

- Q2)** What do you understand by rolling process? How rolling processes can be classified. Explain two rolling processes giving their advantages and limitations.
- Q3)** Explain briefly various methods for producing powders in powder metallurgy process.
- Q4)** Explain the following forging operations with the help of neat sketches.  
(a) Upsetting (b) Punching & drifting  
(c) Drawing
- Q5)** Explain the following lathe operations with the help of neat sketches:  
(a) Facing (b) Boring  
(c) Taper turning (d) Thread Cutting
- Q6)** Describe the quick return mechanism of working of the shaper with the help of a neat sketch.

**Section - C**

**(2 × 10 = 20)**

- Q7)** (a) Explain various types of sawing machines employed in manufacturing industries.  
(b) What is purpose of using coolant in a machining operation? What are various coolants used in machining processes? How do coolants influence the machining performance?
- Q8)** Explain any two of the following sheet metal forming operations with the help of neat sketches giving their advantages and limitations.  
(a) Spinning (b) Deep Drawing (c) Bending
- Q9)** (a) What do you understand by centreless grinding? Give the applications and limitations of centreless grinding.  
(b) What is the purpose of indexing on milling machines? Explain simple and compound indexing used in milling machines.

