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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (2011 Onwards) (Sem.-4)

**MANUFACTURING PROCESSES-II**

Subject Code : BTME-405

Paper ID : [A1215]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- (a) Define extrusion process.
- (b) What do you mean by piercing?
- (c) Draw a typical die and show all the parts on it.
- (d) Define speed and feed of a boring machine.
- (e) Write the specifications of a shaper machine.
- (f) What is the effect of large rake angle of a cutting tool?
- (g) What is tool signature?
- (h) Sketch a cold rolling process.
- (i) Write the composition of HSS.
- (j) Define grit and grade for a grinding wheel.

### SECTION-B

2. Name the different cutting tool materials. Explain the composition, properties and uses of high speed steels and cemented carbides.
3. Define indexing. Differentiate between compound and differential type of indexing.
4. Explain with the help of neat sketches the up and down type of milling operations.
5. With the help of suitable sketches, explain the geometry of a single point cutting tool.
6. Explain the necessity of uses of coolants in machining operations. How coolants affect the speed, feed and depth of cut of machining?

### SECTION-C

7. Explain the principle of working and construction of a lathe machine with the help of neat diagrams.
8. (a) Draw the geometry of a twist drill and briefly explain its elements.  
(b) With the help of suitable diagrams, discuss the principle of boring.

Also differentiate between drilling and boring.

9. (a) Define powder metallurgy process. Explain the complete operation of powder metallurgy in detail by taking a suitable example.  
(b) Explain with the help of suitable diagrams the following operations : Blanking, Piercing, Coining, Embossing and Shot Peening.