Roll No. | | | | | | | | | | | | **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 have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION–A

1. Write briefly :

a) Differentiate between open and closed die forging giving three chief differences?

b) Differentiate between press forging and drop forging.

c) Give simple relation between rake angle and shear angle in orthogonal cutting.

d) What is the aim of briquetting in powder metallurgy?

e) Define machinability and machinability index.

f) How is piercing different from blanking?

g) What is the aim of sintering?

h) List five rolling defects.

i) How is coining different from squeezing?

j) What is the principle of high velocity forming?

SECTION–B

2. What are various forging defects? Give the remedies to reduce them.

3. How do you measure the forces at tool chip interface? Describe briefly.

4. Differentiate between slab milling and face milling.

5. Discuss the signature of a grinding wheel with an example.

6. What is extrusion process? How it is carried out? What is the significance of die angle?

SECTION–C

7. What is a quick return mechanism? What are the different mechanisms used for this purpose? Explain giving suitable sketches.

8. Using Taylor equation and using $n = 0.5$, $c = 400$. Calculate the percentage increase in tool life when cutting speed is reduced by 50%. Further also find out the tool life if the process is governed by the equation $VT^n f^{0.75} d^{0.35} = c$. Take the values of $f = 0.25$ mm/rev and $d = 2.5$ mm, $v = 20$ m/min.

9. A wide strip is rolled to final thickness of 6.35 mm with a reduction of 30 percent. The roll radius is 50 cm and the coefficient of friction is 0.2. Determine the neutral plane.