Roll No. Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ME-2011 Batch) (Sem.–4th)

MANUFACTURING PROCESSES-II

Subject Code : BTME-405

Paper ID : [A1215]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS 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. **Answer briefly :**

   (a) List five rolling defects and give their causes of generation.

   (b) Differentiate between Direct and Indirect Extrusion.

   (c) Describe the operative of deep drawing.

   (d) Differentiate between combination and compound die.

   (e) Give the simple relation between rake angle and shear angle.

   (f) Define machinability and machinability index.

   (g) Give the signature/classification detail for the grinding wheels.

   (h) What is the significance of Taylor's equation?

   (i) What is meant by dressing of grinding wheel?

   (j) What is the instrument used for measuring the cutting forces in machining operation? Explain its application mechanism.

SECTION-B

2. What are the common forging defects ? Giving their reasons explain how these can be reduced.

3. Explain the process of electro-hydraulic forming. Di
of this process. Also give its limitations.

4. Giving the geometry of a single point cutting to
and utility of various angles.

5. What is meant by kinematic scheme of Lathe
different schemes used for lathe gear box and lat

6. How do you specify a milling machine ? Based o
machines, discuss the specific features they have

SECTION-C

7. During machining of C-25 steel with 0-10-6-6-8-
tool, the following observations are made.

   Depth of cut = 2 mm; Feed = 0.2 mm/rev.

   Speed = 200 m/min; tangentical cutting force =

   Feed thrust force = 850 N; Chip Thickness = 0.

   Calculate

   (i) Shearforce

   (ii) Normal force at shear plane

   (iii) Friction force

   (iv) Specific cutting energy.

8. A slot of 25 mm depth is to be cut through a
with the help of HSS side and force cutter havi
and 10 teeth. The cutting speed is 50 m/min ar
Determine.

   (i) Table feed in mm/min

   (ii) Total Cutter Travel

   (iii) Time required to machine the slot.

9. Derive an expression for calculating rolling load
from first principles taking various process para