

B. E. (EE/ETC/CST/IT) First Semester Examination, 2012
Subject: Manufacturing Methodology (MEMT-1201)
First half

1. Answer any one of the following. 7¹/₂
- i) Briefly describe the different steps involved in the powder technology in sequence.
 - ii) Justify the invariant and deviatoric character of J_2 parameter, and hence establish the Von Mises' yield criteria.
2. Write short notes on 5×2
- i) Forming under direct and indirect compression.
 - ii) Hydrostatic and deviatoric force.
 - iii) Second invariant of stress deviator
 - iv) Sintering technique
 - v) Techniques for powder manufacturing

**BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR
B.E. 1ST SEMESTER (CST/EE/ETC/IT) FINAL EXAMINATION, 2012**

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SECOND HALF

Answer either question number 4 or question number 5. Answering question number 6 is compulsory.

4.a) Describe with sketch the following operations in milling machine.

(i) End milling (ii) Slab milling and (iii) Side-and-face-milling [3]

b) Briefly explain the functions of the major components of a 'Horizontal Knee and Column type milling machine' with the help of a sketch. [4 ½]

or

5. a) A mild steel rod having 40 mm diameter and 380 mm length is to be turned on a lathe. Determine the machining time to reduce the rod to 36.5 mm diameter in one pass when cutting speed is 27 m/min and a feed of 0.6 mm/revolution is used. Consider tool approach and Passover as 4mm and 3mm respectively.

[4 ½]

b) Illustrate with sketch showing two operations on components on a lathe. [3]

6. Write notes on any two:

[5x2=10]

- i) Electro Chemical Machining
- ii) Injection Moulding of Thermoplastics
- iii) Manufacturing Process Selection
- iv) Electrical Discharge Machining