MANUFACTURING PROCESSES 1 (MCL131)	B.Tech. Minor II
Max.Marks :40 Hall : LH108	Date: 24-03-2017 Time: 5.30 p.m-6.30 p.m

Answer all questions. Be brief and specific in your answers
Neat sketches and drawings carry Weightage
(Make assumptions wherever required and write the assumption wherever made)
Part A and PART B should be answered separately in the same answer book.

PART A

1	A plate of dimensions 100mmx 50mm x 5mm is plastically deformed to 125mm x 80mm x 2.5mm. Show that volume constancy can be checked by true strains but not by engineering strains.	3*2=6
2	A rigid plastic metal with linear strain hardening has a yield stress of 120 MPa and the strength coefficient is 300 MPa. Draw the flow curve and give equation for flow stress.	
3	A rod of length 10cm is pulled in tension to extend the length to 15cm in two steps (10 to 12 and 12 to 15). Show that the overall true strain can be obtained by adding the individual strains but not in the case of engineering strains.	
4	Show that in uniaxial tension, true uniform strain is equal to the strain hardening exponent for a material obeying power law of strain hardening.	4

PART B

5	Define Freezing Ratio. Comment on solidification time of a riser. Calculate the diameter of riser for the given modulus of casting Mc=3 cm. (Make suitable assumptions wherever required and write the same)	3*2=6
6	Write on pattern and sand used in shell molding	6
7	Specify the sources of hydrogen in aluminum melting and write on solubility related issues in aluminum casting	4
8	Explain the operation of stuccoing in investment casting process	4
9	Which flame is preferred for welding bronze and state the reason for your answer	4
10	Write on oxygen Lancing process	2
11	Explain the principle of powder cutting	4