Seat No.:	Enrolment No	
GUJARAT TECHNOLOG M. E SEMESTER – I • EXAMIN		
Subject code: 712802N	Date: 04-06-2013	
Subject Name: Machining Science		
Time: 10.30 am – 01.00 pm	Total Marks: 70	
Instructions:		
1. Attempt all questions.		
2. Make suitable assumptions wherever necess	ary.	
3. Figures to the right indicate full marks.		
Q-1 (a) What is machinability? Explain factors affecting machinibility.		7]
(b) Explain 1). Hysteresis effect,	[0,	-
2). Bauchinger effect with neat sketch.	•	-
Q-2 (a) Explain the geometry of twist drill with neat sket	ch. [0'	7]
(b) Derive & expression for shear angle using Lee &	shafferøs relationship. [0'	7]
OR		
Q-2 (a) Explain conversion from ASA to ORS.		7]
<b>(b)</b> Explain the measurement of shear angle based of	b slip line filed method. [0	)7
<ul><li>Q-3 (a) Explain chip formation mechanism &amp; enlist diffe</li><li>(b) Discuss concepts of rake angle measured in diffe turning operation.</li></ul>	7	_
OR		
Q-3 (a) What are the methods for measuring cutting force	es & explain any one. [0'	7]
<b>(b)</b> Explain the restrictions imposed on use of econo	mic cutting conditions. [0'	7]
Q-4 (a) Derive an expression of flow due to conduction to (b) What is tool wear? Discuss basic three causes of OR	•	
Q-4 (a) Derive equation of optimum cost based on maxin	nization of production. [0'	71
(b) Explain experimental method of determining ave		
Q-5 (a) What is the mechanics of grinding process? Expla	ain honing and lapping operation. [0'	7]
(a) Derive an expression for finding specific energy i	n grinding. [0'	71
(b) Explain various methods of measuring surface roughness.		, , )7
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