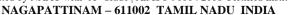


E.G.S. PILLAY ENGINEERING COLLEGE

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MODEL EXAM

Sem/Section/Year Branch Course Name Faculty Name		: VI/A/ III : B.E.(Mech. Engg.) : UCM : Dr. S. RAMABALAN	Date & Session Max. Time Course Code Max. Marks	: : 3 Hours : ME6004 : 100 marks	
Answer ALL the Questions				CO	II T ZT
Q.No. 1.	PART-A (10X2=20) Name the UCM which consumes maximum power.			CO 1	# KL K1
2.	For threading operationprocess is best suited.				K1 K1
3.	Show the effect of abrasive jet pressure and grain size on			2	K2
5.	the material removal rate in AJM process.			Z	112
4.	Differentiate AJM and sand blasting.			2	K2
5.	What is overcutting in EDM process and how it is affected			3	K2
6.	by amphere and frequency? What are the materials that cannot be used for machining in			3	K2
0.	EDM process?				112
7.	Name the electrolyte for Ti base alloys and Co-Cr base alloys.			4	K1
8.	What are the materials used for tools in ECM?			4	K2
9.	What is transferred type plasma?			5	K2
10.		e examples of solid state las	ser.	5	K1
Q.No.		PART-B (5X13=65	5)	CO#	KL
11.	(a) Explain the need for the development of UCM process by		1	K2	
	considering any four simple cases of your own interest.				
(OR)					
(b) (i) What exactly are the items that can be considered with					
	respect to the analysis of economics of various non-traditional				
	machining processes? Briefly explain. (8)				
	(ii) Make a comparison among various non-traditional				
		processes in terms of			
	Presentation in the form of table is preferred. (a)				
	Pocketing of	peration (b) Contouring oper	ration. (5)		
12.	(a) With a neat sketch explain the process of USM? List			2	K2
its applications and limitations.				_	
	(OR)				
	(b) With a neat sketch explain the process of WJM? Explain its				
	process capa	bilities with examples.			

(a) Describe wire cut EDM process. List the applications, K2 advantages and limitations. (OR) (b) Explain the working principle of EDM with a neat sketch. (ii) Explain how MRR and quality is controlled in EDM process. (5) (a) With suitable sketches, explain the working K2 14. principle of ECM process. List the advantages, disadvantages and applications of this process. (OR) (b) With a neat sketch, explain the principle of electrochemical honing. List out the advantages of EGH over conventional grinding. Mention the product application of ECG. (8+5)(a) (i) With the help of neat diagram, describe the plasma arc K2 machining process in detail. (10) (ii) List the advantages and limitations of PAM process? (3) (OR) (b) (i) Briefly explain the principle of EBM process. (10) (ii) What are the advantages and disadvantages of electron beam machining? (3) Q.No. PART-C (1X15=15) CO# KL K2 (a) (i) With the help of neat diagram, describe the AJM 16. process in detail. (10) (ii) List the advantages and limitations of AJM process? (5) (OR) (b) (i) Briefly explain the principle of LBM process. (10) (ii) What are the advantages and disadvantages of LASER beam machining? (5) **Course Outcomes:** After completion of this course, students can able to 1. Explain the need and recent trends in unconventional machining processes. 2. Use mechanical energy based unconventional machining processes. 3. Use electrical energy based unconventional machining processes.

- 4. Use chemical and electro-chemical energy based unconventional machining processes.
- **5.** Explain thermal energy based unconventional machining processes.

BT Knowledge Level: K1-Knowledge, K2-Understanding, K3-Apply, K4.Analysis, K5-Evaluate, K6-Create