Student Exam. No.____

GANPAT UNIVERSITY B.TECH. SEM. VIIITH MECHANICAL ENGINEERING **REGULAR EXAMINATION MAY/JUNE-2012 ME-803 COMPUTER AIDED MANUFACTURING**

Time: 3 Hrs]

[Total Marks: 70

Instructions:-

- Attempt all Questions. 1.
- Figure to the right indicate full marks. 2.
- Answers to the two section must be written in separate drawing papers 3.
- 4. Assume suitable data if necessary.
- 5. Draw neat sketch wherever essential.
- Programming codes (G and M Codes) are given at the end of paper 6.

		Ganibility of any manufacturing system? Explain	(4)
Q.1	(A)	What is FMS? How to measure a flexionity of any manufactures ?	
		with example.	(4)
	(B)	Write appropriate steps for Automation of wolding step	(4)
	(C)	What is numerical control? Explain function objective and fi	
		control machine tool along with suitable examples	
		The importances's of material use in structure of CNC	(4)
Q.1	(A)	Define CNC? What are the function of CNC machine tool	
		machine tool? Explain the function of eritstem? Explain types of adaptive control	(4)
	(B)	What is Adaptive control machining systems of the	
		machining system with example.	(4)
	(C)	Write a short note on Guide ways and once of	(1)
620		Will the important of Feedback device in CNC machine tool? Explain rotary	(4)
Q.2	(A)	What are the important of recourse a state	(1)
		encoder.	(4)
	(B)	What is a Storage burlet. Why been be	(1)
	(0)	State the advantage of recalculating Ball screw compared to the Acme screws	(4)
	(C)	OR OR	(1)
		Enlist various advantages of automatic storage system. How it helps us to decrease	(4)
Q.2	(A)	Lond time of manufacturing.	(4)
		Differentiate following terms:	(-)
	(P)	Differentiate reneway	
		a. WCS and MCS	
		b. JOG Mode, MDA mode and	
		c. Swing Around MCU & In house MCU III Net watering	. (4)
	10	What do you understand by the word Canned Cycle in manual part programmer	d
	10	Explain with net sketches the differences between the operations of the end	

cycles G81, G84 & G86.

Q.3

Write Following Answer



(5)



Page 2 of 4

SECTION - II

14	(4)	Explain Retrieval computer aided process planning system	(4)
2.7	(A) (B)	What is the composite part concept in Group technology? Explain it with	(4)
	(2)	example.	oni - Po
	(C)	Explain MICLASS classification and coding system of group technology.	(4)
	(.)	OR OR I and the or and the birds of a state of the birds	NOB NO
.4	(A)	Explain Generative approach of CAPP system.	(4)
	(B)	Explain DCLASS classification and coding system of group technology.	(4)
	(C)	Write down types of robot drive system with example.	(4)
		Second and positioning	09018090
.5	(A)	Explain robot arm configuration with neat sketch.	(6)
	(B)	Explain stereo- lithography process with neat sketch.	(5)
		OR	Constanting of the second
	(A)	Explain type of robot path control system with example.	(0)
	(B)	Write down SGC process with neat sketch.	(5)
			(12)
.6	(4)	What is a part family? What is the attribute use for part classification?	(12)
	(A)	What is a part family? What is the autioute use for part classification:	
	(B)	Discuss the difference between serve and non-serve robots	
	(C)	Eveloin 2D printing process with past sketch	
	(D)	Explain 5D printing process with heat sketch.	
		the set ended developing for the two of the set of the	
PRE 300 301 302 303 304	- Rap - Line - Circ - Circ - Dw	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) sular interpolation clockwise sular interpolation counterclockwise ell	105 - 500 106 - 100 108 - Cool 109 - Cool 113 - Soinc 114 - Soinc 117 - Soinc 119 - Soinc
RE 500 501 502 503 504 510 517 518 519 520 521 527 528 529 530 540 541 542	PARA - Rap - Lind - Circ - Dw - Toc - Dw - Toc - Spe - Spe - Spe - Spe - Incl - Ref - Ref - Ref - Ret - Ret - Circ - Circ - Dw - Toc - Spe - Spe - Spe - Incl - Ref - Ref - Ret - Circ - Circ - Circ - Dw - Spe - Spe - Incl - Ref - Ref - Circ - Circ - Circ - Dw - Spe - Spe - Incl - Ref - Ref - Circ - Circ - Circ - Spe - Circ - Spe - Incl - Ref - Ref - Circ - Circ - Circ - Spe - Circ - Spe - Circ - Spe - Circ - Spe - Circ - Circ - Spe - Circ - Circ - Spe - Circ - Circ - Spe - Circ - Cut	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) sular interpolation clockwise eular interpolation counterclockwise ell l length offset value cifies X/Y plane cifies X/Z plane cifies Y/Z plane cifies Y/Z plane cifies Y/Z plane cifies Y/Z plane count of some systems) ric data input (on some systems) erence point return check urn to reference point urn from reference point ter diameter compensation cancel ter diameter compensation left ter diameter compensation right	103 - Som 104 - Cool 104 - Cool 109 - Cool 113 - Spin 114 - Spin 119 - S
RE 100 102 103 104 103 104 103 104 103 104 103 104 103 104 103 104 103 104 105 105 105 105 105 105 105 105	PAR – Rap – Lind – Circ – Dw – Toc – Spe – Spe – Spe – Incl – Ref – Ref – Ret – Ret – Cut – Cut	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) pular interpolation clockwise ender interpolation counterclockwise ender X/Y plane cifies X/Z plane in data input (on some systems) erence point return check urn to reference point urn from reference point urn from reference point ter diameter compensation cancel ter diameter compensation left ter diameter compensation right h length compensation positive direction	103 - Stan 103 - Cool 103 - Cool 103 - Cool 113 - Solut 114 - Solut 117 - Solut 119 - Sol
RE 600 601 602 603 604 610 617 618 619 620 621 622 622 623 624 641 642 643 644 644 644 644 644 644 644	PAR – Rap – Lind – Circ – Dw – Toc – Dw – Toc – Spe – Spe – Spe – Spe – Ref – Ref – Ref – Ret – Cut – Cut – Cut – Toc	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) uular interpolation clockwise uular interpolation counterclockwise ell 1 length offset value cifies X/Y plane cifies X/Z plane in data input (on some systems) rice data input (on some systems) erence point return check urn to reference point urn form reference point ter diameter compensation cancel ter diameter compensation right h length compensation negative direction h length compensation negative direction	102 - 200 103 - Cool 103 - Cool 109 - Cool 113 - Spinc 117 - Spinc 119 - Spinc 120 - Spinc 199 - Renn 199
RE 00 01 02 03 04 10 17 18 19 20 21 227 528 529 530 540 541 542 544 544 544 544 544 544 544	PAR - Rap - Lind - Circ - Dw - Toc - Spe - Spe - Spe - Incl - Ref - Ref - Ref - Ref - Ref - Cut - Cut - Cut - Toc - Toc - Toc - Spe - Incl - Circ - Dw - Spe - Spe - Spe - Incl - Ref - Ref - Cut - Cut - Cut - Toc - Toc - Toc - Spe - Incl - Ref - Ref - Cut - Toc	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) oular interpolation counterclockwise oular interpolation counterclockwise early a set of the set of	02 - 200 105 - 700 105 - 700 105 - 700 113 - 500 117 - 500 119 - 500 1
RE 00 01 02 03 04 10 17 18 19 20 21 227 228 229 30 240 340 341 342 344 345 344 345 344	PAR - Rap - Lind - Circ - Dw - Toc - Dw - Toc - Spe - Spe - Spe - Spe - Ref - Ref - Ref - Ref - Ref - Cut - Cut - Cut - Toc - Toc - Toc - Spe - Spe - Spe - Spe - Spe - Toc - Spe - Spe - Net - Ref - Cut - Cut - Toc - Toc	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) pular interpolation counterclockwise pular interpolation counterclockwise ell I length offset value cifies X/Y plane cifies X/Z plane iffies X/Z plane iffies Y/Z plane indata input (on some systems) erence point return check urn to reference point urn from reference point ter diameter compensation cancel ter diameter compensation negative direction b) length compensation negative direction b) effset increase b) offset double increase	105 - 500 105 - 600 105 - 600 109 - 600 113 - 500 114 - 500 119 - 500 110 - 500 119 - 500
RE 00 01 02 03 04 10 17 18 19 20 21 228 229 30 340 341 342 344 345 346 347 348	PAR - Rap - Lind - Circ - Dw - Toc - Dw - Toc - Spe - Spe - Spe - Spe - Spe - Incl - Met - Ret - Ret - Ret - Cut - Cut - Toc - Toc	END OF PAPER ATORY FUNCTIONS (G CODES): id transverse positioning ear interpolation (federate movement) pular interpolation counterclockwise pular interpolation counterclockwise ell I length offset value cifies X/Y plane cifies X/Z plane iffies X/Z plane iffies Y/Z plane indata input (on some systems) erence point return check urn to reference point urn from reference point ter diameter compensation cancel ter diameter compensation left ter diameter compensation negative direction b) length compensation negative direction c) offset double increase b) offset double increase b) offset double increase b) offset double increase	102 - 200 103 - Cool 103 - Cool 109 - Cool 113 - Spinc 117 - Spinc 119 - Spinc 120 - Spinc 130 - Spinc 1400 - Reth 1400 - Math

G80- Canned cycle off G81- Std. drilling cycle G82- Dwell drilling cycle G83 – Peak drilling cycle G84 - Fine boring cycle G85 - Boring cycle (feed return to reference level) G86 - Boring cycle (rapid return to reference level) Explain Generative approach of G87 - Back boring cycle G88 – Boring cycle (manual return) G89 – Boring cycle (dwell before feed return) G90 - Specifies absolute positioning G91 - Specifies incremental positioning G92 - Program absolute zero point G98 - Return to initial level G99 – Return to reference (R) level.

(6)

MISCELLANEOUS (M) FUNCTIONS:

- M00 Program stop
- M01 Optional stop
- M02 End of program (rewind tape)
- M03 Spindle start clockwise
- M04 Spindle start counterclockwise
- M05 Spindle stop
- M06 Tool change
- M08 Coolant on
- M09 Coolant off
- M13 Spindle on clockwise, coolant on (on some systems)
- M14 Spindle on counterclockwise, coolant on
- M17 Spindle and coolant off (on some systems)
- M19 Spindle orient and stop
- M30 End of program, memory reset
- M98 Jump to subroutine
- M99 Return from subroutine

Page 4 of 4