Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER - II • EXAMINATION - SUMMER • 2013

Sul	bject	code: 1720807 Date: 05-06-2013		
	-	Name: Automation in Production and Hydraulic		
Tir	ne: 10	0.30 am – 01.00 pm Total Marks: 70		
Ins	struc	tions:		
	1. 2. 3.	r i i i i i i i i i i i i i i i i i i i		
Q.1	(a) (b)	Enlist different type of hopper feeder and explain any one. Compare the hard automation with a flexible automation and critically analyse with view of present production spectrum.	07 07	
Q.2	(a)	Develop an orienting device for following components. (i) Screw (ii) Cup-shaped parts	07	
	(b)	What do you mean by low cost automation? Explain above concept with suitable example.	07	
		OR		
	(b)	What is load sensitivity in vibratory bowl feeder? Enlist solution to load sensitivity.	07	
Q.3	(a)	Discuses general design guidelines for manual assembly (DFA).	07	
	(b)	Enlist indexing assembly machine. Explain rotary indexing machine (with one work head).	07	
0.2		OR	0.5	
Q.3	(a)	Explain dimension less normal track acceleration (A_n/g_n) in terms of g, a_0 , and . What should it value be for hopping to occur?	07	
	(b)	Different between adjustable parts assembly and fitted parts assembly. Give two unambiguous examples for each.		
Q.4	(a)	Give classification of positive displacement pump and explain any one with sketch.	07	
	(b)	What is sequencing valve? Draw its symbol. Explain with circuit diagram. OR	07	
Q.4	(a)	Compare hydraulic system with pneumatic system with one example.	07	
	(b)	Enlist different types of hydraulic valves and explain pressure relief valve with its symbol.		
Q.5	(a)	Draw symbols for following hydraulic elements.	07	
		(a) Telescopic cylinder (b) Check valve without spring		
		(c) 2/2 direction valve (d) Fixed displacement pump		
		(e) 4/3 direction valve (f) Unloading valve		
	(b)	(g) Pressure reducing valve Explain hydraulic cylinder with its diagram and types.	07	
	(b)	OR	U I	
Q.5 (a)		Explain in brief working of following electrical control elements with symbols. (i) Solenoids (ii) Relays	07	
	(b)	What do you mean by synchronizing circuits? Explain synchronizing with tie cylinder circuit diagram.	07	
