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GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER –VI • EXAMINATION – WINTER 2015

Subject Name: HYDRAULIC SYSTEM Time: 02:30 PM TO 05:00 PM Instructions: 1. Attempt all questions. 2. Make Suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 4. Use of programmable & Communication aids are strictly prohibited. 5. Use of only simple calculator is permitted in Mathematics. 6. English version is authentic. Q.1 Answer any seven out of ten 1 Define density. Give S.I. unit of density. 2 Define compressible fluid. Give example of compressible fluid. 3 Write the function of (a) Accumulator (b) strainer. 4 Give classification on control valve. 5 Draw neat sketch on check valve. 6 Give classification on hydraulic motor. 7 Draw neat sketch of lobe pump. 8 Write about necessity of automatic control system. 9 Draw neat sketch on hydraulic brake. 10 Give function of master cylinder and wheel cylinder in hydraulic brake. Q.2 (a) Write short note on external gear pump. 3 (b) Explain with figure single acting cylinder. OR (b) Draw neat sketch different types fixed center line mounts. Give Pascal's law and prove it. OR (b) Give limitation of hydraulic system.
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Give Pascal's law and prove it. OR
(b) Give limitation of hydraulic system.
(d) Write limitation and assumptions of Bernoulli's equation.
OR
(d) Explain with figure compound relief valve. 4
Q.3 (a) Write short note on meter out circuit.
OR
(a) List of material used for hydraulic pipe.
(b) Explain with figure balanced vane pump. 3
OR (b) List of basic hydraulic circuits.
(b) List of basic hydraulic circuits.(c) Draw circuit diagram of regenerative circuit and explain it in brief.
OR
(c) Draw circuit diagram of series piping and explain it in brief.
(d) Write short note on telescoping cylinder.

OR

	(d)	Describe briefly criteria for selecting pump.	4
Q.4	(a)	Give causes for excessive heating of oil in hydraulic system.	3
		OR	
	(a)	Write short note on Installation of cylinders.	3
(b)	(b)	Draw neat sketch constant delivery system and explain it.	4
		OR	
	(b)	Explain briefly various types of fluid flow.	4
(c)	(c)	Draw circuit diagram of two hand safety control and explain it in brief.	7
Q.5	(a)	Write advantage and disadvantage of hydraulic brake.	4
(b)	(b)	Draw I.S.O. symbols used in hydraulic circuits.	4
		I. Check valve with spring.	
(c) (d)		II. Spring loaded accumulator.	
	III. Push button.		
		IV. Hydraulic Oscillator.	
	(c)	Write short note on hydraulic jack.	3
	(d)	Write few sentence about Annual maintenance.	3