## **GUJARAT TECHNOLOGICAL UNIVERSITY** BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014

$\mathbf{DE} \cdot \mathbf{SEWIESTER} = \mathbf{IV} \cdot \mathbf{EXAMINATION} = \mathbf{SUWIWIER} \cdot 2014$			
Subject Code: 142302 Date: 20-06-2014			
Subject Name: Plastic Industrial Hydraulics and Pneumatics			
Time: 10:30 am - 01:00 pm Total Marks: 70			
Instructions:			
	1.	Attempt all questions.	
	2.	Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
Q.1	<b>(a)</b>	Explain the purposes of hydraulic fluid and their quality requirements.	07
	<b>(b)</b>	Explain the classification of pressure control valves with their symbols.	07
Q.2	(a)	Explain different seal materials.	07
<b>~·</b> -	(b)	Explain how the vane pumps work with neat sketch and write the advantages,	07
	()	limitations and applications.	
		OR	
	<b>(b)</b>	Explain the working principle and construction of external gear motor with the	07
		help of a neat sketch.	
Q.3	<b>(a)</b>	Discuss the applications of hydraulic pumps and motors in injection moulding.	07
	(b)	Explain the classification of direction control valves with their symbols.	07
		OR	
Q.3	<b>(a)</b>	What are the types of check valves? Explain in-line check valve with neat	07
		sketch.	
	<b>(b)</b>	Explain the classification of flow control valves with their symbols.	07
Q.4	(a)	What is pressure intensifier? Mention its uses and explain the single stage	07
_		pressure intensifier.	
	<b>(b</b> )	Explain the construction and mechanism of electrohydraulic servo valve.	07
		OR	
Q.4	<b>(a)</b>	Why are accumulators used? Explain the types of accumulators with neat	07
		sketches.	07
	<b>(b</b> )	Explain the working principle of multistage compressor with neat sketch.	07
Q.5	<b>(a)</b>	What is FRL unit? Explain the functions of FRL units with neat sketches.	07
	<b>(b)</b>	Compare the hydraulic and pneumatic systems.	07
o -		OR	~ -
Q.5	(a)	How the mechanical type servo valve works? Explain with neat sketch.	07
	<b>(b)</b>	Draw and Explain Injection control circuit.	07

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