Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER III(NEW) - EXAMINATION – SUMMER - 2017

Subject Code:2730807 **Date:02/05/2017**

Subject Name: OIL HYDRAULICS AND PNEUMATICS

Time:02:30 to 05:00 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	**(a)**	Which are the most important factors one should consider while selecting a hydraulic pump for a specific application?	**07**
	(b)	What are the Applications of servomotor systems in feedback control systems?	**07**
Q.2	**(a)**	Explain Various Symbols for Hydraulic and Pneumatic as per ISO/ANSI	**07**
	(b)	Explain PLC Controller with neat sketch.	**07**
		OR	
	(b)	How would you classify hydraulic Reservoirs? Differentiate between Open and closed type reservoir	**07**
Q.3	**(a)**	Define working principle and operation of pneumatic power transmission system components of FRL Unit.	**07**
	(b)	"A pneumatic power transmission is preferred as a central power supply for a large factory/plant." Justify this statement. Also, describe each component of Central power source?	**07**
		OR	
Q.3	**(a)**	What is meant by a 4/3 DC valve? State the art of actuation of direction control valves. What are the functions of a spring in valve actuation? Explain with examples.	**07**
	(b)	What is pump ripple? Why does pump ripple occur in a pump? What is the advantage of using an odd number of piston in a piston pump compared to even number of piston?	**07**
Q.4	**(a)**	State and explain the merits and demerits of oil hydraulic power transmission.	**07**
	(b)	Draw meter in & meter out circuit giving a suitable example.	**07**
		OR	
Q.4	**(a)**	Explain the working principle of a PLC with neat block diagram.	**07**
	(b)	What is the purpose of a pressure relief valve? How does a pressure relief valve work? Explain with the help of a neat schematic diagram, the construction and working of the pressure relief valve.	**07**
Q.5	**(a)**	Define Working Principal & Operation of Single and Double Stage Servo Valve.	**07**
	(b)	Why do you prefer the reciprocating pumps over rotary pumps? With the help of a neat sketch, explain the working principal of an inline piston pump.	**07**
		OR	
Q.5	**(a)**	With the help of circuit diagrams. Explain the applications of accumulator. Also illustrate its type.	**07**
	(b)	Explain sequential circuit with neat sketch.	**07**

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