

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-IV (New) • EXAMINATION – WINTER 2016**

**Subject Code:2142302**

**Date:22/11/2016**

**Subject Name: Industrial Hydraulics and Pneumatics**

**Time:02:30 PM 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.

		MARKS
<b>Q.1</b>	<b>Short Questions</b>	<b>14</b>
	1 _____ valve permit free flow in one direction and block return flow until open by pilot signal.	
	2 In check valve ,the pressure required to overcome the spring tension and open the valve is called _____	
	3 Define Hydraulics	
	4 Define Pneumatics	
	5 The input component of the hydraulic power transmission system is called a _____ and the output component is called an _____	
	6 Define servo valves.	
	7 List the various forms of energy are found in hydraulic system.	
	8 What is prime mover?	
	9 Define work and Power.	
	10 List the types of Check valves.	
	11 Draw the symbol of Two way valve.	
	12 Define Kinetic Energy.	
	13 A tank volume of hydraulic system is generally kept _____ times more than pump drawing capacity per minute.	
	14 Unit of work done is _____	
<b>Q.2</b>	(a) What are the advantages of Hydraulics?	<b>03</b>
	(b) What are the disadvantages of Hydraulics?	<b>04</b>
	(c) Compare: Hydraulics and Pneumatics	<b>07</b>
	<b>OR</b>	
	(c) Define and Explain Bernoulli's Principle with example.	<b>07</b>
<b>Q.3</b>	(a) Explain about Packing and seals in brief.	<b>03</b>
	(b) What are the applications of Pneumatics?	<b>04</b>
	(c) Explain Pilot operated check valve with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) What is the purpose of Heat Exchanger?	<b>03</b>
	(b) What is Accumulator? List the types of Accumulator.	<b>04</b>
	(c) Explain the ideal characteristics require for hydraulic oil.	<b>07</b>
<b>Q.4</b>	(a) What are the different parts of an air compressor?	<b>03</b>
	(b) Give the classification of Pumps.	<b>04</b>
	(c) Explain any one Pump in detail with neat sketch.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Short note: Pressure Gauge	<b>03</b>

- (b) Draw symbols of the following: (1) Line, Passing (2) Cylinder, Double Acting (3) Check Valve (4) Temperature Gauge **04**
- (c) Explain Four way valve in detail with neat sketch. **07**
- Q.5** (a) List the types of connectors. Explain any one in brief. **03**
- (b) Compare: Filters and strainers. **04**
- (c) Draw and explain Deceleration circuit. **07**
- OR**
- Q.5** (a) Draw any one Pneumatic circuit for plastic processing industry. **03**
- (b) Define and explain Pascal's law with suitable example. **04**
- (c) Explain about counter balance type pressure control in detail. **07**

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