

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016**

**Subject Code:2142302****Date:03/06/2016****Subject Name:Industrial Hydraulics and Pneumatics****Time:10:30 AM to 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.

		MARKS
<b>Q.1</b>	<b>Short Questions</b>	<b>14</b>
1	List the various forms of energy are found in hydraulic system.	
2	The study of pneumatics deals with the use and characteristic of _____.	
3	The input component of hydraulic power transmission system is called _____ and out component is called an _____	
4	_____ seal is used to prevent leakage of oil between the parts that are moving with one another.	
5	In check valve pressure require to overcome the spring tension and open the valve is called _____.	
6	_____ is a device for removal of solid from fluid a fluid, where resistance to motion of such solids is a straight line.	
7	What is connectors?	
8	Define servo valves.	
9	Define Power. State unit of Power.	
10	Draw the symbol of Line-Passing	
11	Draw the symbol of check valve	
12	Draw the symbol of Accumulator, spring loaded.	
13	A tank volume of hydraulic system is generally kept _____ times more than pump drawing capacity per minute.	
14	Draw the symbol of Line-Passing	
<b>Q.2</b>	(a) List and explain in brief about ideal characteristic required for hydraulic oil.	<b>03</b>
	(b) Compare: Hydraulics with Pneumatics	<b>04</b>
	(c) List advantages and disadvantages of Hudraulics.	<b>07</b>
	<b>OR</b>	
	(c) What is servo valve? Explain mechanical servo valve in detail.	<b>07</b>
<b>Q.3</b>	(a) Explain in brief: Reservoir	<b>03</b>
	(b) Short note: Pressure Gauge	<b>04</b>
	(c) Define and explain Pascal's law with suitable example.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Give classification of Pump.	<b>03</b>
	(b) Explain in brief about volumetric efficiency of Pump.	<b>04</b>
	(c) Explain about external gear pump in detail with neat sketch.	<b>07</b>
<b>Q.4</b>	(a) What is accumulator? List its types.	<b>03</b>
	(b) Explain any one accumulator in detail.	<b>04</b>

- (c) Explain pilot operated check valve in detail. **07**
- OR**
- Q.4** (a) Explain about packing and seals in brief. **03**  
 (b) List the types of connectors. Explain any one in brief/ **04**  
 (c) Explain construction and working of four way valve in detail with neat sketch. **07**
- Q.5** (a) Define check valve. Give classification of check valve. **03**  
 (b) Solve: In a hydraulic jack system pumping piston diameter is 50 mm and force applied is 50 kg. Find out the force transmitted by jack if the jack piston diameter is 200 mm **04**  
 (c) Draw and explain Deceleration circuit. **07**
- OR**
- Q.5** (a) What is Intensifiers? What is the purpose of intensifiers in hydraulic system? List the types of it. **03**  
 (b) Explain any type of air-compressor in brief. **04**  
 (c) Explain about counter balance type pressure control in detail. **07**

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