

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
Q.1	Short Questions	14
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 _____	
Q.2	(a) What are the advantages of Hydraulics?	03
	(b) What are the disadvantages of Hydraulics?	04
	(c) Compare: Hydraulics and Pneumatics	07
	OR	
	(c) Define and Explain Bernoulli's Principle with example.	07
Q.3	(a) Explain about Packing and seals in brief.	03
	(b) What are the applications of Pneumatics?	04
	(c) Explain Pilot operated check valve with neat sketch.	07
	OR	
Q.3	(a) What is the purpose of Heat Exchanger?	03
	(b) What is Accumulator? List the types of Accumulator.	04
	(c) Explain the ideal characteristics require for hydraulic oil.	07
Q.4	(a) What are the different parts of an air compressor?	03
	(b) Give the classification of Pumps.	04
	(c) Explain any one Pump in detail with neat sketch.	07
	OR	
Q.4	(a) Short note: Pressure Gauge	03

- (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**
