

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2018

Subject Code: 2142302

Date: 05/12/2018

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** (a) (1) The total force exerted on a unit area is called **03**
 (2) Which are the three forms of energy that found in oil hydraulic system?
 (3) Define Pascal's Law.
- (b) (1) Define Hydraulics **04**
 (2) Define Pneumatics
 (3) What is prime mover?
 (4) Draw the symbol of Two way valve.
- (c) Explain about counter balance type pressure control in detail. **07**
- Q.2** (a) Draw any one Pneumatic circuit for plastic processing industry. **03**
 (b) Define and explain Pascal's law with suitable example. **04**
 (c) Draw and explain Deceleration circuit. **07**
- OR**
- (c) Explain Four way valve in detail with neat sketch. **07**
- Q.3** (a) Compare: Filters and strainers. **03**
 (b) List the types of connectors. Explain any one in brief. **04**
 (c) Explain any one Pump in detail with neat sketch. **07**
- OR**
- Q.3** (a) Draw symbols of the following: (1) Line, Passing (2) Cylinder, Single Acting (3) Check Valve **03**
 (b) Short note: Pressure Gauge **04**
 (c) Explain the ideal characteristics require for hydraulic oil. **07**
- Q.4** (a) Give the classification of Pumps. **03**
 (b) What are the different parts of an air compressor? **04**
 (c) Explain Pilot operated check valve with neat sketch. **07**
- OR**
- Q.4** (a) What is the purpose of Heat Exchanger in plastic processing machine? **03**
 (b) What is Accumulator? List the types of Accumulator. **04**
 (c) Define and Explain Bernoulli's Principle with example. **07**
- Q.5** (a) Explain about Packing and seals in brief. **03**
 (b) What are the applications of Hydraulics? **04**
 (c) Compare: Hydraulics and Pneumatics **07**
- OR**
- Q.5** (a) List the advantages of Hydraulics. **03**
 (b) Explain about FRL unit. **04**
 (c) Explain construction and working of Two-way valve. **07**
