

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER III (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2730807

Date: 03/05/2016

Subject Name: OIL 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.**

- Q.1** (a) Explain Various Symbols for Hydraulic and Pneumatic as per ISO/ANSI. **07**
(b) How speed control is achieved in Pneumatic systems? Explain fixed flow and variable flow control valve. **07**
- Q.2** (a) Write Short notes on: **07**
1. Ram type actuators
2. Telescopic type actuators.
(b) Describe working of the Flapper nozzle valve. Explain application of it with the help of suitable neat sketch. **07**
- OR**
- (b) Explain the working principle of an Inline piston pump with the help of a neat sketch. Why do you prefer the reciprocating pumps over rotary pumps? **07**
- Q.3** (a) State function of cushioning mechanism of hydraulic cylinder and state function of valves used in it. **07**
(b) Draw the symbol FRL unit and explain its role in pneumatic system. **07**
- OR**
- Q.3** (a) Show the application of counterbalance valve with the help of suitable circuit diagram. Describe working of the system and explain how and when the **07**
(b) Explain difference between Hydraulics System and Pneumatics system. Explain main three components of each of them. **07**
- Q.4** (a) Explain Hydraulic Controller and Hydraulic servo Valve. **07**
(b) List the different types of accumulator. Describe working of any two of them. **07**
- OR**
- Q.4** (a) Draw meter in & meter out circuit giving a suitable example. **07**
(b) State functions of hydraulic motor using suitable sketch; explain construction and operation of Gear motor. **07**
- Q.5** (a) Selection and Design of Hydraulic Circuits. **07**
(b) Explain hydraulic lift with equivalent circuit. **07**
- OR**
- Q.5** (a) Explain Control system for steam power plant with neat sketch. **07**
(b) State and explain the merits and demerits of oil hydraulic power transmission **07**
