Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech. Summer 2017 - 18 Examination

Semester: 2 **Date: 23/05/2018**
Subject Code: 03217153 **Time: 2:00pm to 4:30pm**
Subject Name: Hydraulics and Pneumatics **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Differentiate between pressure reducing valve and pressure relief valve. **(05)**

B) Explain working of solenoid actuated DCV **(05)**

C) Draw meter-out circuit for hydraulic system. **(05)**

Q.2 **Answer the following questions**. (Attempt any three) (Each five mark) **(15)**

A) Describe the following:
1. Quick Exhaust valve 2. Shuttle Valve

B) Explain construction and operation of Time Delay Valve

C) Compare: Hydraulic system with Pneumatics System

D) Give symbols for any five control valves.

Q.3 A) Explain about External Gear pump in detail with neat sketch. **(07)**

B) Give detail classification of directional control valve. Explain construction and working of 3 way valve with neat sketch. **(08)**

OR

B) Explain the difference between regenerative and sequence control circuit for hydraulic control with neat sketch and suitable example. **(08)**

Q.4 A) Differentiate between unbalanced fixed displacement vane pump and balanced fixed displacement vane pump. **(07)**

OR

A) Write short note on cylinder synchronizing circuits. **(07)**

B) Consider a simple operation where a double-acting cylinder is used to transfer parts from a magazine. The cylinder is to be advanced either by operating a push button or by a foot pedal. Once the cylinder is fully advanced, it is to be retracted to its initial position. A 3/2-way roller lever valve is to be used to detect the full extension of the cylinder. Design a pneumatic circuit for the above-mentioned application. **(08)**