

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (old) - EXAMINATION – SUMMER 2018

Subject Code:180204

Date:04/05/2018

Subject Name:Automotive Hydraulics & Pneumatics (Department Elective-II)

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)** Give advantages of hydraulic system over pneumatic system **07**
- (b)** Draw symbols for following hydraulic/pneumatic elements. **07**
- (i) Sequence valve (ii) check valve (iii) 5/2 direction control valve
(iv) Double acting double rod end hydraulic cylinder (v) shut-off valve
(vi) Unloading valve (vii) pneumatic silencer
- Q.2 (a)** Draw meter in and meter out circuit with symbols. **07**
- (b)** Explain with neat sketch working of gear pump. **07**
- OR**
- (b)** Explain with neat sketch working of air motor. **07**
- Q.3 (a)** Write short note on hydraulic fluid properties. **07**
- (b)** Classify pneumatic actuators and give differences between hydraulic and pneumatic actuators. **07**
- OR**
- Q.3 (a)** Explain hydraulic power steering with neat sketch. **07**
- (b)** Explain hydro-pneumatic suspension system with diagram. **07**
- Q.4 (a)** Explain different centre position of the Direction Control Valve with line diagram. Compare open centre with closed centre valve, critically **07**
- (b)** Explain typical mechanism of pneumatic system with its elements **07**
- OR**
- Q.4 (a)** Describe working of mechanical – hydraulic servo valve. **07**
- (b)** Explain construction and working of pressure relief valve with figure. **07**
- Q.5 (a)** What are Logic gates? Explain AND gate, OR gate and NOT gate with application. **07**
- (b)** List down some common cause of Failure of Pneumatic System and Suggest remedy for the same **07**
- OR**
- Q.5 (a)** What are the basic components and requirements of pneumatic systems **07**
- (b)** Write short note on pneumatic sensors. **07**
