

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**
