

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII EXAMINATION – WINTER 2015

Subject Code: 180204**Date: 12/12/2015****Subject Name: Automotive Hydraulics & Pneumatics****Time: 2:30pm to 5:00pm****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) State the basic advantages of hydraulic system over pneumatic system. **07**
 (b) Draw symbols for following hydraulic elements. **07**
 a) Pressure relief valves
 b) 5/2 Directional control valve
 c) Sequence valve
 d) Double acting cylinder
 e) Throttle valve
 f) quick exhaust valve
 g) shut off valve
- Q.2** (a) Draw and explain constructional features of a 5/3-direction control valve of linear type along with its graphical symbol. **07**
 (b) Explain with a neat sketch the working of gear pump and its applications. **07**
OR
 (b) Explain typical hydraulic circuit with neat sketch. **07**
- Q.3** (a) Draw meter in and meter out circuit with symbols. **07**
 (b) Draw a signal inversion circuit. **07**
OR
- Q.3** (a) Write short note on Hydraulic power steering with neat sketch. **07**
 (b) What are the requirements of Pressure control valve? Explain Pressure reducing valve with neat sketch. **07**
- Q.4** (a) How can you classify the pneumatic actuators? How do hydraulic actuators differ from pneumatic actuators? **07**
 (b) Describe hydro-pneumatic air suspension with neat diagram. **07**
OR
- Q.4** (a) List pneumatic sensors and logic gates and explain it. **07**
 (b) List common causes of pneumatic system breakdown and suggest remedies. **07**
- Q.5** (a) Write short note on air motor. **07**
 (b) Enlist the various faults, probable causes and also their remedial action for the following pneumatic system components **07**
 1. Compressor 2. Air cylinder 3. FRL unit 4. Pipe line
- OR**
- Q.5** (a) Why pneumatic system selected for factory automation? Explain in brief elements of pneumatic system. **07**
 (b) Explain typical mechanism of pneumatic system with its elements. **07**
