

GUJARAT TECHNOLOGICAL UNIVERSITY**ME - SEMESTER-IV • EXAMINATION – SUMMER • 2014****Subject Code: 741101****Date: 04-06-2014****Subject Name: Hydraulic and Pneumatic Systems in Automotive Vehicles****Time: 02:30 pm - 05:00 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) Comparison between Hydraulic and Pneumatic system or circuit. **07**
(b) What is the role of filter in hydraulic and pneumatic system? List the different types. **07**
- Q.2** (a) List five applications of fluid power in automobile industry. Explain any one in detail. **07**
(b) What are the types and advantages of hose in hydraulic circuits? **07**
- OR**
- (b) State the role of a pump in a hydraulic system. Classify pumps and explain with a neat sketch the working of positive displacement pump. **07**
- Q.3** (a) Enlist important points for maintenance of hydraulic system. **07**
(b) State the various physical characteristics of hydraulic oil. **07**
- OR**
- Q.3** (a) Classify air compressors. What is its function in pneumatic system? Write selection criteria for air compressors in pneumatic systems. **07**
(b) Write a short note on: pressure regulator in a pneumatic system. **07**
- Q.4** (a) Draw and explain in short (i) poppet valve (ii) spool valve. **07**
(b) Explain various methods of cylinder mounting/ mounting arrangement. **07**
- OR**
- Q.4** (a) What is contamination of hydraulic system? Enlist causes of contamination. **07**
(b) Explain with neat sketch the working of relief valve in pneumatic system. **07**
- Q.5** (a) Explain 12 steps to troubleshooting pneumatic systems. **07**
(b) Describe components of an electro-hydraulic servo system. **07**
- OR**
- Q.5** (a) Explain PLC- construction in hydraulic systems. **07**
(b) Write short note on - Ladder Diagram. **07**
