**REG.NO:**

**SEMBODAI RUKMANI VARATHARAJAN ENGINEERING COLLEGE**

**ACADEMIC YEAR 2014-2015/ODD SEMESTER**

**MODEL EXAM – I**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**SUBJECT CODE/TITLE:** ME2305 APPLIED HYDRAULICS AND PNEUMATICS

**YEAR/SEM:** III/V **DATE:**

**DURATION: 3** HOURS **MAX.MARKS:** 100

**Answer ALL the Questions**

**PART A (10X2=20)**

1. State Pascal’s l aw.
2. List any four application of fluid power system.
3. What are pump characteristic curves? Draw the same for the positive displacement Pump.
4. Why end cushions are used in cylinders?
5. What is the purpose of regenerative circuit?
6. What is meter-in circuit? What are its limitations?
7. Differentiate between pressure reducing valve and pressure relief valve with graphical symbol.
8. What are the reasons for pressure drop in pneumatic lines?
9. Define low cost automation.
10. What is meant by interlock contacts?

**PART B (80 MARKS)**

1. i) With neat sketch explain the hydraulic and pneumatic fluid power system (12)

ii) Discuss the properties of the hydraulic fluids (4)

(or)

1. With a neat sketch explain the principle construction working advantages ,limitations and applications of a non-pressure compensated reciprocating vane pump (16)
2. Explain the factors which affect the selection of pumps and discuss in detail the classification and performance features of different types of hydraulic pumps. (16)

(or)

1. i) What is cylinder cushioning? Explain with diagram (8)

ii) Explain the construction and working of gear pump (8)

1. (i) With neat sketch describe the construction and operation of pressure regulated low control valve. (10)

(ii) Explain the working of four way two position direction control valve. (6)

(or)

1. (i) Briefly explain any two type of accumulators. (8)

(ii) Explain the working of four-way three position control valve (8)

1. (i)Explain the working of a pneumatic speed control circuit (8)

(ii)What is the time delay circuit? Discuss with an example (8)

(or)

1. i) Explain with neat block diagram an air pilot control circuit for a double acting cylinder (8)

ii) Describe any one of the electro-hydraulic circuits used in robotic system (8)

1. How the PLC is used in fluid power control Explain with suitable example (16)

(or)

1. i)What is the selection criterion for pneumatic components? (4)

ii) What are the factors considered during the installation of pneumatic system? (6)

iii) What are advantages of using fluidics system? (6)