**GOVERNMENT POLYTECHNIC CHHAPRA**

(Mechanical 6th sem)

**Industrial Fluid Power**

1. What is function of (i) oil reservoir (ii) pressure relief valve, (iii) direction control valve, (iv) filters ?
2. Explain piston pump with neat sketch………….
3. Explain gear pump with neat sketch………
4. Explain any four criteria for selection of hydraulic pump in hydraulic system.
5. Explain with neat sketch the working of variable displacement vane pump.
6. Compare positive displacement pump with Rotodynamic pump.
7. State the four advantages and disadvantages of screw pump.
8. Explain the construction of 4/2 poppet valve with neat sketch & symbol.
9. State the essential properties of hydraulic fluids……….
10. Draw general layout of hydraulic system and explain its working. ……………..
11. Explain variable displacement axial piston pump with neat sketch……..
12. Enlist applications of hydraulic system.
13. Write any four applications oil hydraulic systems.
14. What are the effects of contaminants in the oil?
15. Draw actual hydraulic system and explain its working
16. What is swash plate? What is its use……..
17. Write any four advantages of oil hydraulic system.
18. Explain construction and working of gear pump.
19. In cold climate why oil tank is equipped with oil heaters? Explain.
20. Draw and explain working of pressure reducing valve………
21. What is an accumulator ? Why accumulator is necessary for huge hydraulic pressers ?
22. What is pressure compensated flow control valve ? Explain with sketch………
23. What is function of filters ? Classify the filters and draw any two types of filter.
24. Explain 4-way-3 position direction control valve used in hydraulic system……….
25. What are actuators ? Draw a double acting cylinder.
26. State any two applications of 3 × 2 DC valve. Draw symbol for the same.
27. Compare pressure relief valve and pressure reducing valve.
28. What are the various types of Hoses used in pneumatic system
29. Explain any two mounting methods of cylinder. …………….
30. With a neat sketch explain pressure compensated flow control valve……………
31. Name any eight pipe or tube fitting with their application…………..
32. What is seal ? Classify seals according to shape. State the factors for seal selection………
33. Discuss pilot operated check valve with neat sketch…………
34. State the four merits and demerits of using a rubber hose in pneumatic circuit…………..
35. Draw symbol of unloading valve and sequence valve………….
36. Explain with neat sketch the working of rotary spool type DC valve.
37. Why pressure relief valve is used in hydraulic circuit…………
38. What is the use of direction control valve…
39. Draw symbol of any three types of Hydraulic motors.
40. Compare meter-in-circuit with meter-out-circuit………….
41. Explain with neat sketch the working of hydraulic circuit for milling machine.
42. Explain the working of counter balance valve in hydraulic circuit……….
43. Explain with neat sketch the working of meter out hydraulic circuit………..
44. Explain working of counterbalance hydraulic circuit with neat diagram……..
45. Draw the hydraulic circuit showing control of DA cylinder…
46. Explain the principle of regenerative circuit………………
47. Draw pilot operated DA cylinder circuit ………….
48. Draw bleed off circuit and label it.
49. What is impulse circuit? Explain
50. Compare meter in circuit and meter out circuit
51. Draw the hydraulic circuit for shaping machine…….
52. Name any four components of pneumatic system………………….
53. Draw labelled sketch of air lubricator…………..
54. Explain pressure relief valve in pneumatic system
55. State any four reasons of failure of pneumatic seals.
56. State any four reasons of failure of pneumatic seals.
57. What are the advantages of pneumatic system over hydraulic systems ?
58. List various types of air motors. Explain vane type air motor with neat sketch………..
59. What is FRL ? State the function of each component of FRL……..
60. List any four applications of pneumatic rotary actuator………..
61. What is the Function of Time Delay valve?
62. Draw speed control pneumatic circuit for bi-directional air motor…..
63. List different types of pressure regulator valves ? Explain any one with neat sketch……..
64. State at least four advantages and disadvantages of pneumatic systems.
65. Draw a general layout of pneumatic system and state the function of components
66. Explain the construction and working of doubled acting reciprocating compressor with neat sketch.
67. What is FRL unit? Explain its function
68. What are the limitations of pneumatic system?
69. What is the meaning of unidirectional air motor and bi directional air motor
70. Compare linear actuators and rotary actuators
71. Draw constructional details of pneumatic hose……..
72. Explain with sketch, a pneumatic circuit for speed control of bidirectional motor.
73. List the factors to be considered for selecting the pipe while designing the pneumatic system. Give specification of pipes for the pneumatic system.
74. Draw and explain pneumatic meter in circuit to control of speed extension.
75. Explain with neat sketch (position based) working of sequencing circuit for two double acting Air cylinders.
76. Draw speed control of single acting cylinder pneumatic circuit using 3 × 2 DC valve.
77. Develop a pneumatic circuit for operation of two DA cylinders such that one operates after other using travel dependant sequencing.
78. Explain pneumatic impulse circuit with neat sketch.
79. Explain pneumatic circuit for speed control of single acting cylinder with neat sketch.
80. How can the speed control of any actuator be achieved? Explain the speed control circuit of bi directional air motor with sketch.