

Subject Code: 2142302

Date: 17/05/2019

Subject Name: Industrial Hydraulics and Pneumatics

Time: 02:30 PM TO 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.

		MARKS
Q.1	(a) (1) _____ valve permit free flow in one direction and block return flow until open by pilot signal. (2) The study of pneumatics deals with the use and characteristic of _____. (3) The input component of hydraulic power transmission system is called _____ and out component is called an _____.	03
	(b) What is prime mover? Define work and Power.	04
	(c) Compare: Hydraulics with Pneumatics	07
Q.2	(a) Define check valves. List the types of Check valves.	03
	(b) List and explain in brief about ideal characteristic required for hydraulic oil.	04
	(c) Explain about external gear pump in detail with neat sketch.	07
	OR	
	(c) Define and explain Pascal's law with suitable example.	07
Q.3	(a) Explain in brief: Reservoir	03
	(b) Short note: Pressure Gauge	04
	(c) List advantages and disadvantages of Hydraulics.	07
	OR	
Q.3	(a) What is accumulator? List its types.	03
	(b) Explain any one accumulator in detail.	04
	(c) Explain pilot operated check valve in detail.	07
Q.4	(a) Explain about packing and seals in brief.	03
	(b) List the types of connectors. Explain any one in brief.	04
	(c) Explain construction and working of four way valve in detail with neat sketch.	07
	OR	
Q.4	(a) Draw the symbol of Line-Passing, check valve and Accumulator- spring loaded	03
	(b) Give classification of Pump.	04
	(c) Explain in brief about volumetric efficiency of Pump.	07
Q.5	(a) What is Intensifiers? What is the purpose of intensifiers in hydraulic system? List the types of it.	03
	(b) Solve: In a hydraulic jack system pumping piston diameter is 50 mm and force applied is 50 kg. Find out the force transmitted by jack if the jack piston diameter is 200 mm.	04
	(c) Draw and explain Deceleration circuit.	07
	OR	
Q.5	(a) What are the application of Pneumatics.	03
	(b) Explain any type of air-compressor in brief.	04
	(c) Explain about counter balance type pressure control in detail.	07
