

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2024

Subject Code:3132305

Date:06-07-2024

Subject Name: Hydraulics & Pneumatics in Plastic Industry

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Define (1) Pressure (2) Servo valve (3) Power	03
(b) Solve: In a hydraulic jack system pumping piston diameter is 60 mm and force applied is 100 kg. Find out the force transmitted by jack if the jack piston diameter is 300 mm.	04
(c) Compare: Hydraulics System Vs Pneumatic System	07
Q.2 (a) Define and explain Pascal's law with suitable example.	03
(b) Explain Bernoulli's Principle for Hydraulic system.	04
(c) List advantages and disadvantages of Hydraulics.	07
OR	
(c) Draw and Explain Clamp Control Circuit.	07
Q.3 (a) Compare: Filters and strainers	03
(b) List the types of connectors. Explain any one in brief.	04
(c) Draw and explain Deceleration circuit.	07
OR	
Q.3 (a) Short note: Pressure Gauge	03
(b) Define check-valve. Give detail classification of Check-valve.	04
(c) Explain working principle of single stage compressor in detail.	07
Q.4 (a) Draw symbols of the following: (1) Line, Pilot(2) Motor, Rotary, Fixed Displacement (3) Pressure Switch	03
(b) Explain working of Two-way valve.	04
(c) Explain construction and working of Pilot Operated Check-valve.	07
OR	
Q.4 (a) Explain about Packing and seals in brief.	03
(b) Draw any one Pneumatic circuit for plastic processing industry. Mention the different equipments used in Pneumatic circuit.	04
(c) Explain Single stage Pressure Intensifier with neat sketch.	07
Q.5 (a) Give classification of Pumps.	03
(b) Draw and Explain working of External Gear-Pump.	04
(c) List and explain in detail about ideal characteristic required for hydraulic oil.	07
OR	
Q.5 (a) Define Accumulator. List types of Accumulator used in Plastic Industries.	03
(b) Draw Four way valves in all ports blocked condition.	04
(c) Explain about counter balance type pressure control valve in detail	07
