Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 3 – EXAMINATION – SUMMER 2026

Subject Code: 3132305 **Date: 02/07/2026**

Subject Name: Hydraulics & Pneumatics in Plastic Industry

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.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Define: Hydraulics, Pneumatics & Work.	**03**
	(b)	Draw symbols of the following: (1) Line, Passing (2) Cylinder, Single Acting (3) Pilot Operated Check Valve (4) Temperature Gauge	**04**
	(c)	List advantages and disadvantages of Hydraulics.	**07**
Q.2	**(a)**	1) _____ valve permit free flow in one direction and block return flow until open by pilot signal. 2) In check valve ,the pressure required to overcome the spring tension and open the valve is called _____ 3) The input component of the hydraulic power transmission system is called a _____ and the output component is called an_____	**03**
	(b)	Short note: Pressure Gauge	**04**
	(c)	Explain Two way valves in detail with neat sketch.	**07**
		OR	
Q.2	**(c)**	Explain Pilot-Operated check valve with neat sketch.	**07**
Q.3	**(a)**	Define Check Valve.Give classification of check valve.	**03**
	(b)	Solve: In a hydraulic jack system pumping piston diameter is 60 mm and force applied is 60 kg. Find out the force transmitted by jack if the jack piston diameter is 200 mm	**04**
	(c)	Draw and Explain Clamp Control Circuit	**07**
		OR	
Q.3	**(a)**	List and explain in brief about ideal characteristic required for hydraulic oil.	**03**
	(b)	Explain in brief: Reservoir	**04**
	(c)	What is accumulator? List types of it. Explain any one in detail.	**07**
Q.4	**(a)**	Explain about Packing and seals in brief.	**03**
	(b)	Give the classification of Pumps.	**04**
	(c)	Explain any one Pump in detail with neat sketch.	**07**
		OR	
Q.4	**(a)**	Define and explain Bernoulli's Principle with suitable example.	**03**
	(b)	Compare: Hydraulics and Pneumatics.	**04**
	(c)	Draw and Explain Filtration Circuit in detail.	**07**
Q.5	**(a)**	Compare: Filters and strainers	**03**
	(b)	What is Connectors? List the types of connectors used for Hydraulic System. Explain any one in brief.	**04**

	(c)	Draw and explain Deceleration circuit.	**07**

OR

Q.5	**(a)**	Define and explain Pascal's law with suitable example.	**03**
	(b)	Draw any one Pneumatic circuit for plastic processing industry.	**04**
	(c)	Explain about pressure reducing valve in detail.	**07**

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