

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:3132305

Date:10-12-2024

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.

- Q.1** (a) List the advantages of hydraulic system. 03
(b) Write the symbols for: 04
i) SAC ii) Hydraulic Motor iii) FCV iv) Accumulator
(c) Compare hydraulics and pneumatics. 07
- Q.2** (a) State Pascal's law. 03
(b) Write short notes on filters & strainers. 04
(c) Explain the construction & working of gear pump with neat sketch. 07
- OR**
- (c) Explain Bernoulli's principle & state its applications. 07
- Q.3** (a) Differentiate between hydraulic pump & hydraulic motor. 03
(b) Write short notes on sequence valves. 04
(c) Explain single stage & double stage pressure intensifiers with neat sketch. 07
- OR**
- Q.3** (a) What is an accumulator? Mention its types. 03
(b) Write short notes on unloading valves. 04
(c) Explain briefly about counter balance type pressure control. 07
- Q.4** (a) Give the classification of valves. 03
(b) Draw the clamp control circuit. 04
(c) Explain briefly the components of pneumatic system with neat sketch 07
- OR**
- Q.4** (a) What is the function of pressure relief valve? 03
(b) Write short notes on connectors. 04
(c) Draw and explain the deceleration circuit. 07
- Q.5** (a) What are positive & non positive displacement pumps? 03
(b) Write short notes on FRL unit. 04
(c) Explain the working of 4-way DCV with neat sketch. 07
- OR**
- Q.5** (a) What are the ideal characteristics required for hydraulic oil? 03
(b) Write short notes on reservoir used in hydraulic system. 04
(c) Explain the construction & working of vane motor with neat sketch. 07