



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY	Program:B.Tech
Branch Code:ROB	Pattern:2022
Name of Course:Hydraulics and Pneumatics	Course Code:ROB222013
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 pages.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Question No. 1 Attempt following Question

- 1a) Draw the general layout of hydraulic system? State the function any 2 components in it? (6) CO1

Question No. 2 Attempt following Question

- 2a) Explain any four Pump selection factors. (6) CO1

Question No. 3 Attempt following Question

- 3a) Draw Pump Unloading Circuit and explain its working. (8) CO1, CO2

OR

- 3b) Explain any Four differences between Meter-in & Meter-out circuit (8) CO2, CO3

- 3c) Why accumulators are used in hydraulic circuit. Draw neat sketch of Diaphragm Accumulator (8) CO2, CO3

OR

- 3d) Draw regenerative hydraulic circuit with 4/3 way DCV and explain its working (8) CO2, CO3

Question No. 4 Attempt following Question

- 4a) Explain working principal of Filter, Regulator and Lubricator. (8) CO3, CO4

OR

- 4b) Draw symbol of FRL unit. Explain importance of FRL in pneumatic system (8) CO3, CO4
- 4c) Explain with neat sketch typical compressed air generation and distribution system. (8) CO3, CO4

OR

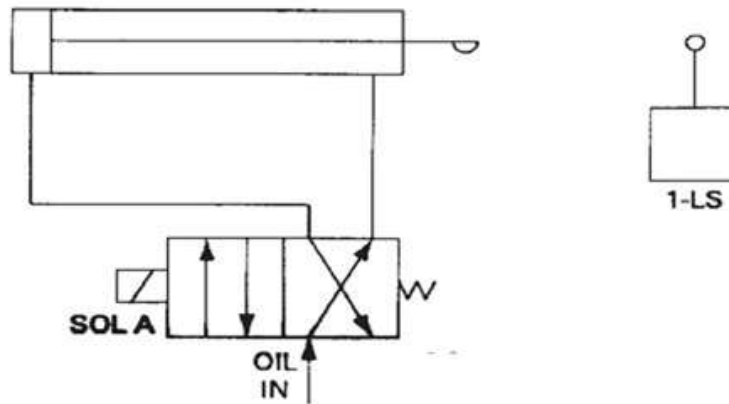
- 4d) What is objective of using Logic gates - OR and AND gates in pneumatic applications. (8) CO3, CO4

Question No. 5 Attempt following Question

- 5a) What is a programmable logic controller? State the main function of
i. CPU
ii. I/O Module (8) CO4, CO5

OR

- 5b) Explain the complete operation of the system shown in fig (8) CO4, CO5



- 5c) Explain PLC based electro-pneumatic systems (8) CO4, CO5

OR

- 5d) What is PLC? State and explain any two industrial applications of PLC (8) CO4, CO5

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