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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech (Hons.) Degree Examination December 2024 (2022 Admission)

Course Code: MET 397

Course Name: FLUID POWER AUTOMATION

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks) Marks

1	List out any six advantages of fluid power.	3
2	Differentiate between hydro dynamic and hydrostatic pump.	3
3	What is a hydraulic accumulator? List out its basic types.	3
4	Define power pack and list any four advantages.	3
5	Draw the hydraulic symbols of (i) Two way spool type direction control valve. (ii) Three way direction control valve. (iii) Two position four way valve.	3
6	Write a note on different methods of actuation.	3
7	What is an intensifier? And Why it is using?	3
8	What are the parameters relate to the selection of a hydraulic cylinder?	3
9	Explain the function and working of solenoid.	3
10	Differentiate between pressure switch and limit switch.	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

11	a)	Briefly explain the needs and benefits of automation.	6
	b)	Describe the various types of fluid power system.	8
12		Briefly explain the working, construction and performance of external gear pump with a neat sketch.	14

Module -2

13	Describe the working principle of any two, linear actuators with neat sketches.	14
14	Draw and explain the different mounting configurations.	14

Module -3

15	Describe the working and construction of unloading valve with a neat sketch and also draw a high low circuit using unloading valve.	14
16	Briefly explain the speed control circuit with a servo valve.	14

Module -4

17	Design and draw a hydraulic circuit for A+, B+, A-, B- sequence using cascade method and explain.	14
18	Draw and describe the sequence operation by use of cam valve.	14

Module -5

19	Draw the pneumatic circuit and ladder diagram for sequence of dual pneumatic cylinder and explain the operations.	14
20	With a block diagram explain the construction and basic elements of PLC.	14

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