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Roll No. .....

3rd Year / Advance Diploma in Tool and Die Making
Subject : Hydraulics and Pneumatics

Time : 2 Hrs. M.M. : 50

SECTION-A

Note: Multiple Choice questions. All questions are compulsory. (10x1=10)

Q.1 Define fixtures.

Q.2 Give two applications of forging.

Q.3 Define Charle's Law.

Q.4 Name any two properties of air related to pneumatics.

Q.5 Define specific weight and its units.

Q.6 Give the ISO symbol of directional control valve.

Q.7 Define combination valve.

Q.8 Name any two linear actuator.

Q.9 What is the function of a cylinder?

Q.10 Give the function of air lubricator.

SECTION-B

Note: Short answer type questions. Attempt any six questions out of Eight questions. (6x5=30)

Q.11 Explain gas laws with reference to pneumatic systems.

Q.12 Explain difference types of flows.

Q.13 Construct a hydraulic power pack using hydraulic pump, drive system, filter, cooler with ISO symbols giving the application of circuit.

Q.14 Explain direct control valve and pressure control valve.

Q.15 Describe the working of quick exhaust valve.

Q.16 Explain the types of actuators and their applications.

Q.17 Write short note on construction and working of air dryers.

Q.18 Explain the principle of working of oil level gauge.

SECTION-D

Note: Long answer type questions. Attempt any one questions out of two questions. (1x10=10)

Q.19 Make a circuit diagram for a typical application of a sheet metal punch press in which the hydraulic cylinder must extend rapidly over a great distance with low-pressure but high-flow requirements. During the punching operation for short motion, the pressure requirements are high, The relief valve protect the high-pressure pump from over pressure at the end of cylinder stroke. The check valve protects the low-pressure pump from high pressure, which occurs during punching operation.

Q.20 Draw a circuit to speed up the extending speed of a double-acting cylinder. The pipelines to both ends of the hydraulic cylinder are connected in parallel.