

SI No	Questions	Answers
1	A hydraulic motor has a 82-cm <sup>3</sup> (0.082-L) volumetric displacement. If it has a pressure rating of 70 bars and it receives oil from a 0.0006-m <sup>3</sup> /s (0.60-Lps or 36.0-Lpm) theoretical flow-rate pump, find the motor 1. Speed 2. Theoretical torque 3. Theoretical power	1. 439 rpm 2. 91.4 N . m 3. 4.20 kW
2	A hydraulic motor has a displacement of 164 cm <sup>3</sup> and operates with a pressure of 70 bars and a speed of 2000 rpm. If the actual flow rate consumed by the motor is 0.006 m <sup>3</sup> /s and the actual torque delivered by the motor is 170 N · m, (1) Volumetric efficiency (2) Mechanical Efficiency (3) Overall Efficiency (4) The actual kW delivered by the motor	(1) 91.2 % (2) 93.0% (3) 84.8% (4) 35.6 kW
3	_____ extract energy from the fluid and convert it to mechanical energy to perform useful work.	Both
4	Hydraulic cylinders (also called linear actuators) extend and retract a piston rod to provide a push or pull force to drive the external load along a .	straight-line path
5	Extension force for a double acting cylinder is given by _____	$p \times A_p$
6	For a 100% efficient double-acting cylinders the extension force is _____ than the retraction force for the same operating pressure.	greater
7	The power developed by a hydraulic cylinder equals the product of its _____ during a given stroke.	force and velocity
8	_____ typically used when the same task is to be performed at either end.	Double rod cylinders
9	A 2:1 area ratio cylinder has a rod that is:	half the area of the piston
10	A double rod-end cylinder with the same pressure at either end can have:	equal force and speed in both directions of travel
11	Which one of the following is a type of actuator in a hydraulic system?	cylinder
12	_____ cylinders are used where long work strokes are required but the full retraction length must be minimized.	Telescopic
13	The output force (F) and piston velocity (u) of double-acting cylinders are _____ for extension and retraction strokes.	not the same
14	Why are hydraulic cylinders cushioned ?	both a & b
15	A check valve is a/an:	directional control valve
16	The volumetric efficiency of a hydraulic motor is the inverse of that for a pump. It is given by	$Q_t/Q_a$
17	Which type of motion is transmitted by hydraulic actuators?	both a and b
18	Why are hydraulic cylinders cushioned?	both a and b
19	Double acting cylinder can be used as a single acting cylinder	TRUE
20	Due to friction, a motor produces _____ torque than it should theoretically.	less
21	the actual power delivered to a load by a motor via a rotating shaft is called _____.	brake power
22	A 2-way valve has	two working port
23	A double rod-end cylinder with the same pressure at either end can have:	equal force and speed in both directions of travel
24	Hydraulic intensifier is a device used for.....	B.Increasing pressure intensity of a fluid

25	Hydraulic accumulator is a device used for .....	B. Storing the energy of the fluid in the form of pressure energy
26	Broad classification of hydraulic motors ( choose the appropriate answer)	gear motors, vane motors & piston motors
27	How is reverse flow is possible in pilot operated check valve	spring force lifts the ball
28	Mechanical efficiency of both pumps and motors are	indirectly proportional to each other
29	which type of motor has following features: higher/wide range speed, higher power density, torque and efficiency & multiple control of Vd	Piston motor
30	A pump supplies oil at 0.002 m <sup>3</sup> /s to a 50mm diameter double acting cylinder and a rod diameter is 20mm. If the load is 6000N both in extending and retracting, find: a. Piston velocity during the extension stroke and retraction stroke b. Power during the extension stroke and retraction stroke	(a). Extension Velocity= 1 m/s & Retraction Velocity =1.2 m/s, (b) Power during extension = 6.12 kW & power during extension stroke= 7.28kW