S. B. Roll. No.....

HYDRAULICS AND PNEUMATICS
4th Exam/Mech./4853/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. Define Real fluid.
b. Define Specific gravity.
c. Write SI units of Surface Tension.
d. Define viscosity.
e. Vacuum pressure= Atmospheric pressure -_____
f. Define differential manometers.
g. Define Uniform flow.
h. Orifice meter is used to measure_____
i. Define Hydraulic mean depth.
j. Write Darcy-Weisbach formula.
k. Name any two types of Energy losses in pipes.
l. The volume of air delivered by the compressor is called free air delivery. (T/F)
m. Air filters are used to prevent the entrance of _____to the system.
n. Pelton wheel is a impulse turbine. (T/F)
o. The speed of a rotary compressor is _____as compared to a reciprocating air compressor.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. Differentiate between Laminar and Turbulent flow, Steady and Unsteady flow.
ii. Explain briefly the following: a) Surface tension b) Compressibility
iii. Explain the Bourdon tube pressure gauge.
iv. Write a short note on Surge tank.
v. What are energy losses in pipes? Explain Minor losses.
vi. Explain briefly Single acting compressor.
vii. What is Cavitation? How we can prevent it?

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. State and prove Pascal's law. Discuss its applications also.
b. Discuss Working of Hydraulic Ram with neat and clean diagram
c. Distinguish between Centrifugal pump and reciprocating pump.
d. Explain with neat sketch the construction and working of Pelton wheel turbine.
e. What is hydraulic coupling? Describe with a neat sketch the working of hydraulic coupling.