S.B. Roll No.....

HYDRAULICS & PNEUMATICS

4th Exam/Mech/RAC/Prod/Auto/T&DM/0953/5304/5366/Nov' 2016

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

SECTION A

Q1. Fill in the Blanks. **15x1=15**

1. Density of water at all temperatures is ……
2. Specific weight of water in SI units is ……
3. Pitot tube is used for the measurement of ……
4. An ideal fluid has …….. viscosity.
5. The ratio of inertia force to viscous force is known as …….
6. Chezy's formula is given as …….
7. Hydraulic press is based on ……. law.
8. Kaplan turbine is a ..…… turbine.
9. Pascal's law represents ……. property of fluids.
10. Static seals are used when ……. occurs between the mating parts.
11. Lubricators follow the principle of …….
12. Air compressor is machine used to compress air and to raise its ……..
13. Mercury is generally used in manometers because it has ……
14. The numerical value of 1Pa of pressure is equal to ……
15. Piezometer is used to measure ……. pressure.

SECTION B

Q2. Attempt any Five questions **5x6=30**

a. Write difference between an ideal and real fluid.
b. Explain surface tension in briefly? What is their unit?
c. What do you mean by water hammering in pipes?
d. Describe the construction and working of Hydraulic press in short.
e. What is priming? Why is it necessary?
f. Write short note on Cavitation.
g. Write advantages of oil power hydraulics system.
h. What are the uses of hydraulic coupling?

SECTION C

Q3. Attempt any Three questions **10X3=30**

1. State and prove Bernoulli's theorem.
2. Explain Surge tank and Syphon.
3. Discuss the construction and working of simple hydraulic accumulator.
4. Explain with neat sketch, working of Francis turbine.
5. A U-tube differential manometer is attached to two sections P and Q, in a horizontal pipe. In the pipe, oil of specific gravity 0.8 is flowing. Deflection of mercury in the gauge is 0.6m and if the level near to P is lower one, then find out the difference of pressure in N/cm^2 between the sections P and Q.