

Date: 25/05/2017

new

Exam No: _____

GANPAT UNIVERSITY
B. TECH SEM- IV(Marine) REGULAR EXAMINATION- APRIL-JUNE 2017
2MR406: Fluid Mechanics and Hydraulics

TIME: 3 HRS

TOTAL MARKS: 60

- Instructions:** (1) This Question paper has two sections. Attempt each section in separate answer book.
(2) Figures on right indicate marks.
(3) Be precise and to the point in answering the descriptive questions.

SECTION: I

- Q.1** (a) Explain the Following Terms: 1) Viscosity 2) Capillary action. (05)
(b) Explain the Pitot tube in detail. (05)

OR

- Q.1** (a) State and prove the Pascal's Law with its application. (05)
(b) Describe the Reynolds's Experiments in detail. (05)

- Q.2** (a) Derive the Force equation for the Inclined Plate Moving in the Direction of the Jet. (05)
(b) List the Different types of Pressure measurement devices and explain simple U tube manometer with neat sketch. (05)

OR

- Q.2** The Water is flowing through a pipe having diameters 300 mm and 200 mm at section bottom and upper respectively. The rate of flow through pipe is 40 liters/s. The Intensity of pressure at the bottom end is 24.525 N/cm^2 and the pressure at the upper end is 9.81 N/cm^2 . Determine the difference of datum head to upper head. (10)
- Q.3** State and Derive the Bernoulli's Theorem with its limitation, Advantages and Application in Detail. (10)

SECTION: II

- Q.4** Write a Short Note on Kaplan Turbine with suitable Neat Sketch. (10)

OR

- Q.4** Explain and Describe Orifice Meter in Detail. (10)
- Q.5** An oil S.P gravity 0.8 is flowing through a venturimeter having inlet diameter 20 cm and throat diameter 10cm. The oil-mercury differential manometer shows a reading of 25 cm. Calculate the discharge of oil through the horizontal venturimeter. Take $C_d=0.98$. (10)

OR

- Q.5** (a) Write a Short on Draft Tube. (05)
(b) State and Derive the Equation for the Friction loss in Pipe (05)
- Q.6** State and Explain the Center of Bouncy Force and Metacenter for the floating Body with Ship Model. (10)

-----END OF PAPER-----