

Roll No. : _____

Code No. : 4432

ENGLISH VERSION

HYDRAULICS

Time Allowed : 3:00 Hours

Maximum Marks : 60

Notes: (i) Attempt all questions. All questions carry equal marks.

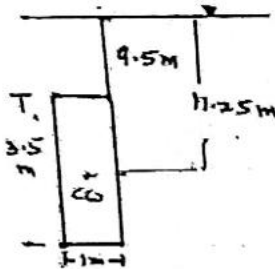
(ii) Students are advised to specially check the numerical data of question paper in both versions. If there is any difference in Hindi translation of any question, the students should answer the question according to the English version.

(iii) Use of pager and mobile phone by the students is not allowed.

Q.1. Answer any two of the following :

[2×5=10]

- (a) Define the following: (i) Atmospheric Pressure (ii) Gauge Pressure (iii) Absolute Pressure (iv) Vacuum Pressure
- (b) A rectangular opening in a vertical reservoir wall is 1m wide and 3.5m deep and its top edge is 9.5m below the water level as shown in figure. Find the total pressure on the gate and its point of application.

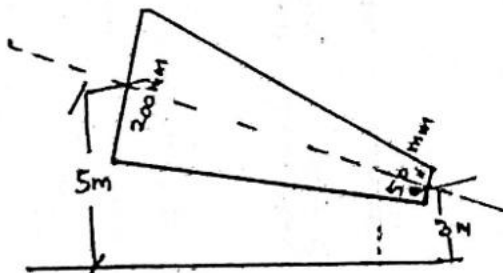


- (c) Calculate the specific weight, density, specific volume and specific gravity of 1.5 litres of fluid which weighs 6 N.

Q.2. Answer any two of the following :

[2×5=10]

- (a) Differentiate between the following: (i) Uniform and Non-uniform flow (ii) Laminar and Turbulent flow.
- (b) Water is flowing through a pipe 200mm diameter with an average velocity of pipe is 8m/sec. Find the rate of discharge and velocity at the other end of the pipe if the pipe is replaced by 300mm diameter.
- (c) The diameter of a pipe changes from 200mm at a section 5m above the datum to 50mm at a section 3 meters above datum. The pressure of water at first section is 500kN/m². If the velocity of flow at the first section is 1m/s, determine the intensity of pressure at the second section.



Q.3. Answer any two of the following :

[2×5=10]

- (a) Explain the major and minor losses in pipe with their expression.
- (b) With the help of figure, describe the principle on which Venturimeter works.
- (c) State the causes and remedial measures of water hammer in pipes.