

JEE MAIN MECHANICAL PROPERTIES OF FLUIDS — BERNOULLI'S PRINCIPLE AND ITS APPLICATIONS — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ) — 4 questions

- Q.1** A liquid of density 600 kg/m^3 flowing steadily in a tube of varying cross-section. The cross-section at a point A is 1.0 cm^2 and that at B is 20 mm^2 . Both the points A and B are in same horizontal plane, the speed of the liquid at A is 10 cm/s . The difference in pressures at A and B points is _____ Pa.

[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) 18 (2) 144 (3) 36 (4) 72

Scan or tap for the full solution



- Q.2** A cylindrical vessel of 40 cm radius is completely filled with water and its capacity is 528 dm^3 (dm : decimeter). The vessel is placed on a solid block of exactly same height as vessel. If a small hole is made at 70 cm below the top of water level, then horizontal range of water falling on the ground in the beginning is _____ cm.

[JEE Main 2026 (Online) 6th April Evening Shift]

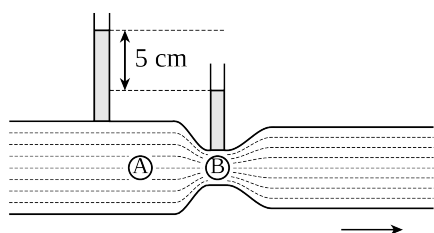
- (1) $120\sqrt{2}$ (2) $140\sqrt{2}$
(3) $140\sqrt{3}$ (4) $120\sqrt{3}$

Scan or tap for the full solution



- Q.3** Water flows through a horizontal tube as shown in the figure. The difference in height between the water columns in vertical tubes is 5 cm and the area of cross-sections at A and B are 6 cm^2 and 3 cm^2 respectively. The rate of flow will be _____ cm^3/s . (take $g = 10 \text{ m/s}^2$)

[JEE Main 2026 (Online) 21st January Morning Shift]



- (1) $100\sqrt{3}$ (2) $\frac{200}{\sqrt{3}}$
(3) $200\sqrt{6}$ (4) $200\sqrt{3}$

Scan or tap for the full solution



- Q.4** Consider a completely full cylindrical water tank of height 1.6 m and of cross-sectional area 0.5 m^2 . It has a small hole in its side at a height 90 cm from the bottom. Assume, the cross-sectional area of the hole to be negligibly small as compared to that of the water tank. If a load 50 kg is applied at the top surface of the water in the tank then the velocity of the water coming out at the instant when the hole is opened is:
($g = 10 \text{ m/s}^2$)

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) 2 m/s (2) 5 m/s (3) 3 m/s (4) 4 m/s

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4							
Ans.	4	2	4	4							