

## Worksheet: Mechanical Properties of Fluids

NIOS · Class 11 · Physics · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** Find the pressure at the bottom of a 10 m water tank ( $\rho = 1000$ ,  $P_0 = 1e5$  Pa,  $g = 10$ ). [2 marks]

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**Q2.** Water rises 5 cm in a capillary. If the radius is halved, what is the new rise? [2 marks]

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**Q3.** A hydraulic lift has piston areas  $10\text{ cm}^2$  and  $500\text{ cm}^2$ . Find the force on the small piston to lift 2000 kg. [3 marks]

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**Q4.** An object weighs 50 N in air and 30 N in water. Find its volume and density. [3 marks]

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**Q5.** A 1 mm sphere ( $\rho = 5000$ ) falls through water ( $\rho = 1000$ ,  $\eta = 0.001$  Pa s,  $g = 10$ ). Find terminal velocity. [3 marks]

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