

NEET MECHANICAL PROPERTIES OF FLUIDS — VISCOSITY AND STOKES' LAW, TERMINAL VELOCITY — PYQS

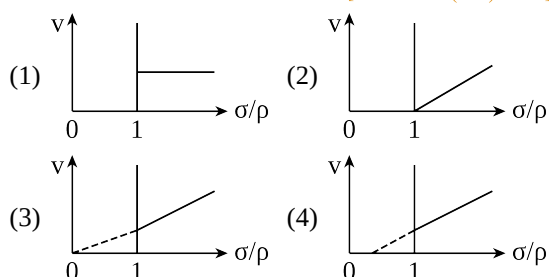
Max. Marks: 20

Questions: 5

Section A (MCQ) — 5 questions

- Q.1** In the measurement of viscosity of liquids using terminal velocity experiment, spherical balls of same radius but having different densities are used. The variation of the terminal velocity (v) with the ratio of density of spherical ball (σ) to density of the liquid (ρ), is best represented by:

[RE-NEET (UG) 2026]

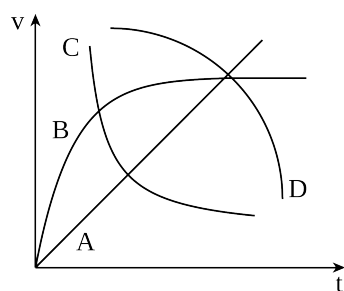


Scan or tap for the full solution



- Q.2** A spherical ball is dropped in a long column of a highly viscous liquid. The curve in the graph shown, which represents the speed of the ball (v) as a function of time (t) is

[NEET (UG) 2022]



(1) A (2) B (3) C (4) D

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- Q.3** The terminal velocity of a copper ball of radius 5 mm falling through a tank of oil at room temperature is 10 cm s^{-1} . If the viscosity of oil at room temperature is $0.9 \text{ kg m}^{-1} \text{ s}^{-1}$, the viscous drag force is :

[NEET (UG) 2022 (Phase 2)]

- (1) $4.23 \times 10^{-6} \text{ N}$ (2) $8.48 \times 10^{-3} \text{ N}$
 (3) $8.48 \times 10^{-5} \text{ N}$ (4) $4.23 \times 10^{-3} \text{ N}$

Scan or tap for the full solution



- Q.4** The velocity of a small ball of mass M and density d , when dropped in a container filled with glycerin becomes constant after some time. If the density of glycerin is $\frac{d}{2}$, then the viscous force acting on the ball will be :

[NEET (UG) 2021]

- (1) $2Mg$ (2) $\frac{Mg}{2}$ (3) Mg (4) $\frac{3}{2}Mg$

Scan or tap for the full solution



- Q.5** A small sphere of radius ' r ' falls from rest in a viscous liquid. As a result, heat is produced due to viscous force. The rate of production of heat when the sphere attains its terminal velocity, is proportional to

[NEET 2018]

- (1) r^3 (2) r^2 (3) r^5 (4) r^4

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5						
Ans.	2	2	2	2	3						