

NEET GRAVITATION — EARTH SATELLITES AND ORBITAL VELOCITY — PYQS

Max. Marks: 16
Questions: 4

Section A (MCQ) — 4 questions

- Q.1** A satellite is orbiting just above the surface of the earth with period T . If d is the density of the earth and G is the universal constant of gravitation, the quantity $\frac{3\pi}{Gd}$ represents : [NEET (UG) 2023]

(1) T^2 (2) T^3 (3) $\sqrt{T}$ (4) T

Scan or tap for the full solution



- Q.2** A remote-sensing satellite of earth revolves in a circular orbit at a height of 0.25×10^6 m above the surface of earth. If earth's radius is 6.38×10^6 m and $g = 9.8 \text{ m s}^{-2}$, then the orbital speed of the satellite is [AIPMT 2015]

(1) 9.13 km s^{-1} (2) 6.67 km s^{-1}
 (3) 7.76 km s^{-1} (4) 8.56 km s^{-1}

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- Q.3** The radii of circular orbits of two satellites A and B of the earth, are $4R$ and R , respectively. If the speed of satellite A is $3V$, then the speed of satellite B will be [AIPMT 2010 (Prelims)]

(1) $\frac{3V}{4}$ (2) $6V$ (3) $12V$ (4) $\frac{3V}{2}$

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- Q.4** Two satellites of earth, S_1 and S_2 are moving in the same orbit. The mass of S_1 is four times the mass of S_2 . Which one of the following statements is true? [AIPMT 2007]

- (1) The potential energies of earth and satellite in the two cases are equal.
 (2) S_1 and S_2 are moving with the same speed.
 (3) The kinetic energies of the two satellites are equal.
 (4) The time period of S_1 is four times that of S_2 .

Scan or tap for the full solution



ANSWER KEY

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