PYQSide PYQSide.com — free PYQs with solutions Powered by TestBlink

JEE MAIN GRAVITATION — ESCAPE SPEED — PYQS

Max. Marks: 16 **Questions:** 4

Section A (MCQ) — 4 questions

Q.1 If a body of mass 1 kg falls on the earth from infinity, it attains velocity (v) and kinetic energy (k) on reaching the surface of earth. The values of v and k respectively are _____.
(Take radius of earth to be 6400 km and g = 9.8 m/s^2) [JEE Main 2026 (Online) 2nd April Evening Shift]

(1) 11.2 km/s; 6.27×10^7 J
(2) 11.2 km/s; 12.54×10^7 J
(3) 8.8 km/s; 6.27×10^7 J
(4) 8.8 km/s; 12.54×10^7 J

Scan or tap for the full solution

Q.2 The escape velocity from a spherical planet A is 10 km/s. The escape velocity from another planet B whose density and radius are 10% of those of planet A, is _____ m/s.
[JEE Main 2026 (Online) 22nd January Morning Shift]

(1) 1000
(2) $200\sqrt{5}$
(3) $1000\sqrt{2}$
(4) $100\sqrt{10}$

Scan or tap for the full solution

Q.3 An object is kept at rest at a distance of 3R above the earth's surface where R is earth's radius. The minimum speed with which it must be projected so that it does not return to earth is : (Assume M = mass of earth, G = Universal gravitational constant)
[JEE Main 2025 (Online) 4th April Evening Shift]

(1) $\sqrt{\frac{3GM}{R}}$
(2) $\sqrt{\frac{2GM}{R}}$
(3) $\sqrt{\frac{GM}{2R}}$
(4) $\sqrt{\frac{GM}{R}}$

Scan or tap for the full solution

Q.4 Earth has mass 8 times and radius 2 times that of a planet. If the escape velocity from the earth is 11.2 km/s, the escape velocity in km/s from the planet will be:
[JEE Main 2025 (Online) 28th January Evening Shift]

(1) 8.4 (2) 11.2 (3) 5.6 (4) 2.8

Scan or tap for the full solution

ANSWER KEY

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