

PYQSide

NEET GRAVITATION — GRAVITATIONAL FIELD AND POTENTIAL — PYQS

Max. Marks: 36

Questions: 9

Section A (MCQ)

- Q.1** Two bodies of mass m and $9m$ are placed at a distance R . The gravitational potential on the line joining the bodies where the gravitational field equals zero, will be (G = gravitational constant) :

[NEET (UG) 2023]

- (1) $-\frac{12Gm}{R}$ (2) $-\frac{16Gm}{R}$
(3) $-\frac{20Gm}{R}$ (4) $-\frac{8Gm}{R}$

Scan or tap for the full solution



- Q.2** A body of mass 60 g experiences a gravitational force of 3.0 N, when placed at a particular point. The magnitude of the gravitational field intensity at that point is

[NEET (UG) 2022]

- (1) 0.05 N/kg (2) 50 N/kg
(3) 20 N/kg (4) 180 N/kg

Scan or tap for the full solution



- Q.3** In a gravitational field, the gravitational potential is given by, $V = -\frac{K}{x}$ (J/Kg). The gravitational field intensity at point $(2, 0, 3)$ m is

[NEET (UG) 2022 (Phase 2)]

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

Scan or tap for the full solution



- Q.4** At what height from the surface of earth the gravitation potential and the value of g are -5.4×10^7 J kg $^{-1}$ and 6.0 m s $^{-2}$ respectively? Take the radius of earth as 6400 km.

[NEET 2016 (Phase 1)]

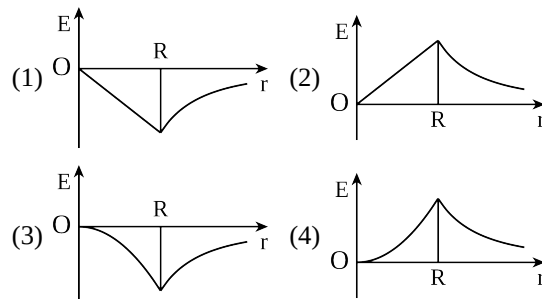
- (1) 1400 km (2) 2000 km
(3) 2600 km (4) 1600 km

Scan or tap for the full solution



- Q.5** Dependence of intensity of gravitational field (E) of earth with distance (r) from centre of earth is correctly represented by

[AIPMT 2014]



Scan or tap for the full solution



- Q.6** Infinite number of bodies, each of mass 2 kg are situated on x -axis at distance 1 m, 2 m, 4 m, 8 m, ... , respectively, from the origin. The resulting gravitational potential due to this system at the origin will be

[NEET 2013]

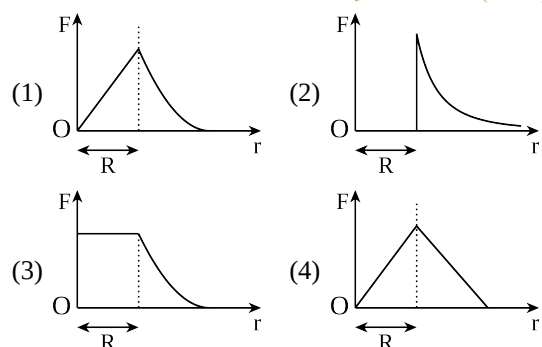
- (1) $-\frac{4}{3}G$ (2) $-4G$ (3) $-G$ (4) $-\frac{8}{3}G$

Scan or tap for the full solution



- Q.7** Which one of the following plots represents the variation of gravitational field on a particle with distance r due to a thin spherical shell of radius R ? (r is measured from the centre of the spherical shell)

[AIPMT 2012 (Mains)]



Scan or tap for the full solution



- Q.8** A particle of mass M is situated at the centre of a spherical shell of same mass and radius a . The magnitude of the gravitational potential at a point situated at $\frac{a}{2}$ distance from the centre, will be :

[AIPMT 2011 (Mains)]

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

Scan or tap for the
full solution



Q.9 A particle of mass M is situated at the centre of a spherical shell of same mass and radius a . The magnitude of the gravitational potential at a point situated at $a/2$ distance from the centre, will be :

[AIPMT 2010 (Prelims)]

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

Scan or tap for the
full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9		
Ans.	2	2	4	3	1	2	2	3	3		