Yakeen NEET 2.0 2026

Physics By Manish Raj Sir

Basic Maths & Calculus (Mathematical Tools)

DPP: 4

Q1 Find maximum value of y where
$y = 2\sin\theta + \sqrt{5}\cos\theta$
(A) 3
(B) $2+\sqrt{5}$
(C) $2\sqrt{5}$
(D) $\sqrt{5}$

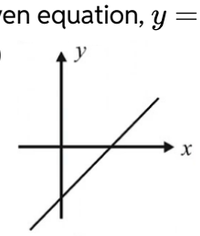
Q2 Friction force acting on an object is given as function of angle θ, $f_r = \frac{\mu mg}{\sin\theta+\mu\cos\theta}$, then find the value of θ for which f_r will be minimum
(A) μmg
(B) $\frac{\mu mg}{1+\mu}$
(C) $\frac{\mu mg}{\sqrt{1+\mu^2}}$
(D) Zero

Q3 Find sum of infinite term
$1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\frac{1}{16}+\ldots\ldots$
(A) $\frac{1}{2}$
(B) 1
(C) 2
(D) $\frac{3}{2}$

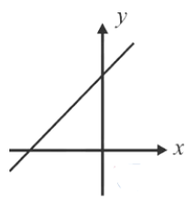
Q4 Find sum of infinite term
$1-\frac{1}{2}+\frac{1}{4}-\frac{1}{8}+\frac{1}{16}-\frac{1}{32}+\ldots\ldots$
(A) $\frac{1}{2}$
(B) $\frac{2}{3}$
(C) 2
(D) $\frac{3}{2}$

Q5 Find $F_{net} = GMm\left[\frac{1}{r^2}+\frac{1}{2r^2}+\frac{1}{4r^2}+\ldots\ldots\right.$ up to $\infty]$
(A) $\frac{2GMm}{r^2}$
(B) $\frac{GMm}{r^2}$
(C) $\frac{GMm}{r}$
(D) $\frac{GM}{r^2}$

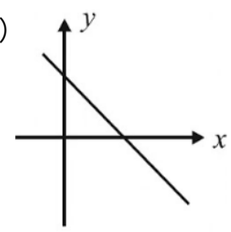
Q6 Which graph is the best representation for the given equation, $y = 2x - 1$?
(A)



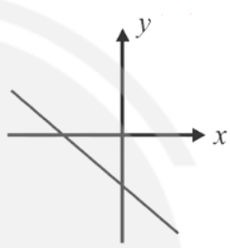
(B)



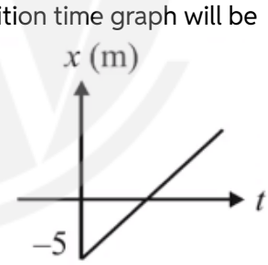
(C)



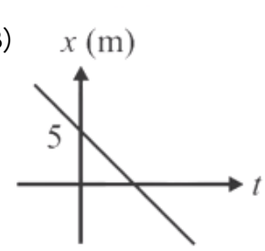
(D)



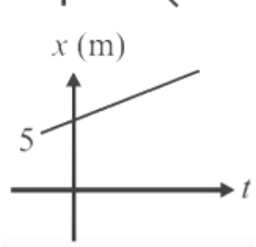
Q7 A particle starts moving with constant, velocity $v = 2\ \mathrm{m/s}$. from position $x = 5\ \mathrm{m}$. Then position time graph will be
(A)



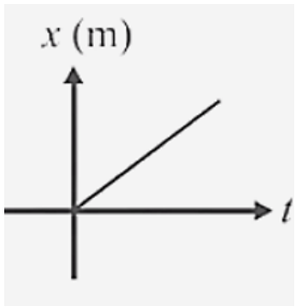
(B)



(C)

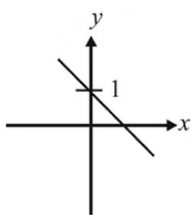


(D)

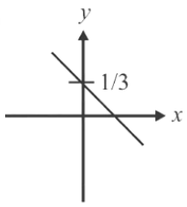


Q8 Correct graph of $3x + 3y + 1 = 0$ is:

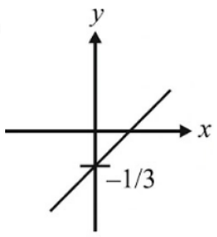
(A)



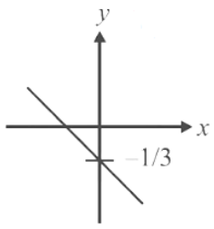
(B)



(C)



(D)



Answer Key

Q1	(A)
Q2	(C)
Q3	(C)
Q4	(B)
Q5	(A)
Q6	(A)
Q7	(C)
Q8	(D)