Yakeen NEET 2.0 (2026)

Physics by Saleem Sir

Basic Maths & Calculus (Mathematical Tools)

Q1 Find the value of $\cos 75°$

(A) $\frac{\sqrt{3}-1}{2\sqrt{2}}$

(B) $\frac{2\sqrt{2}}{\sqrt{3}-1}$

(C) $\frac{\sqrt{3}}{\sqrt{2}}$

(D) $\sqrt{2}$

Q2 If $\frac{\sin\theta+\cos\theta}{\sin\theta-\cos\theta} = \frac{7}{3}$ then find $\tan\theta$.

(A) $\frac{3}{5}$

(B) $\frac{5}{2}$

(C) $\frac{5}{3}$

(D) $\frac{2}{5}$

Q3 Convert the following in degrees

(i) $\frac{5\pi}{4}$

(ii) $\frac{4\pi}{3}$

(iii) $\frac{\pi}{6}$

(iv) $\frac{3\pi}{2}$

(v) $\frac{\pi}{3}$

(vi) $\frac{5\pi}{3}$

Q4 Convert following into radian:

(i) $45°$

(ii) $135°$

(iii) $60°$

(iv) $90°$

(v) $240°$

(vi) $120°$

Q5 If $\frac{\cos\theta+\sin\theta}{\sin\theta-\cos\theta} = \frac{5}{3}$ then find value $\tan\theta$

(A) $\frac{3}{5}$

(B) $\frac{1}{4}$

(C) $\frac{3}{2}$

(D) $\frac{8}{2}$

Q6 Find value of different trigonometric function

(i) $\sin(135°)$

(ii) $\tan(120°)$

(iii) $\cos(150°)$

(iv) $\tan(45°)$

(v) $\tan 37°$

(vi) $\cos 53°$

(vii) $\cos(-60°)$

Q7

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) $\sqrt{5}$

Q8 A car is moving towards a building with speed 10 m/s. At any instant the angle of elevation of the building is $30°$ after 5sec. the angle of elevation of the building becomes $45°$, then height of building is

(A) $h = \frac{50}{\sqrt{3}+1}$

(B) $h = \frac{20}{\sqrt{3}+1}$

(C) $h = \frac{20}{\sqrt{3}-1}$

(D) $h = \frac{50}{\sqrt{30}-1}$

Q9 Given $2x^2 + 5x - 12 = 0$, find the root of x

(A) $x = \frac{3}{2}, -4$

(B) $x = -\frac{3}{2}, -4$

(C) $x = \frac{3}{2}, -2$

(D) $x = -\frac{3}{2}, 4$

Q10 If $\frac{a_1^2+a_2^2}{a_1^2-a_2^2} = \frac{5}{3}$ then find $\frac{a_2}{a_1}$

(A) 0

(B) 1

(C) $\frac{1}{2}$

(D) 4

Q11 Find the solutions of given equation:

$2x^2 + 3x - 2 = 0$

(A) $x = -3, \frac{1}{2}$

(B) $x = 3, \frac{1}{2}$

(C) $x = -2, \frac{1}{2}$

(D) $x = 2, \frac{1}{2}$

Q12 The mass m of a body moving with a velocity v is given by $m = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$ where $m_0 = $ rest mass of body $= 20$ kg and $c = $ speed of light $= 3 \times 10^8$ m/s. Find the value of m at $v = 3 \times 10^7$ m/s.

(A) 20 kg

(B) 20.1 kg

(C) 20.05 kg

(D) 20.033 kg

Q13 Find the value of $(1+x)^3$, if $x \ll 1$.

(A) $1+x$

(B) 1 - 3x

(C) $1+3x$

(D) $1+3x+3x^2+x^3$

Q14 If acceleration due to gravity g at height $h \ll R$ (where R is radius of earth) is

$g_h = g_0\left(1+\frac{h}{R}\right)^{-2}$, then using binomial theorem which is **correct** ?

(A) $g_h = g_0$

(B) $g_h = g_0\left(1-\frac{2h}{R}\right)$

(C) $g_h = g_0\left(1+\frac{2h}{R}\right)$

(D) $g_h = g_0\left(1-\frac{h}{2R}\right)$

Q15 $3, 6, 9, 12, 15, \ldots\ldots\ldots, 120$ find the sum of series.
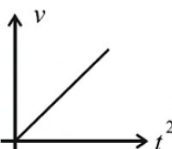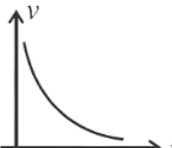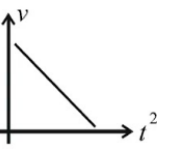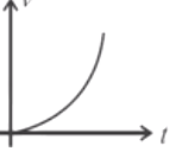
(A) 1960 (B) 1760

(C) 1560 (D) 2460

Q16 Find sum of infinite term

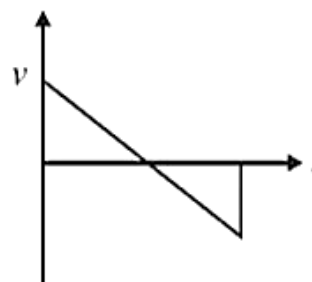$1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16} - \frac{1}{32} + \cdots\cdots$

(A) $\frac{1}{2}$

(B) $\frac{2}{3}$

(C) 2

(D) $\frac{3}{2}$

Q17 If velocity v varies with time t as $v = t^2$, then the plot between v and t^2 will be given as
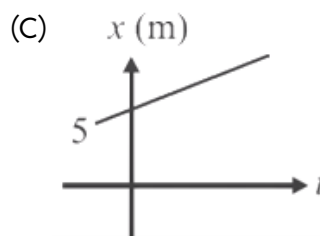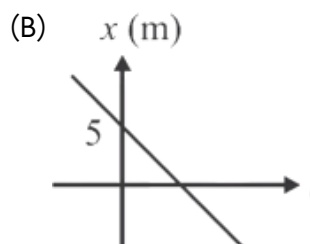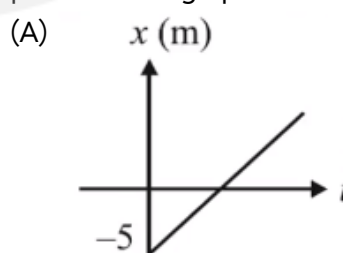
(A)

(B)

(C)

(D)

Q18 A stone is allowed to fall freely from a certain height. Neglecting air resistance, which graph represents the variation of velocity v with time t ? Assuming the collision to be elastic and the stone bounces back.
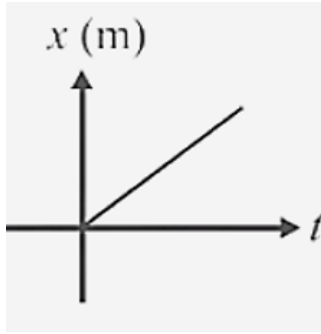
(A)

(B)

(C)

(D)
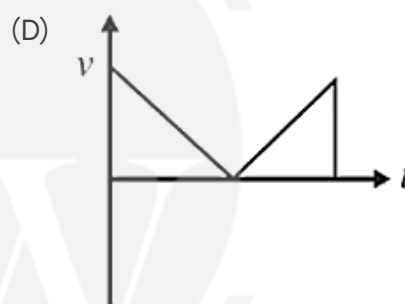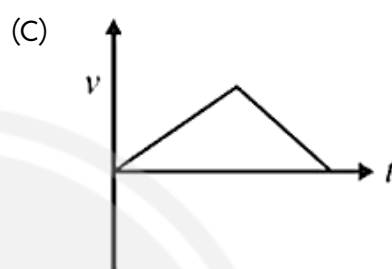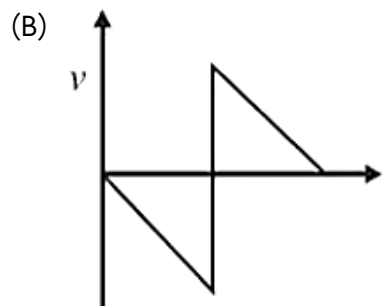
Q19 A particle starts moving with constant, velocity $v = 2\text{ m/s}$. from position $x = 5$ m. Then position time graph will be
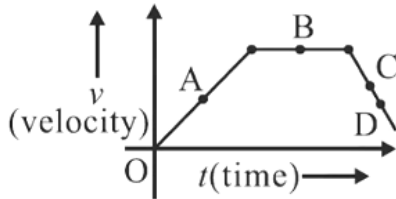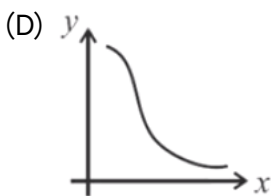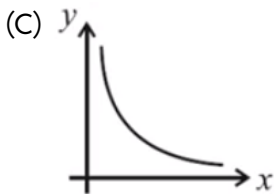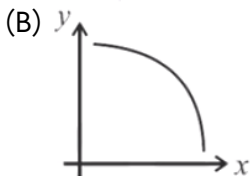
(A)

(B)

(C)

(D)

$x\,(\mathrm{m})$

Q20 The slope of $v - t$ is zero at point:

(A) A
(B) B
(C) C
(D) D

Q21 Graph of $x^2 y = 2$ is best represented by
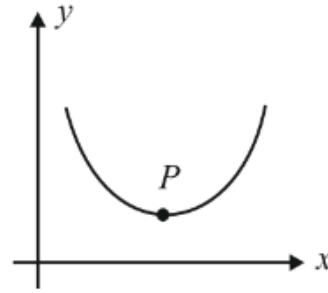
(A)

(B)

(C)

(D)
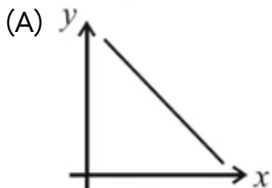
Q22 Which of the following equation is the best representation of the given graph?
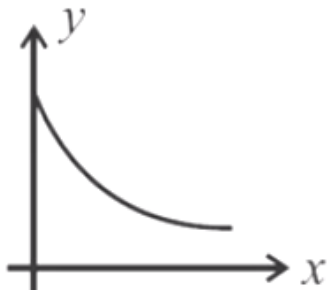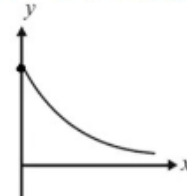

(A) $y = \frac{2}{x}$
(B) $y = e^{-x}$
(C) $y = \frac{1}{x^2}$
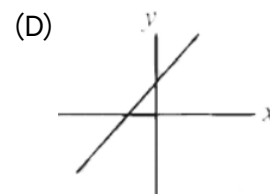(D) $y = x^2$

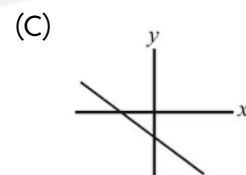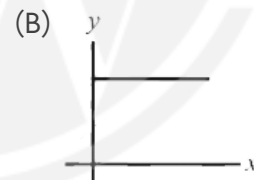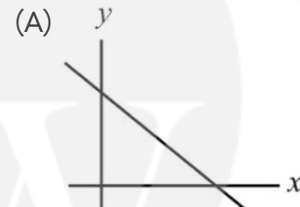**Q23** At point P, the value of slope is

(A) Zero
(B) Positive
(C) Negative
(D) Infinite

Q24 Which of the following equation is the best representation of the given graphs?

(A) $y = \frac{2}{x}$
(B) $y = e^{-x}$
(C) $y = \frac{1}{x^2}$
(D) $y = x^2$

Q25 In which of the following graph slope is positive.

(A)

(B)

(C)

(D)

Answer Key

Q1 (A)

Q2 (B)

Q3 (i) 225°
(ii) 240°
(iii) 30°
(iv) 270°
(v) 60°
(vi) 300°

Q4 $1° = \frac{\pi}{180}\ radian$

$45° = \frac{\pi}{180} \times 45°\ radian = \frac{\pi}{4}\ radian$

$135° = \frac{\pi}{180} \times 135°\ radian = \frac{3\pi}{4}\ radian$

$60° = \frac{\pi}{180} \times 60°\ radian = \frac{\pi}{3}\ radian$

$90° = \frac{\pi}{180} \times 90°\ radian = \frac{\pi}{2}\ radian$

$240° = \frac{\pi}{180} \times 240°\ radian = \frac{4\pi}{3}\ radian$

$120° = \frac{\pi}{180} \times 120°\ radian = \frac{4\pi}{6}\ radian$

Q5 (D)

Q6 (i) $\frac{1}{\sqrt{2}}$
(ii) $-\sqrt{3}$
(iii) $-\frac{\sqrt{3}}{2}$
(iv) 1
(v) $\frac{3}{4}$
(vi) $\frac{3}{5}$
(vii) $\frac{1}{2}$

Q7 (A)

Q8 (D)

Q9 (A)

Q10 (C)

Q11 (C)

Q12 (B)

Q13 (C)

Q14 (B)

Q15 (D)

Q16 (B)

Q17 (A)

Q18 (B)

Q19 (C)

Q20 (B)

Q21 (C)

Q22 (B)

Q23 (A)

Q24 (B)

Q25 (D)

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