

MM 30
Time - 1 hr

Class test - XI - A/c

@ BIVASH SIR.

+1 ① In the expansion of $(\frac{1}{2}x^{1/3} + x^{-1/5})^8$, the term independent of x is

- Ⓐ T_5 Ⓑ T_6 Ⓒ T_7 Ⓓ T_8

+1 ② The total number of terms in the expansion of $(x+a)^{100} + (x-a)^{100}$ after simplification is

- Ⓐ 202 Ⓑ 51 Ⓒ 50 Ⓓ none of these.

(1+3) ③ The coefficients of $(r-1)^{th}$, r^{th} & $(r+1)^{th}$ terms in the expansion of $(x+a)^n$ are in the ratio 1:3:5. Find n & r .

+3 ④ Evaluate: $\lim_{x \rightarrow 1} \frac{(x+x^2+x^3+\dots+x^n)-n}{(x-1)}$

+2 ⑤ If $\lim_{x \rightarrow 2} \frac{x^n - 2^n}{x-2} = 80$ & $n \in \mathbb{N}$, find n . Ⓐ

+4 ⑥ Evaluate: Ⓐ $\lim_{x \rightarrow \pi/6} \frac{\sqrt{3} \sin x - \cos x}{x - \pi/6}$ Ⓑ $\lim_{x \rightarrow \pi/4} \frac{-\tan^3 x - \tan x}{\cos(x + \pi/4)}$

+3 ⑦ Using 1st principle of derivative differentiate $e^{\sqrt{\tan x}}$. Ⓐ

+3 ⑧ Find $\frac{d}{dx} (x \sin x \cdot \log x)$

+3 ⑨ Find $\frac{d}{dx} \left(\frac{4x+5 \sin x}{3x+7 \cos x} \right)$.

+3 ⑩ Given that $P(3, 2, -4)$, $Q(5, 4, -6)$ & $R(9, 8, -10)$ are collinear. Find the ratio in which Q divides PR .

+3 ⑪ If the origin is the centroid of the Δ with vertices $P(2a, 2, 6)$, $Q(-4, 3b, -10)$ & $R(8, 14, 2c)$, find the values of a, b & c