

Subject: Engineering Mathematics

DPP-02

Chapter: Calculus

Topic : Limits & its application

1. The value of

$$\lim_{x \rightarrow 0} \frac{x(e^x - 1) + 2(\cos x - 1)}{x(1 - \cos x)} = \underline{\hspace{2cm}}$$

2. The value of
- $\left[\lim_{x \rightarrow \infty} \left(\frac{1}{\sin x} - \frac{1}{\tan x} \right) \right]$
- is:

- (a) 0 (b) 1
(c) 2 (d) ∞

3. Value of the function
- $\lim_{x \rightarrow a} (x - a)^{(x-a)}$
- is given by

- (a) 1 (b) 0
(c) ∞ (d) a

4. The value of the function
- $f(x) = \lim_{x \rightarrow 0} \frac{x^3 + x^2}{2x^3 - 7x^2}$
- is

- (a) Zero (b) $-\frac{1}{7}$
(c) $\frac{1}{7}$ (d) Infinite

- 5.
- $\lim_{x \rightarrow \infty} \frac{x^3 - \cos x}{x^2 + (\sin x)^2}$
- equal

- (a) ∞ (b) 0
(c) 2 (d) does not exist

- 6.
- $\lim_{x \rightarrow 0} \left(\frac{1 - \cos x}{x^2} \right)$
- is

- (a) 1/4 (b) 1/2
(c) 1 (d) 2

7. The value of
- $\lim_{x \rightarrow 8} \frac{x^{1/3} - 2}{(x - 8)}$

- (a) $\frac{1}{16}$ (b) $\frac{1}{12}$
(c) $\frac{1}{8}$ (d) $\frac{1}{4}$

- 8.
- $\lim_{x \rightarrow 0} \frac{e^x - \left(1 + x + \frac{x^2}{2} \right)}{x^3} =$

- (a) 0 (b) 1/6
(c) 1/3 (d) 1

Answer Key

1. (1)
2. (d)
3. (a)
4. (b)

5. (a)
6. (b)
7. (b)
8. (b)



Any issue with DPP, please report by clicking here:- <https://forms.gle/t2SzQVvQcs638c4r5>

For more questions, kindly visit the library section: Link for web: <https://smart.link/sdfez8ejd80if>



PW Mobile APP: <https://smart.link/7wwosivoicgd4>