

**GATE 2023 Chemical Engineering Question Paper**  
**(Memory-Based)**

Question.

$$M = \begin{bmatrix} 10 & 6 \\ 6 & 10 \end{bmatrix} \quad \text{Sum of Eigen value of } M^3$$

Answer. 4160

Question. Find Divergence

$$\vec{v} = z x \hat{i} + 2xy \hat{j} + 3yz \hat{k}$$

- A. 3
- B. 13
- C. 4
- D. 0

Answer. B

Question.

$$y = \lim_{x \rightarrow 0} \frac{2x}{e^x - 1}$$

- A. 0
- B. 1

- C. Infinity
- D. 2

**Answer. D**

**Question. Find F**

$$F = \frac{|z_1 + z_2|}{|z_1| + |z_2|}$$
$$z_1 = 2 + 3i$$
$$z_2 = -2 + 3i$$

- A.  $F < 1$
- B.  $F > 1$
- C.  $F = 0$
- D.  $F < 0$

**Answer. A**