

Vidya Vikas Mandal's
Ramacrisna Madeva Salgaocar Higher Secondary School
Margao Goa

Std: XI VOC – CT

Second Quarterly Exam Jan, 2023

Duraton: 1 hr.

Date: 18/01/23

Subject : Mathematics (voc)

Marks:20

Instructions : 1) All questions are compulsory.
3) Write the number of questions clearly.

Question numbers from 1 to 3 carry 1 mark each.

1. If $f(x) = x^2 - 6x + 9$, $0 \leq x \leq 4$

Find $f(2)$, $f(5)$ if they exist

2. If $y = 3x^2 + \sin x$, find dy/dx

3. If $y = 2e^x - \log x$, find dy/dx

Question numbers from 4 to 7 carry 2 marks each.

4. Find $\lim_{x \rightarrow 2} \frac{x^2 - 4}{x^2 - x - 2}$

5. If $y = \frac{7}{x^2} + 2\sqrt{x} + \cos 2x + 5$, find dy/dx

6. If $y = x \tan x$, find dy/dx

7. If $y = \frac{x}{x^2 + 1}$, find dy/dx

Question numbers from 8 and 10 carry 3 marks each.

8. Find $\lim_{x \rightarrow 3} \frac{x^3 - 4x - 15}{x^3 + x^2 - 6x - 18}$

9. Find $\lim_{x \rightarrow 3} \frac{x^3 - a^3}{x^{10} - a^{10}}$

10. If $y = \tan^2 x - 7^{(2x^2 + 3x + 2)}$
