



Model Test

81. When Cl_2 is reacted with hot & conc. caustic soda. The product formed is
(2 marks)

☐ $NaCl + NaClO$

☐ $NaCl + NaClO_3$

☐ $NaClO + NaClO_3$

☐ $NaClO_3 + H_2O$

82. Let f be the exponential function (e^x) and g be the logarithmic function $\log_e x$ then the value of (f + g) (1) =
(2 marks)

☐ $e^2 + \log 2$

☐ e

☐ 1

☐ 0

83. The area bounded by the curve $y = \sin x$, $y = \cos x$ and $y = \text{axis}$ in 1^{st} quadrant is
(2 marks)

☐ $\sqrt{2} - 1$

☐ $\sqrt{2}$

☐ $\sqrt{2} + 1$

☐ $2\sqrt{3} - 1$

84. $\tan\left[\frac{1}{2}\sin^{-1}\left(\frac{2x}{1+x^2}\right) + \frac{1}{2}\cos^{-1}\left(\frac{1-y^2}{1+y^2}\right)\right] =$
(2 marks)

☐ $\frac{x+y}{1-xy}$

☐ $\frac{x-y}{1+xy}$

☐ $\frac{x^2-y^2}{1+x^2y^2}$

☐ $\frac{2x-y}{1+xy}$

85. If $x = a(t + \sin t)$ and $y = a(1 - \cos t)$ then $\frac{dy}{dx} =$
(2 marks)

☐ $\cos t$

☐ $2 \sin \cos t$

☐ $\tan \frac{t}{2}$

☐ $-\tan t$

86. α and β are the roots of the equation $x^2 - px + 36 = 0$ and $\alpha^2 + \beta^2 = 9$ then $p =$
(2 marks)

☐ ± 6

☐ ± 3

☐ ± 8

☐ ± 9

87. $\int \sqrt{\frac{1+x}{1-x}} dx =$
(2 marks)

☐ $\sin^{-1} x - \sqrt{1-x^2} + c$

☐ $\sin^{-1} x + \sqrt{1-x^2} + c$

☐ $\sin^{-1} x - \sqrt{1+x^2} + c$

☐ $-\cos^{-1} x - \sqrt{1+x^2} + c$

88. A man who has 144 ft. of fencing material wishes to enclose a rectangular garden. Then the maximum area that can be enclosed is
(2 marks)

☐ 1296

☐ 1000

☐ 864

☐ 625

89. If $\vec{a}, \vec{b}, \vec{c}$ are three mutually perpendicular unit vectors then $|\vec{a} + \vec{b} + \vec{c}|$ is equal to
(2 marks)

☐ 1

☐ 3

☐ $2\sqrt{3}$

☐ $\sqrt{3}$

90. The equation of the plane which bisects the line joining (2, 3, 4) and (6, 7, 8) is
(2 marks)

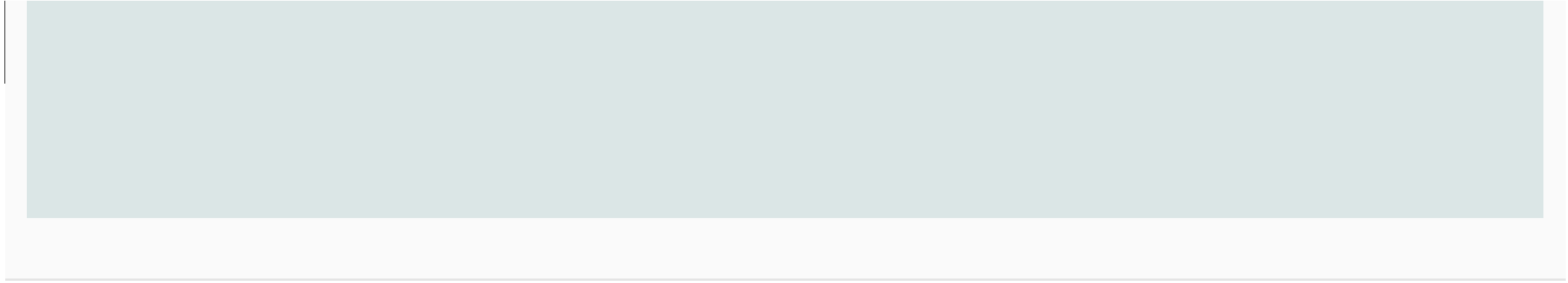
☐ $x - y + z - 15 = 0$

☐ $x + y + z - 15 = 0$

☐ $2x + y - z = y$

☐ $x + y + z + 15 = 0$

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