

B.B.S SMRITIVIDYAPEETH, AURAIYA

(An English Medium Co-Educational Sr. Sec.(10+2) affiliated to CBSE New Delhi)

WEEKLY ASSIGNMENT SERIES

Sub- Mathematics

Class- XII

Ques.1- Use differential to approximate the cube root of 127.

Ques.2- Use differential to find the approximate value of $\sqrt{0.037}$.

Ques.3- find all the points of local maxima and local minima of the function

$$f(x) = x^3 - 6x^2 + 12x - 8$$

Ques.4- Show that the function $f(x) = 4x^3 - 18x^2 + 27x - 7$ has neither maxima nor minima.

Ques.5- Find the local maximum or local maximum, if any, of the function $f(x) = \sin x^4 + \cos^4 x$, $0 < x < \frac{\pi}{2}$ using the first derivative test.

Ques.6- Show that $\frac{\log x}{x}$ as a maximum value at $x = e$.

Ques.7- Show that $\sin^p \theta \cos^q \theta$ attains a maximum, When $\theta = \tan^{-1} \sqrt{\frac{p}{q}}$.

Ques.8- Find the minimum value of $ax + by$ where $xy = c^2$. And a,b,c are positive.

Ques.9- Show that of all the rectangles inscribed in given circle, the square has the maximum area.

Ques.10- Tangent to the circle $x^2 + y^2 = a^2$ at any point on it in the first quadrant makes intercepts OA and OB on x and y axes respectively, O being the center of circle find the minimum value of OA + OB