

VILLA MARIE DEGREE COLLEGE FOR WOMEN



Somajiguda, Hyderabad- 500082
Affiliated to Osmania University
Management Programs Approved by AICTE
Recognized by UGC u/s 2(f)
An ISO 9001:2015 Certified Institution
Accredited with B++ Grade by NAAC



**DEPARTMENT OF BUSINESS MANAGEMENT -BBA
ORGANIZES**

GUEST LECTURE ON DIFFERENTIATION

Date: 24th & 25th September 2024

Timings: 9:30 to 11:30

Target Audience: BBA 1st year
Business Analytics

Dress Code: Blazer

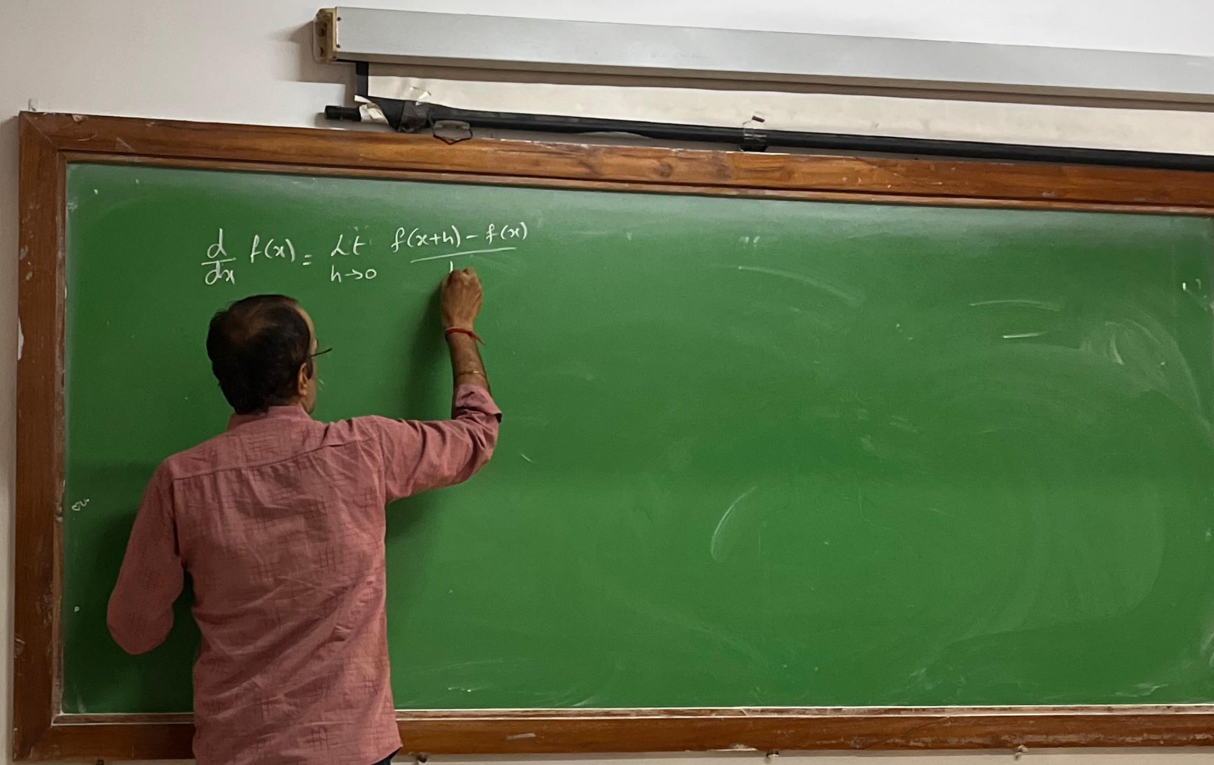
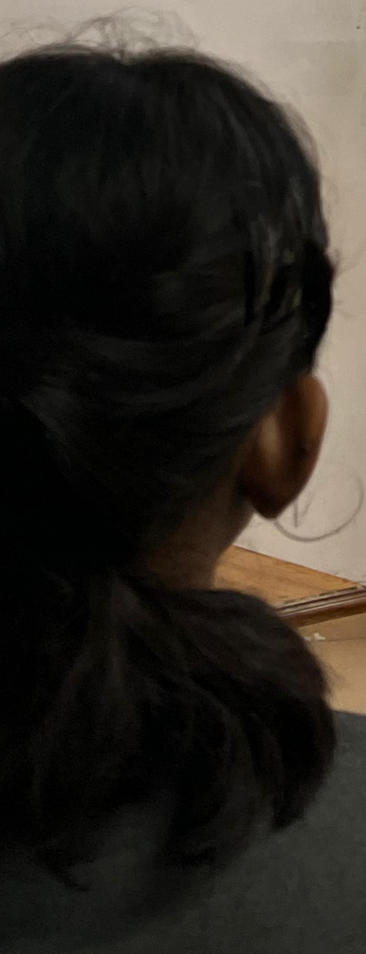
Venue: 2002



MR. PANKAJ OZA

**Faculty In Mathematics,
Villa Marie Junior College**

$$\frac{d}{dx} f(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$









①

$$x=75$$

→ Sub $x=75$ in

$$\frac{d^2y}{dx^2} = -2 < 0$$

∴ $y(x)P(x)$ is Max when $x=75$

→ To find Max

Sub $x=75$ in

$$y=P(x)=(150-x)x-1000$$

$$P(x)=(150-x)x-1000$$



25-7-24

I - PM
II - 3GL
III -
IV - II lang
V - EVS
VI - Maths

8) $y = f(x) = (150-x)x - 1000$ (1)

$y = (150-x)x - 1000$
 $y = 150x - x^2 - 1000$

$\rightarrow \frac{dy}{dx} = 150 - 2x$
 $\rightarrow \frac{d^2y}{dx^2} = -2 < 0$

\rightarrow To find Max
Set $x = 75$
 $y = f(75)$

$f(x) = (150-x)x - 1000$
 $x = 75$



25-7-24

$Q) y = p(x) = (150-x)x - 1000$ $\text{---} \textcircled{1}$
 $y = (150-x)x - 1000$
 $y = 150x - x^2 - 1000$
 $\rightarrow \frac{dy}{dx} = 150 - 2x$
 $\rightarrow \frac{dy}{dx} = 0$
 $\rightarrow P(x) = 150 - 2x$

$\text{---} \textcircled{2}$
 $\rightarrow \text{Sub } x = 75 \text{ in } \textcircled{1}$
 $\frac{dy}{dx} = 150 - 2(75) = 0$
 $\therefore y(p(x)) \text{ is Max when } x = 75$
 $\rightarrow \text{To find Max Profit}$
 $\text{Sub } x = 75 \text{ in } \textcircled{1}$
 $y = p(x) = (150 - 75)75 - 1000$
 $= 75 \times 75 - 1000$
 $= 5625 - 1000$
 $= 4625$

$p(x) = (150-x)x - 1000$

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