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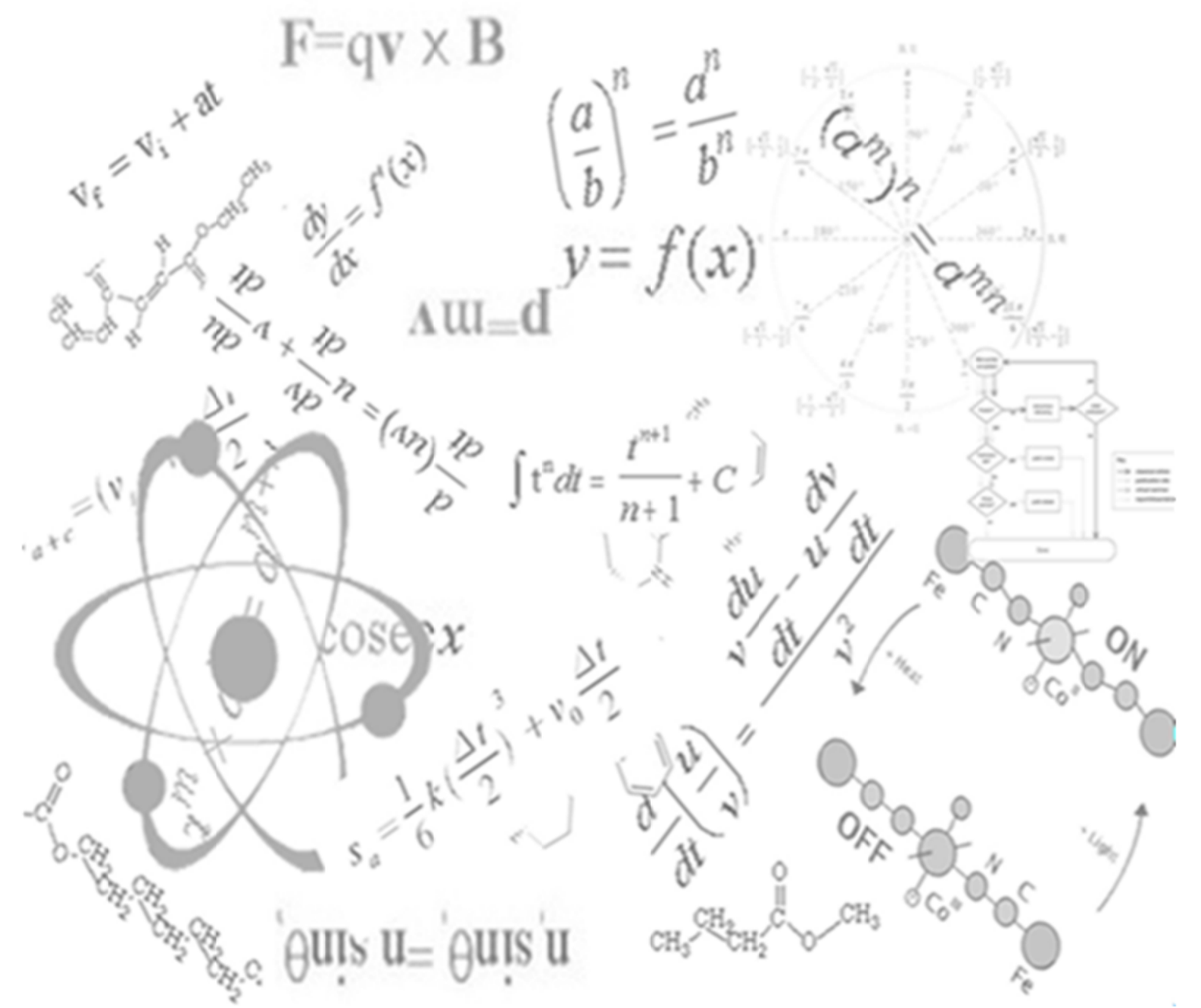
S4S coaching

Year 11- Mathematics Advanced

Introduction to differential calculus



The Tangent to a Curve and the Derivative of a Function Exam /21

1. (**3 marks**)
Differentiate from first principals f(x)=$4x^2 - 6x + 3$

2. (**3 marks**)
Differentiate from first principals f(x)=$\sqrt{x+2}$

3. (**2 marks**)
Differentiate from first principals f(x)=$1/2x^3$

4. (**2 marks**)
Find d/dx $\frac{1}{(1/2x+1)^2}$

5. (**2 marks**)
Find d/dx $\frac{1}{\sqrt{1/2x+1}}$

6. (**1 marks**)
Find d/dx $5x + \frac{3}{x^2}$

7. (**2 marks**)
Find d/dx $\frac{3x}{\sin x}$

8. (**2 marks**)
Find d/dx $\frac{1}{3x^3}$

9. (**2 marks**)
Find the equation of the tangent to the curve y=$4x^3 - 2x^2 - 4x + 2$ at x=2.
when x=2, y=18

10. (**2 marks**)
Find the equation of the normal to the curve y=$4x^3 - 2x^2 - 4x + 2$ at x=2.