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Subject	Applied Calculus.
Section	A
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Assignment	1st

⇒ Application of derivatives and integration in engineering:

The design and maintenance of public works such as roads, bridges, water, energy systems, airports, railways and ports,

- (1) Intervals of Increase and Decrease.
- (2) Critical points.
- (3) The first Derivative test for relative maximum & minimum.
- (4) Relative Maxima and minima.
- (5) Concavity and Inflection points.
- (6) The Second derivative test for relative maximum & minimum.
- (7) Curve Sketching with derivatives.
- (8) Optimization using the closed interval method.
- (9) Optimization using the first derivative test.

- (10) Optimization using the second derivative test.
- (11) Economics: Marginal Cost & Revenue.
- (12) Economics: Cost & revenue.
- (13) Optimization problems: Applications to Economics.

### ⇒ Application OF integration

Application integration is the process of enabling independently designed applications to work together. Commonly required capabilities include:

- 1- Area between curves.
- 2- Distance, velocity, Acceleration.
- 3- volume.
- 4- Average value of a function.
- 5- work.
- 6- Center of Mass.
- 7- Kinetic energy; improper integrals.
- 8- Probability.
- 9- Arc length.
- 10- Surface Area.

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THE END