

Q :) As per IS:456 2000, in design of flexural members, for curtailment, reinforcement shall extend beyond the point at which it is no longer required to resist flexure for a distance equal to ____, whichever is greater, except at simple support or end of cantilever.

[UPRVUNL JE 2019]

A : The overall depth of the member or 16 times the bar diameter

B : The effective depth of the member or 16 times the bar diameter

C : The effective depth of the member or 12 times the bar diameter

D : The overall of the member or 12 times the bar diameter.

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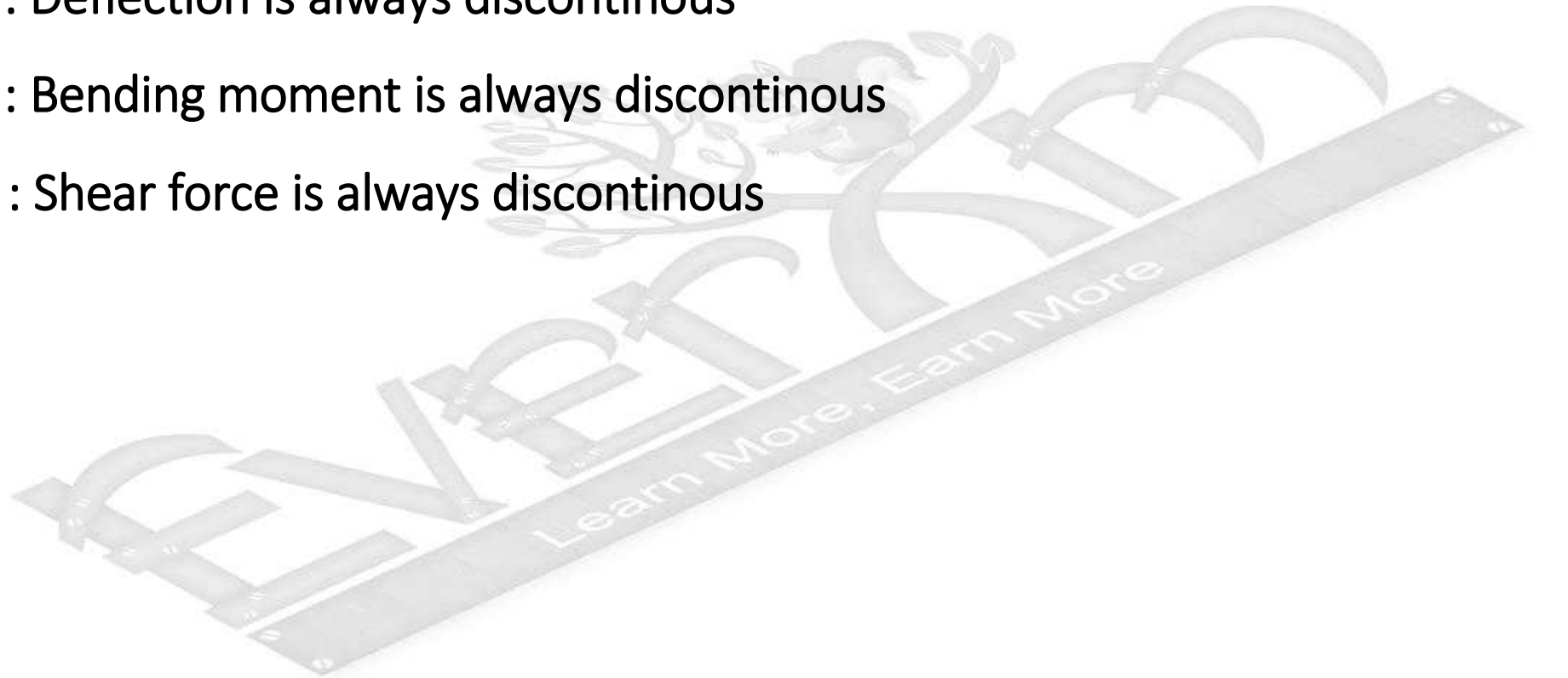
Q :) At an internal hinge _____: [UPPCL AE 2018]

A : Slope is always discontinuous

B : Deflection is always discontinuous

C : Bending moment is always discontinuous

D : Shear force is always discontinuous



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Q :) Under-reinforced concrete beams fail due to [UPPCL 2018]

A : Crushing of concrete

B : Ductile failure of reinforcing bars

C : Tensile failure of concrete

D : Bond failure of reinforcing bars



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Q :) Which of the following theorem states that " The displacement at point A due to load at B is same as displacement at point B due to the same load acting at point A, the displacement being measured in the directions of loads;? [UPPCL AE 2019]

- A : Maxwell's theorem of reciprocal deflection
- B : Castigliano's theorem of reciprocal deflection
- C : Rayleigh Ritz theorem of reciprocal deflection
- D : Muller-breslau theorem of reciprocal deflection.

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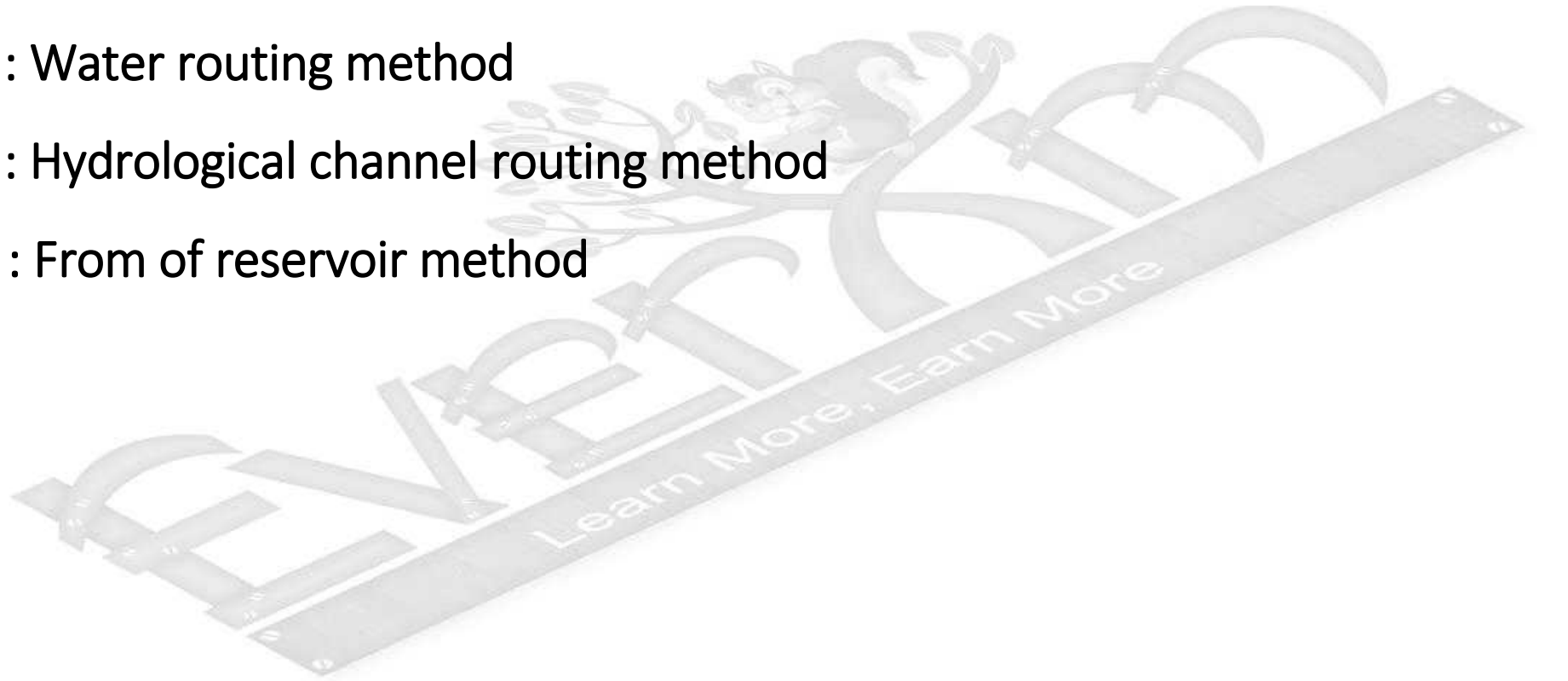
Q :) The Muskingum method used for flood routing of river is a:
[UPPCL 2019]

A : Hydraulic routing method

B : Water routing method

C : Hydrological channel routing method

D : From of reservoir method



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Q :) A point in a strained material is subjected to two mutually perpendicular stress of 150 MPa (tensile) and 50 MPa (compressive), then what will be the magnitude of maximum shear stress in the component?

[MPSC AE 2017]

A : 50 MPa

B : 100 MPa

C : 150 MPa

D : 200 MPa

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Q :) A steel bar of 5 mm is heated from 15° to 40°C and it is free to expand. The bar will induce _____. [MPSC AE 2017]

A : No stress

B : Shear stress

C : Tensile stress

D : Compressive stress



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Q :) Printer's ink is an example of [MPSC AE 2017I]

A : Newtonian fluid

B : Non-Newtonian fluid

C : Thixotropic substance

D : Elastic solid



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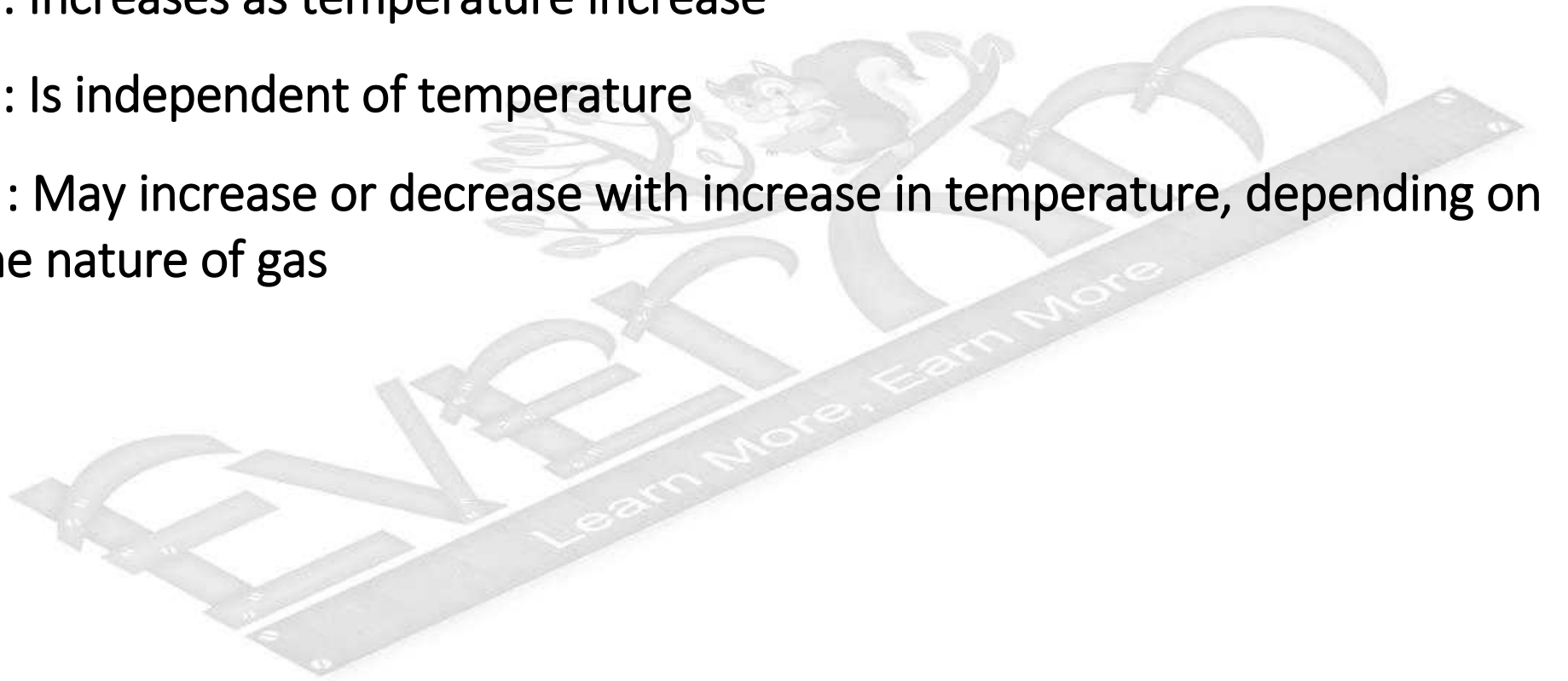
Q :) Dynamic viscosity of a gas [MPSC AE 2017]

A : Increases as temperature decrease

B : Increases as temperature increase

C : Is independent of temperature

D : May increase or decrease with increase in temperature, depending on the nature of gas



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Q :) In the plinth area estimation, which of the following is considered? [DMRC JE 2020]

A : Unsupported portico

B : Unenclosed balcony

C : Court yard

D : Verandah



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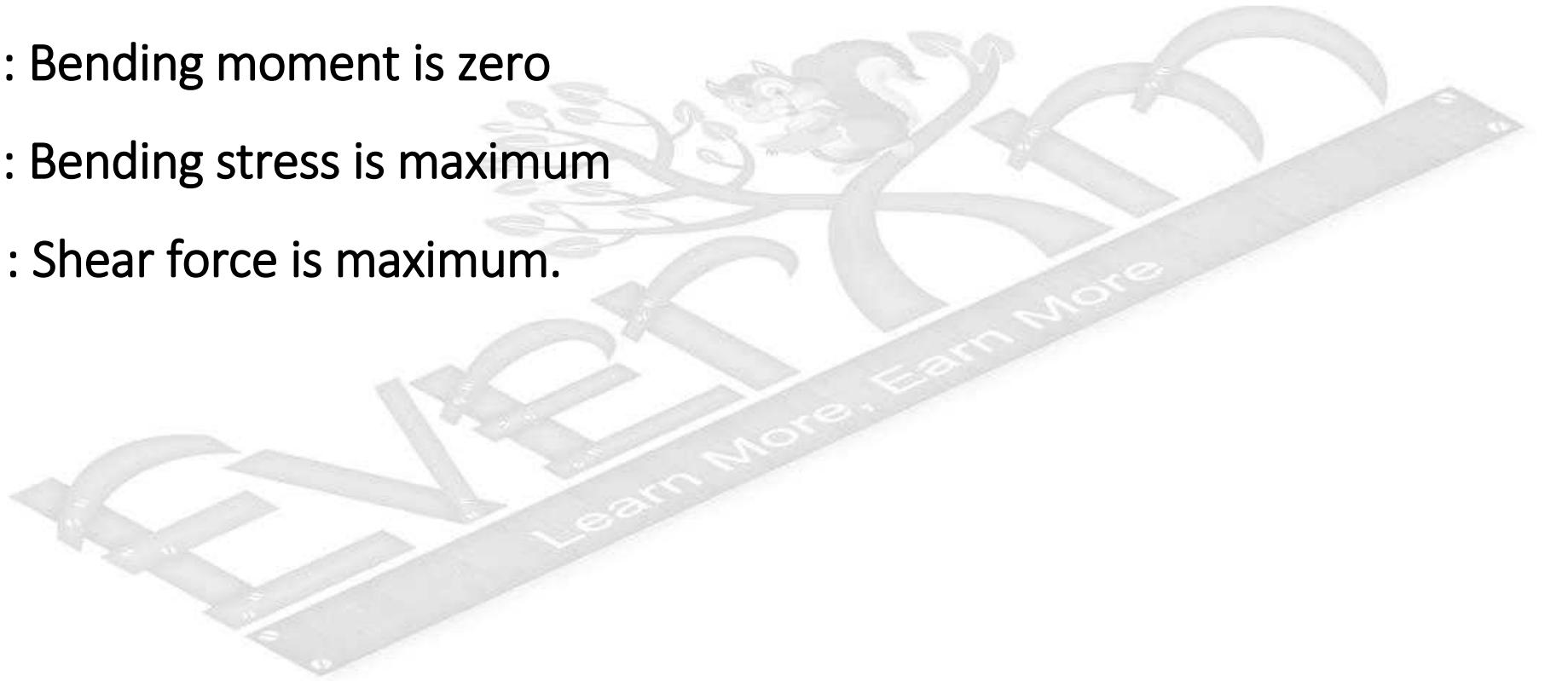
Q :) When a beam is subjected to pure bending, then as a result, the; [DMRC JE 2020]

A : Shear force is zero

B : Bending moment is zero

C : Bending stress is maximum

D : Shear force is maximum.



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Q :) If the ratio of two principal stresses is $\frac{1}{2}$ what is the ratio of minimum principal stress to maximum shear stress? [GPSC AE 2020]

A : 43832

B : 1

C : 2

D : 4



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Q :) If Mohr's circle for two dimensional stress system has zero radius, both principal stresses are [GPSC AE 2020]

A : Of equal magnitude and of same sign

B : Of equal magnitude and of opposite sign

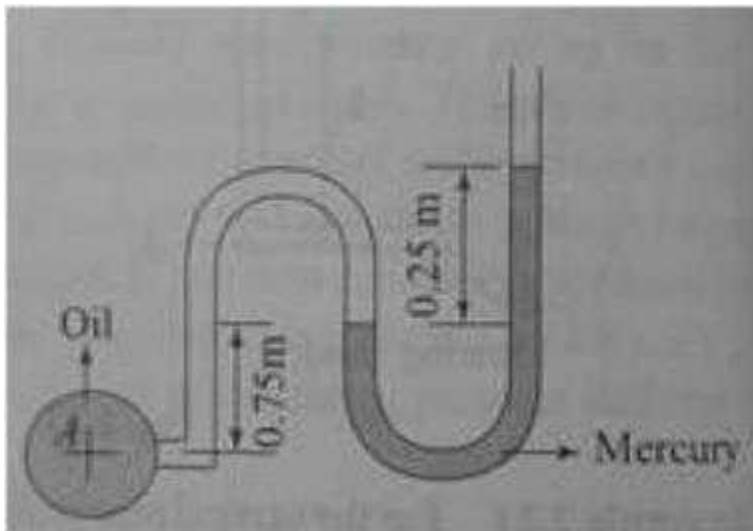
C : Equal to zero and shear stress is non-zero

D : Equal to zero and shear stress is also equal to zero

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Q :) The figure below shows a manometer connected to a pipeline containing oil of specific gravity 0.8. If the specific gravity of mercury is 13.6, the pressure of oil in terms of height of the water will be:
[LMRC JE 2020]



A : 3.2 m

B : 5 m

C : 1 m

D : 4 m

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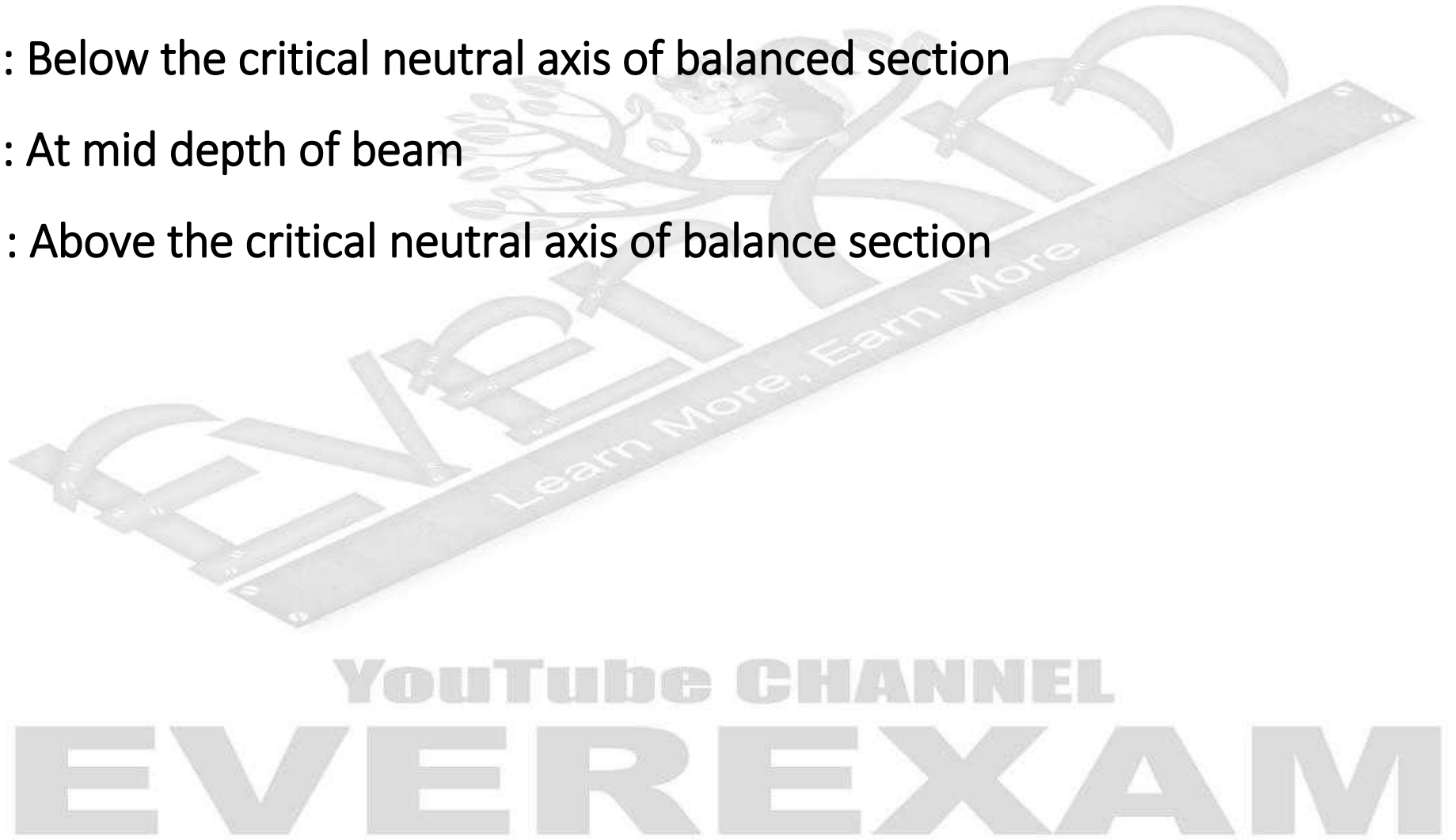
Q :) For an under reinforced beam section, the neutral axis lies _____
[LMRC AE 2020]

A : At the same level of critical neutral axis of balance section

B : Below the critical neutral axis of balanced section

C : At mid depth of beam

D : Above the critical neutral axis of balance section



Q :) Which of the following method is NOT a force method?

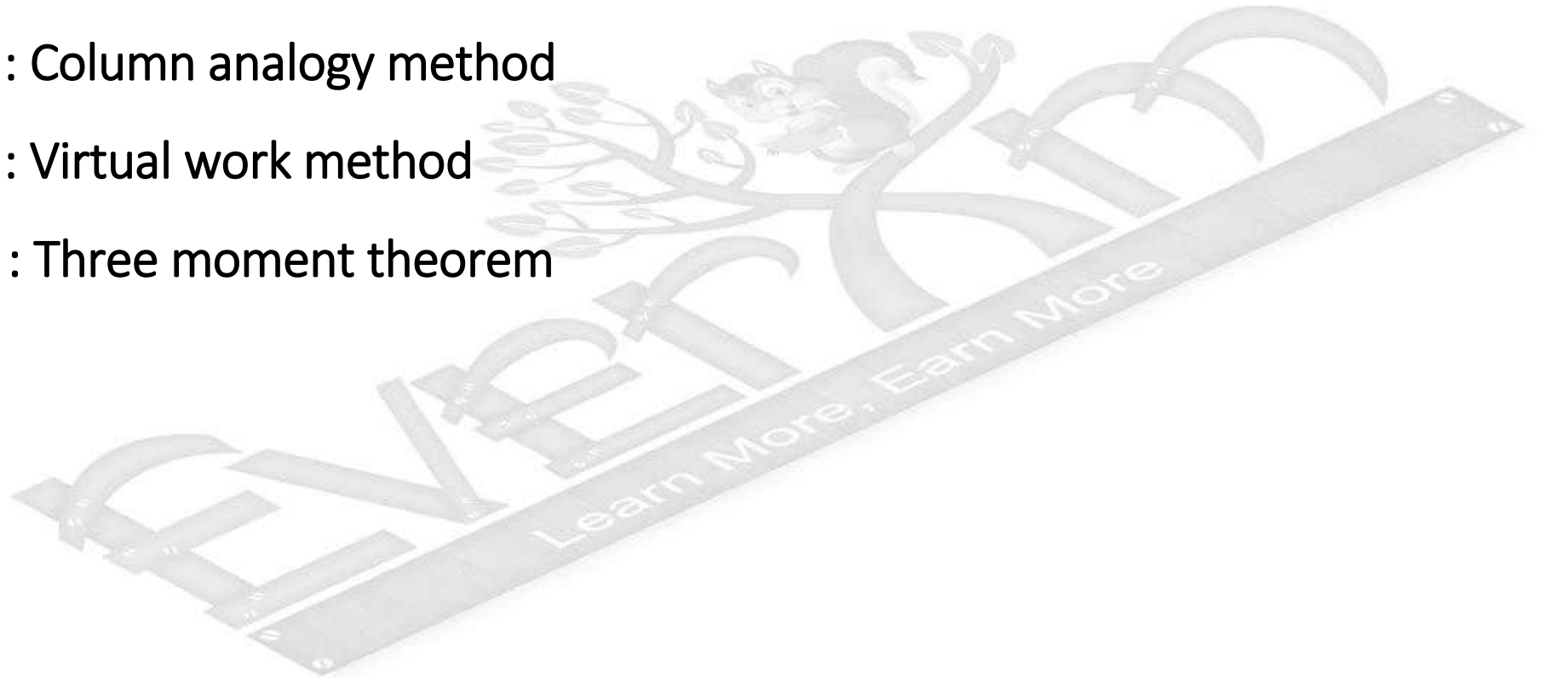
[LMRC AE 2020]

A : Slope deflection method

B : Column analogy method

C : Virtual work method

D : Three moment theorem



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Q :) In limit state design the limiting depth of neutral axis for Fe-500 for beam having effective depth "d" is

[JPSC AE 2020]

A : 0.43d

B : 0.48d

C : 0.46d

D : 0.53d



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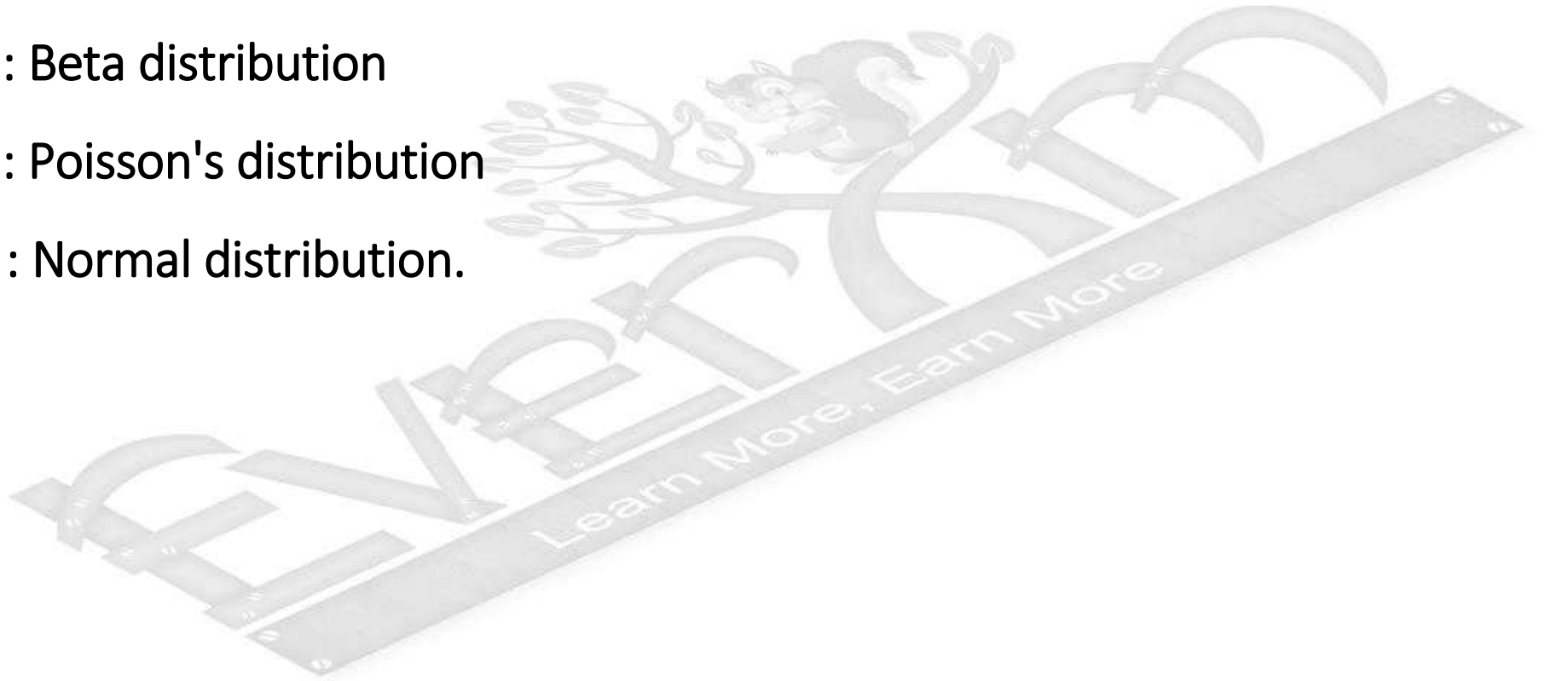
Q :) In PERT analysis the time estimates of activities correspond to
[JPSC AE 2020]

A : Binomial distribution

B : Beta distribution

C : Poisson's distribution

D : Normal distribution.



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