Q:) If the nominal shear stress(Ty at a section) does not exceed the permissible shear stress (TC)

A : Minimum shear reinforcement is still provided

B : Shear reinforcement is provided to resist the nominal shear stress

C : No shear reinforcement is provided

D : Shear reinforcement is provided for the difference of the two

Q:) In a reinforced concrete retaining wall a shear key is provided, if the

A : Shear stress in the vertical stem is excessive
B : Shear force in the toe slab is more than that in the heel slab
C : Retaining wall is not safe against sliding
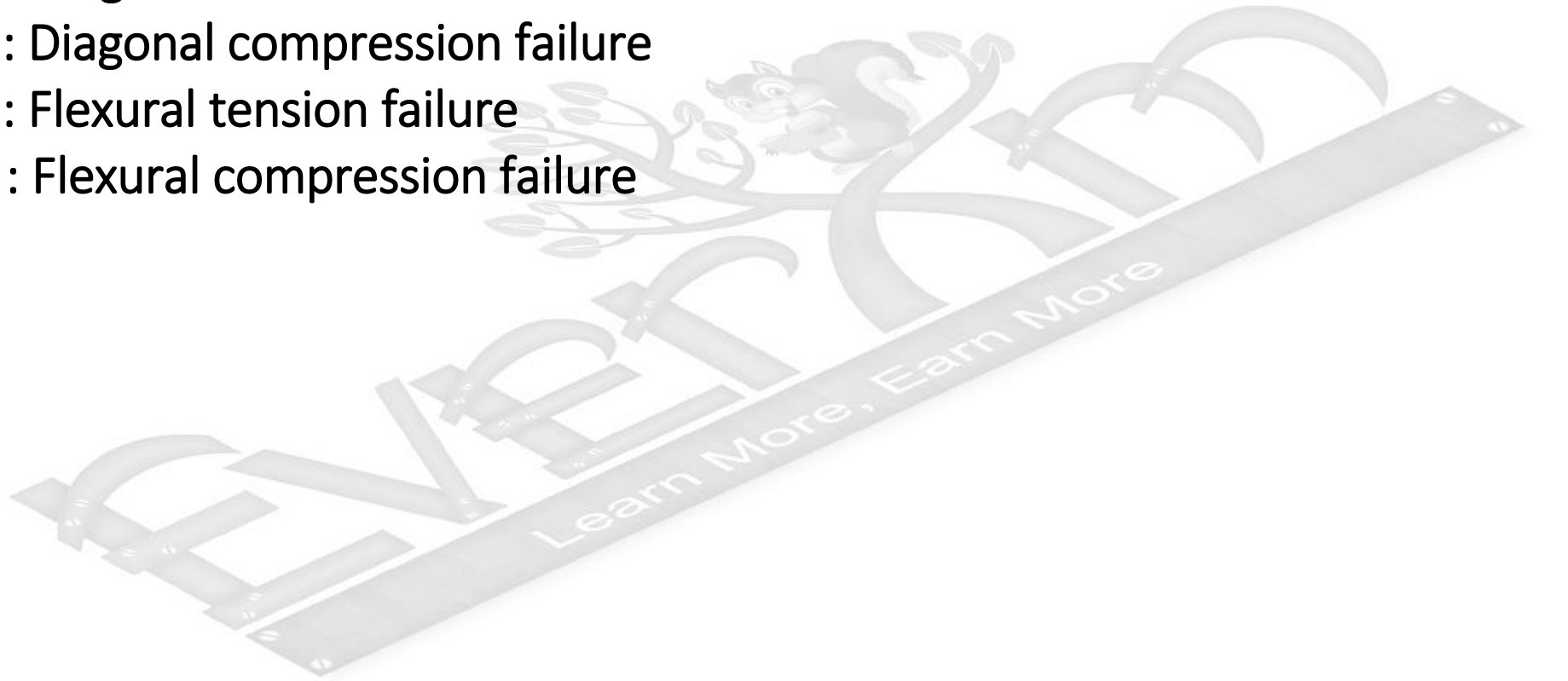D : Retaining wall is not safe against overturning

Q:) The maximum permissible shear stress T_{cmax} given in BIS 456-1978 is based on

A : Diagonal tension failure

B : Diagonal compression failure

C : Flexural tension failure

D : Flexural compression failure

Q:) Which one of the following statements is correct? Minimum shear reinforcement in beams is provided in the form of stirrups

A : To resist extra shear force due to live load

B : To resist the effect of shrinkage of concrete

C : To resist principal tension

D : To resist shear cracks at the bottom of beams

Q:) Shear strength of concrete in a reinforced concrete beam is function of which of the following:
1. Compressive strength of concrete
2. Percentage of shear reinforcement
3. Percentage of longitude reinforcement in tension in the section
4. Percentage total longitude reinforcement in the section
Select the correct answer using the code given below

A : 1,2 and 4
B : 1,2 and 3
C : Only 1 and 3
D : Only 1 and 4

Q:) A beam is designed for uniformly distributed loads causing compression in the supporting columns. Where is the critical section for shear? (d is effective depth of beam the L d is development length)

A : A distance Li3 from the face of the support
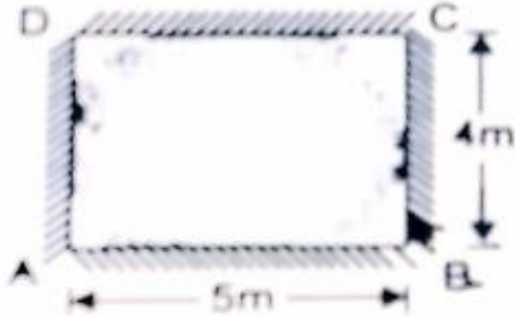B : A distance from the face of the support
C : At the centre of the support
D : At the mid span of the beam

Q:) The RC slab simply supported on all edges as in above figure is subjected to a total UDL of 12 kN/m². The maximum shear force/unit length along the edge 'BC' is

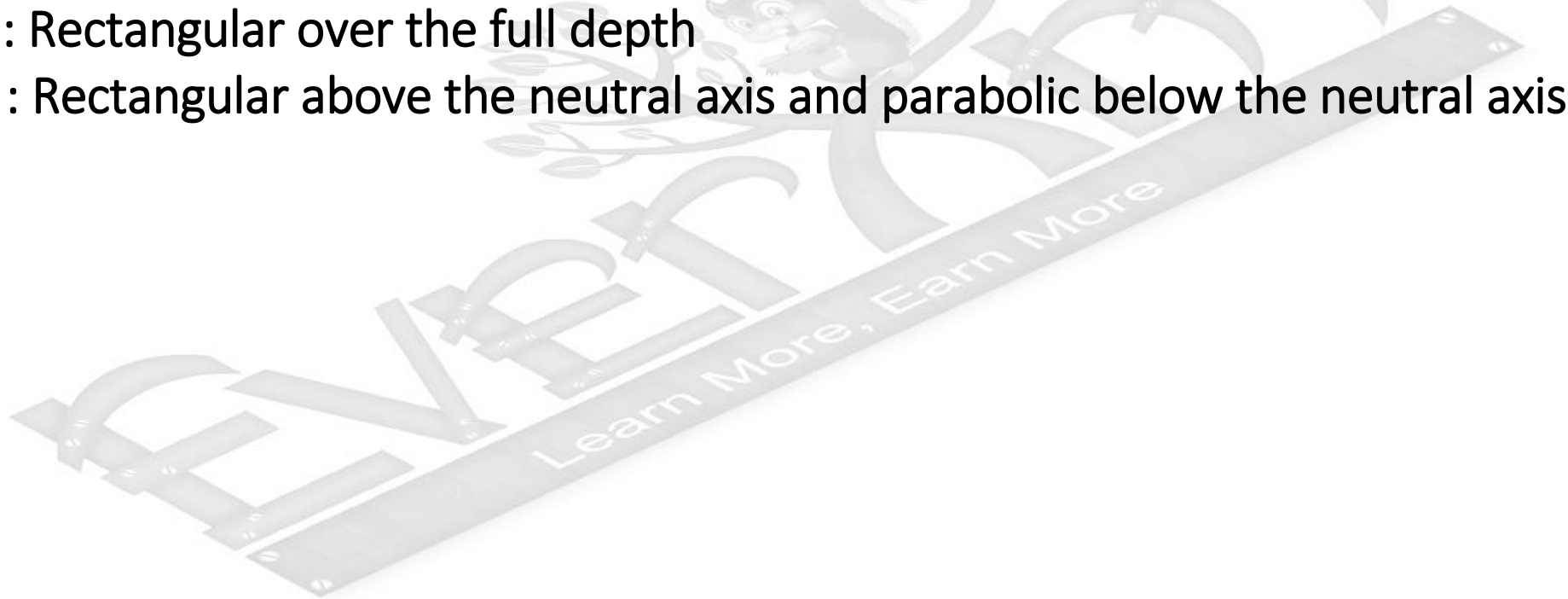A : 16 kN

B : 12 kN

C : 8 kN

D : 30 kN

Q:) In a reinforced concrete section the of the nominal shear stress diagram is

A : Parabolic over the full depth

B : Parabolic above the neutral axis and rectangular below the neutral axis

C : Rectangular over the full depth

D : Rectangular above the neutral axis and parabolic below the neutral axis
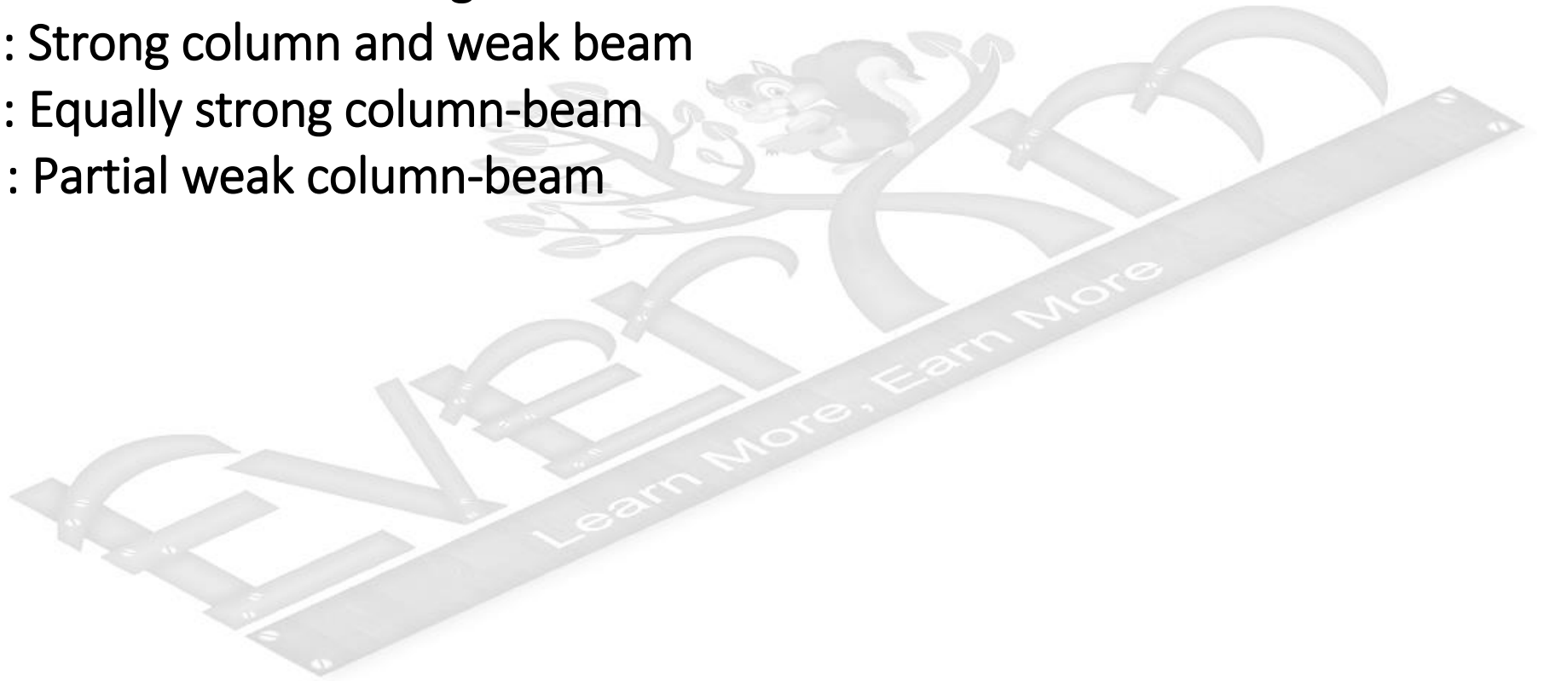
Q:) On which one of the following concept is the basic principal of structural design based?

A : Weak column strong beam

B : Strong column and weak beam

C : Equally strong column-beam

D : Partial weak column-beam

Q:) If any tension reinforcement in an RC beam attains its Yield stress during loading before the concrete in the compression zone fails due to crushing, the beam is said to be

A : Under-reinforced

B : over-reinforced

C : Balanced

D : Non-homogenous

Q:) The minimum strain at failure in tension steel having Yield stress F_y = MPa and Young's Modulus E_s = 200GPa,as per Limit State 80. Method of design, is

A : 0.0025
B : 0.0038
C : 0.0045
D : 0.005

Q:) What is the pH value of potable water, as specified by IS 456-2000?

A : Equal to 7

B : Between 6 and 9

C : Less than 6

D : Not less than 6

Q:) According to IS 456-2000 which one of the following statements about the depth of neutral axis $x_{u,bal}$ for a balanced reinforced concrete section is correct?

A : $X_{u,bal}$ depends on the grade of concrete only

B : $X_{u,bal}$ depends on the grade of steel only

C : $X_{u,bal}$ depends on both the grade of concrete and steel

D : $X_{u,bal}$ does not depends on the grade of concrete and grade of steel
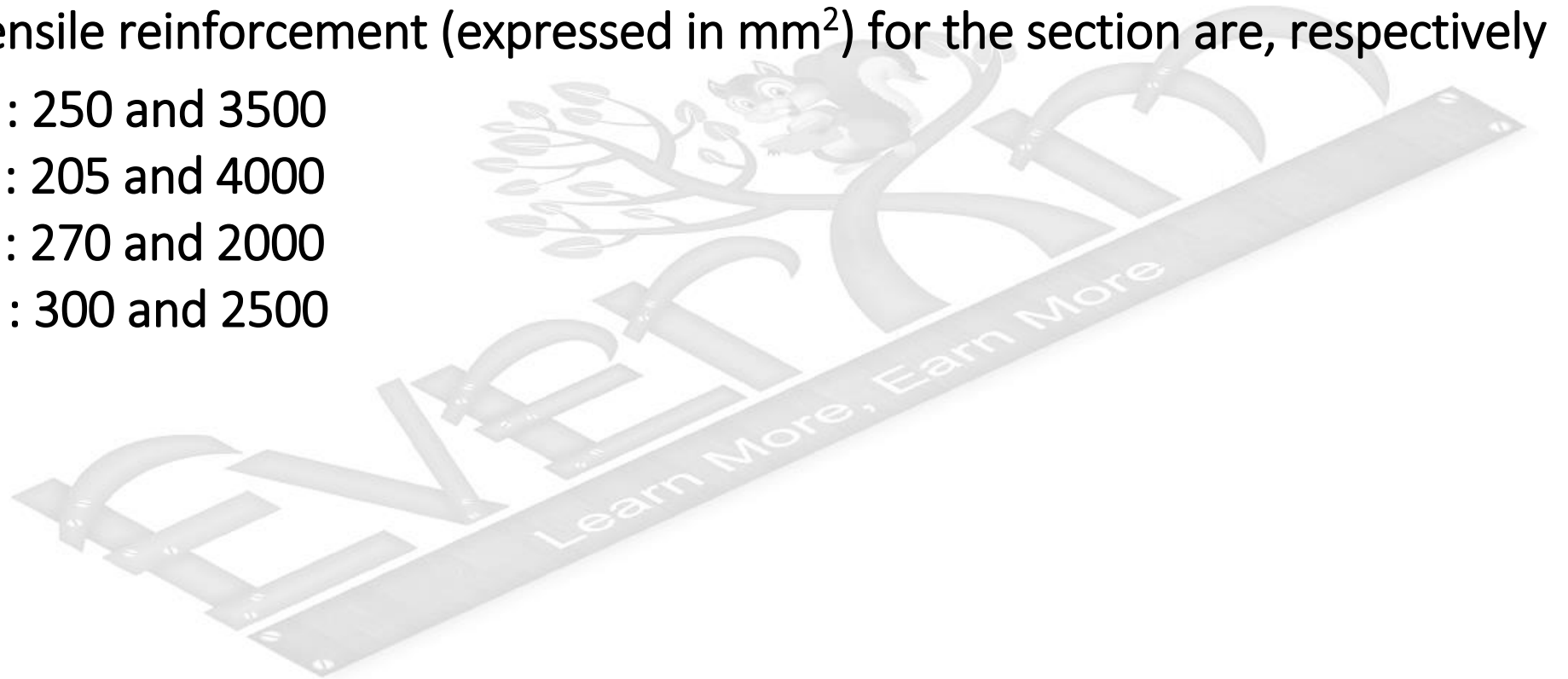
Q:) A reinforced concrete (RC) beam with "wrd missing" 250 mm and effective depth of 400 "wrd missing" reinforced with Fe415 steel. As per "wrd missing" provision is IS 456-2000, the minimum and maximum amt. of tensile reinforcement (expressed in mm^2) for the section are, respectively

A : 250 and 3500

B : 205 and 4000

C : 270 and 2000

D : 300 and 2500

Q:) A reinforced-concrete slab with effective "wrd missing" of 80 mm is simply supported at "wrd missing" end on 230 mm thick masonry "wrd missing" centre-to-centre distance between the walls is 3.3 m. As per IS 456:2000, the effective span of the slab (in m, up to two decimal places) is_____