

**Q.1) If the material of the base of the casgrande liquid limit device on which the cup containing soil paste drops is softer than the standard hard rubber, then**

- a. The liquid limit of soil always increases**
- b. The liquid limit of soil always decreases**
- c. The liquid limit of soil may increase**
- d. The liquid limit of soil may decrease**

**Q.2) If the water table rises upto ground surface then the**

- a. Effective stress is reduced due to decrease in total stress only but pore water pressure does not change**
- b. Effective stress is reduced due to increase in pore water pressure only but total stress does not change**
- c. Total stress is reduced due to increase in pore water pressure only but effective stress does not change**
- d. Total stress is increased due to decrease in pore water pressure but effective stress does not change**

Q.3) terzaghi's basic differential equation for one dimensional consolidation of clayey soils is

a.  $\frac{\partial \bar{u}}{\partial t} = C_v \frac{\partial \bar{u}}{\partial z}$

b.  $\frac{\partial \bar{u}}{\partial z} = C_z \frac{\partial^2 \bar{u}}{\partial t^2}$

c.  $\frac{\partial^2 \bar{u}}{\partial t} = C_v \frac{\partial \bar{u}}{\partial z}$

d.  $\frac{\partial \bar{u}}{\partial t} = C_v \frac{\partial^2 \bar{u}}{\partial^2 z}$



**Q.4) The slope of isochrones at any point at a given time indicates the rate of change of**

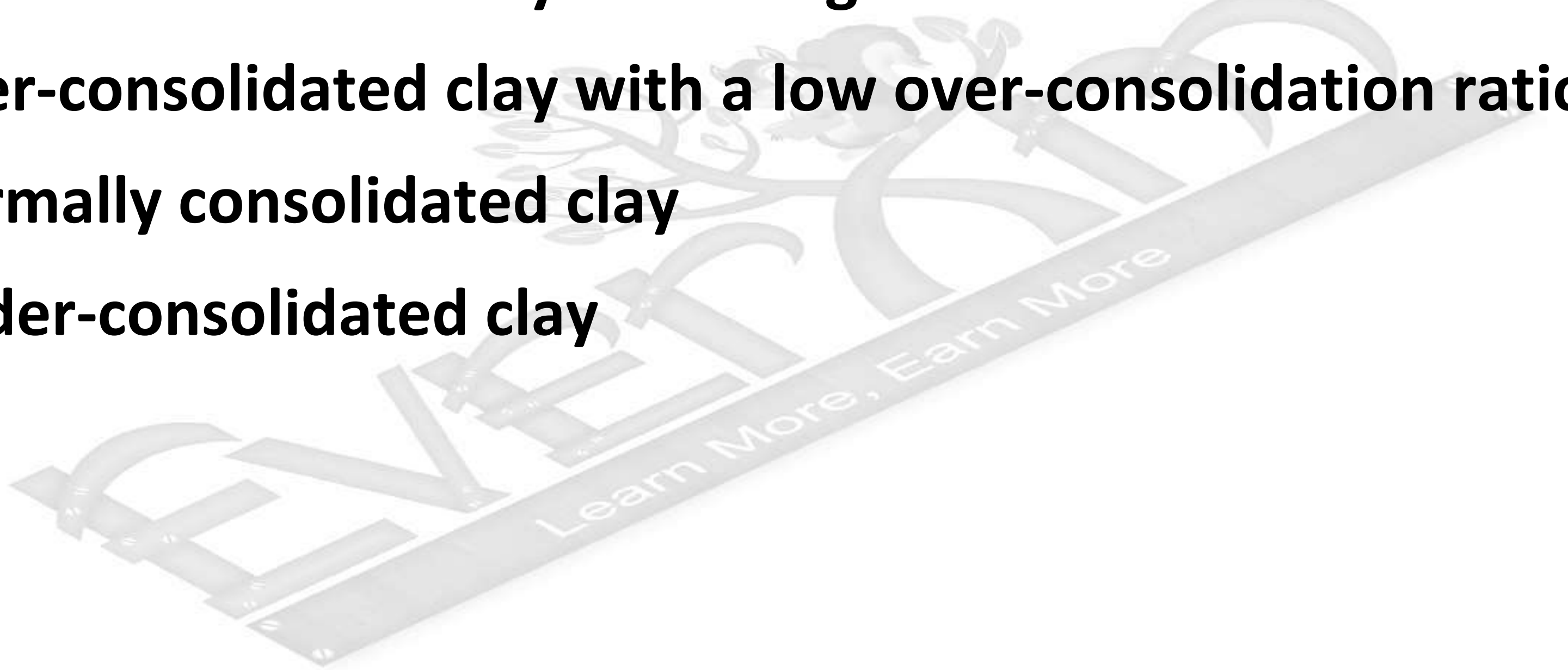
- a. Effective stress with time**
- b. Effective stress with depth**
- c. Pore water pressure with depth**
- d. Pore water pressure with time**

**Q.5) The value of compression index for a remoulded sample whose liquid limit is 50% is**

- a. 0.028**
- b. 0.28**
- c. 0.36**
- d. 0.036**



- Q.6) Which one of the following clays behaves like a dense sand**
- a. Over-consolidated clay with a high over-consolidation ratio**
  - b. Over-consolidated clay with a low over-consolidation ratio**
  - c. Normally consolidated clay**
  - d. Under-consolidated clay**

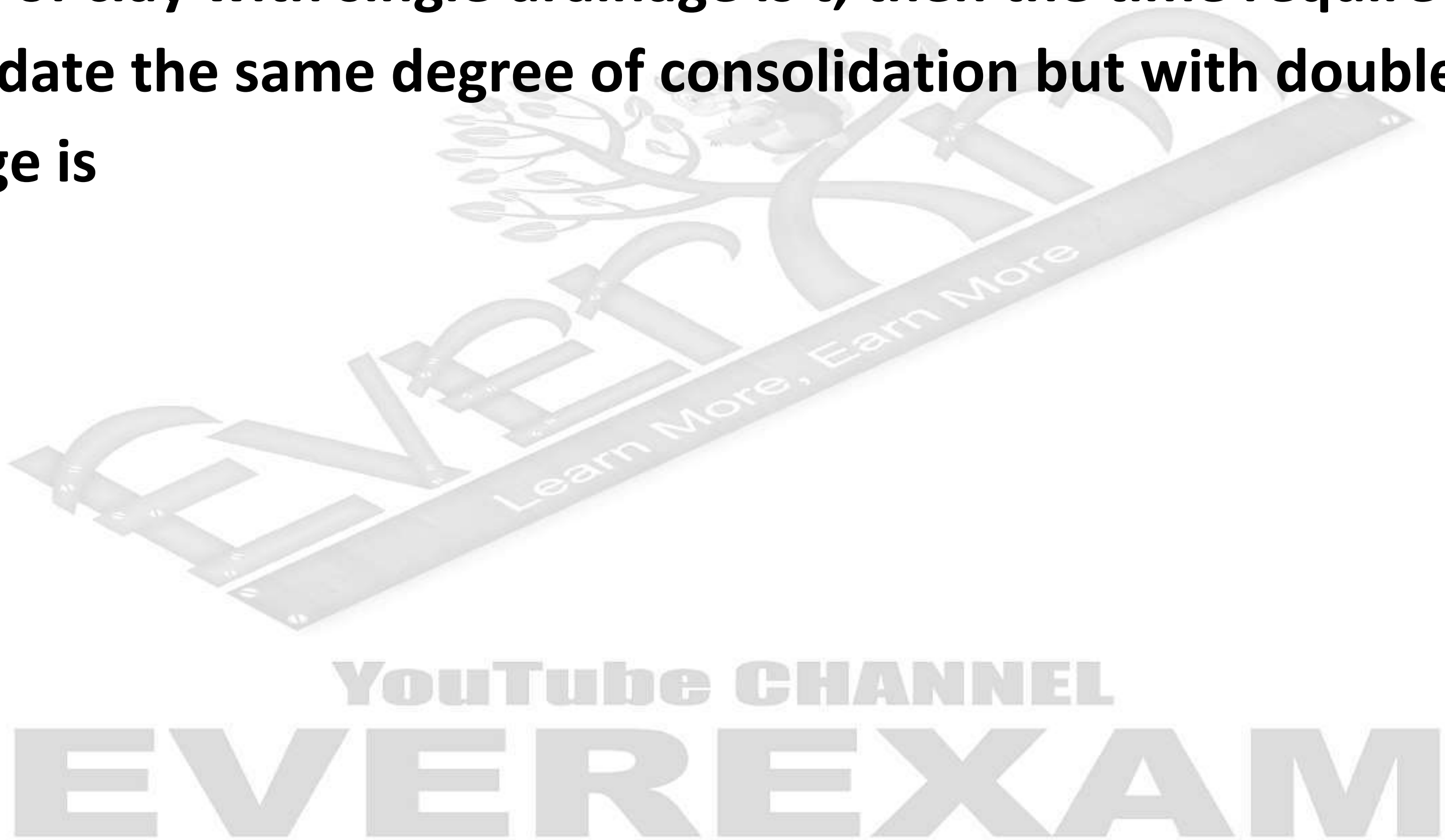


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**Q.7) If the time required for 50% consolidation of a remoulded sample of clay with single drainage is  $t$ , then the time required to consolidate the same degree of consolidation but with double drainage is**

- a.  $t/4$**
- b.  $t/2$**
- c.  $2t$**
- d.  $4t$**



**Q.8) Coefficient of consolidation for clays normally**

- a. Decreases with increase in liquid limit**
- b. Increase with increase in liquid limit**
- c. First increases and then decreases with increase in liquid limit**
- d. Remains constant at all liquid limits**



**Q.9) The ultimate consolidation settlement of a structure resting on a soil**

- a. Decreases with the increase in the initial voids ratio**
- b. Decreases with the decrease in the plastic limit**
- c. Increase with the increase in the initial voids ratio**
- d. Increases with the decrease in the porosity of the soil**

**Q.10) With the increase in the amount of compaction energy**

- a. Optimum water content increases but maximum dry density decreases**
- b. Optimum water content decreases but maximum dry density increases**
- c. Both optimum water content and maximum dry density increases**
- d. Both optimum water content and maximum dry density decrease.**

**Q.11) The temporary adjustment of a prismatic compass are**

**i) Centering**

**ii) Leveling**

**iii) Focusing the prism**

**the correct order is**

**a. (i), (iii), (ii)**

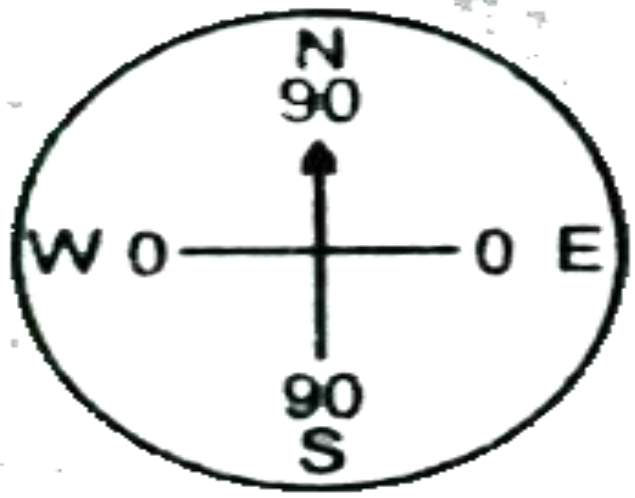
**b. (i), (ii), (iii)**

**c. (ii), (iii), (i)**

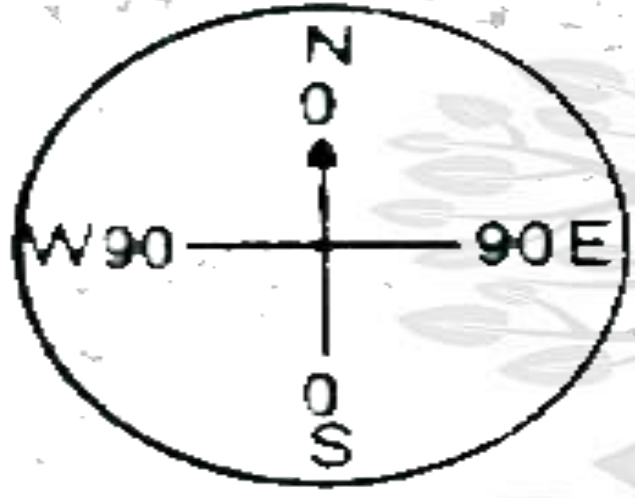
**d. (iii), (i), (ii)**



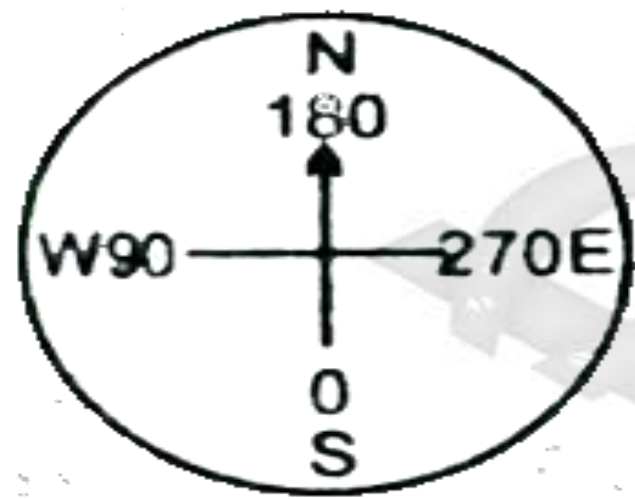
Q.12) Which of the figures shown in fig.2.3 represents the correct graduation in a surveyor's compass ?



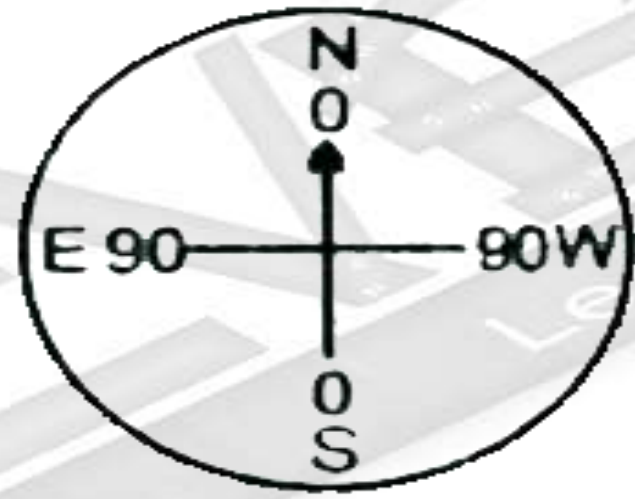
(a)



(b)



(c)



(d)

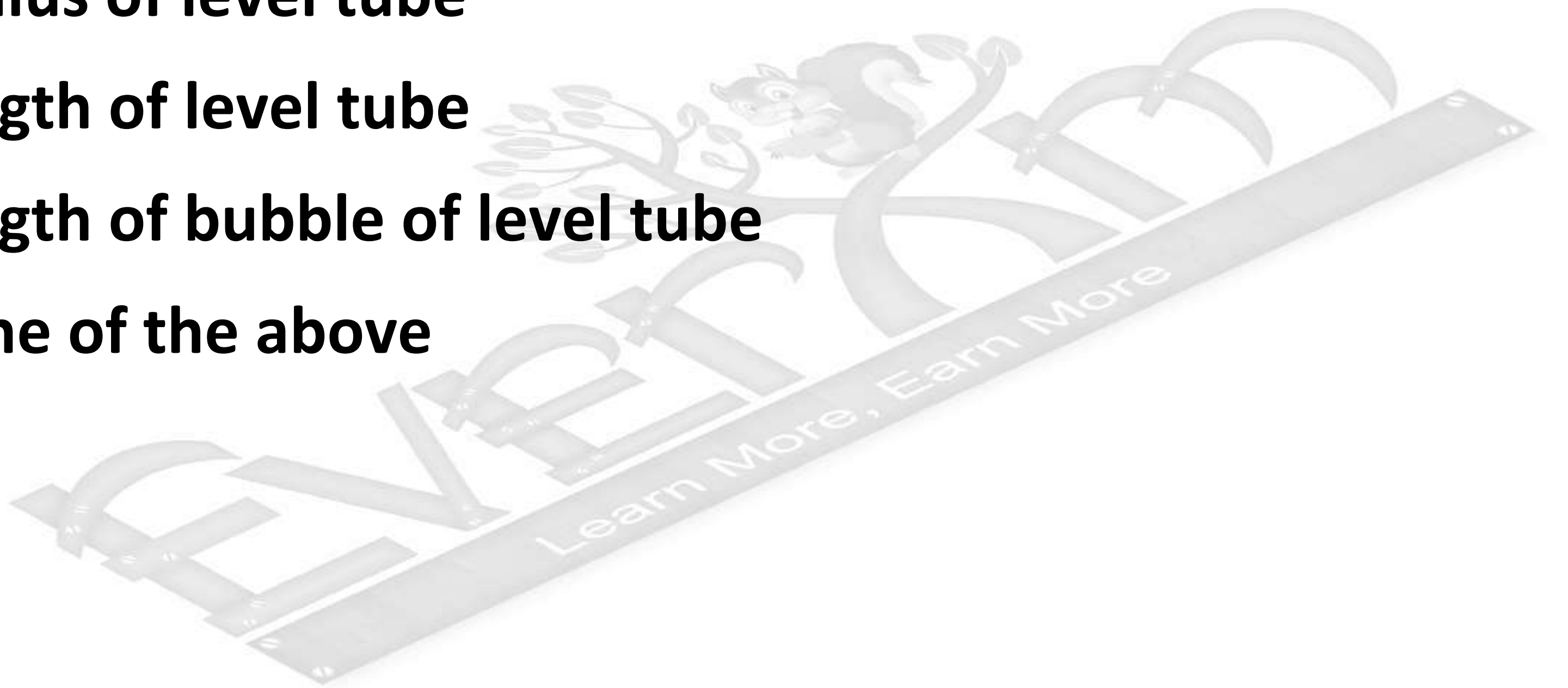
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**Q.13) Which of the following errors is not eliminated by the method of repetition of horizontal angle measurement**

- a. Error due to eccentricity of verifiers**
- b. Error due to displacement of station signals**
- c. Error due to wrong adjustment of line of collimation and trunion axis**
- d. Error due to inaccurate graduation**

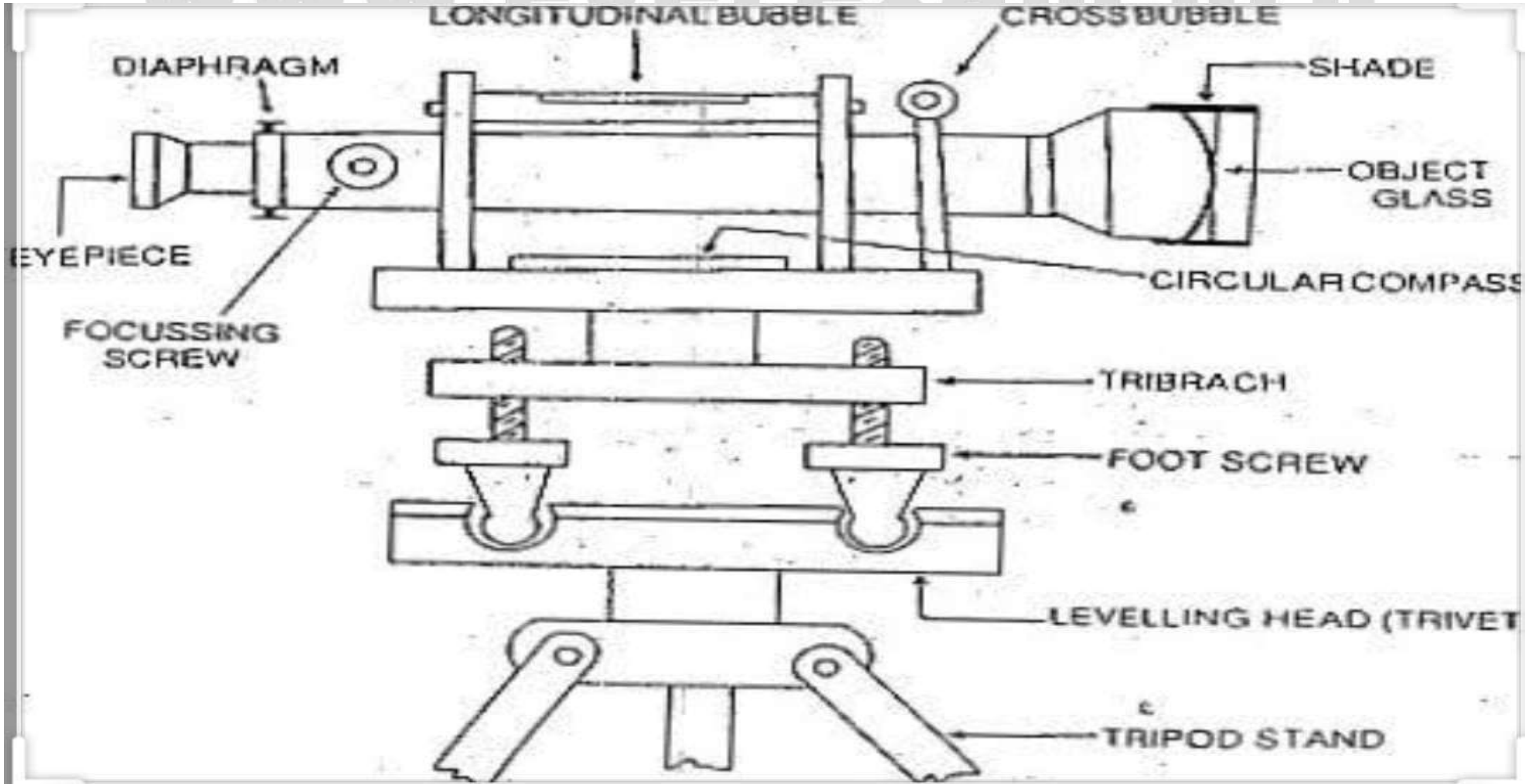
**Q.14) Sensitiveness of a level tube is designated by**

- a. Radius of level tube**
- b. Length of level tube**
- c. Length of bubble of level tube**
- d. None of the above**



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**Q.15) Dumpy level is most suitable when**

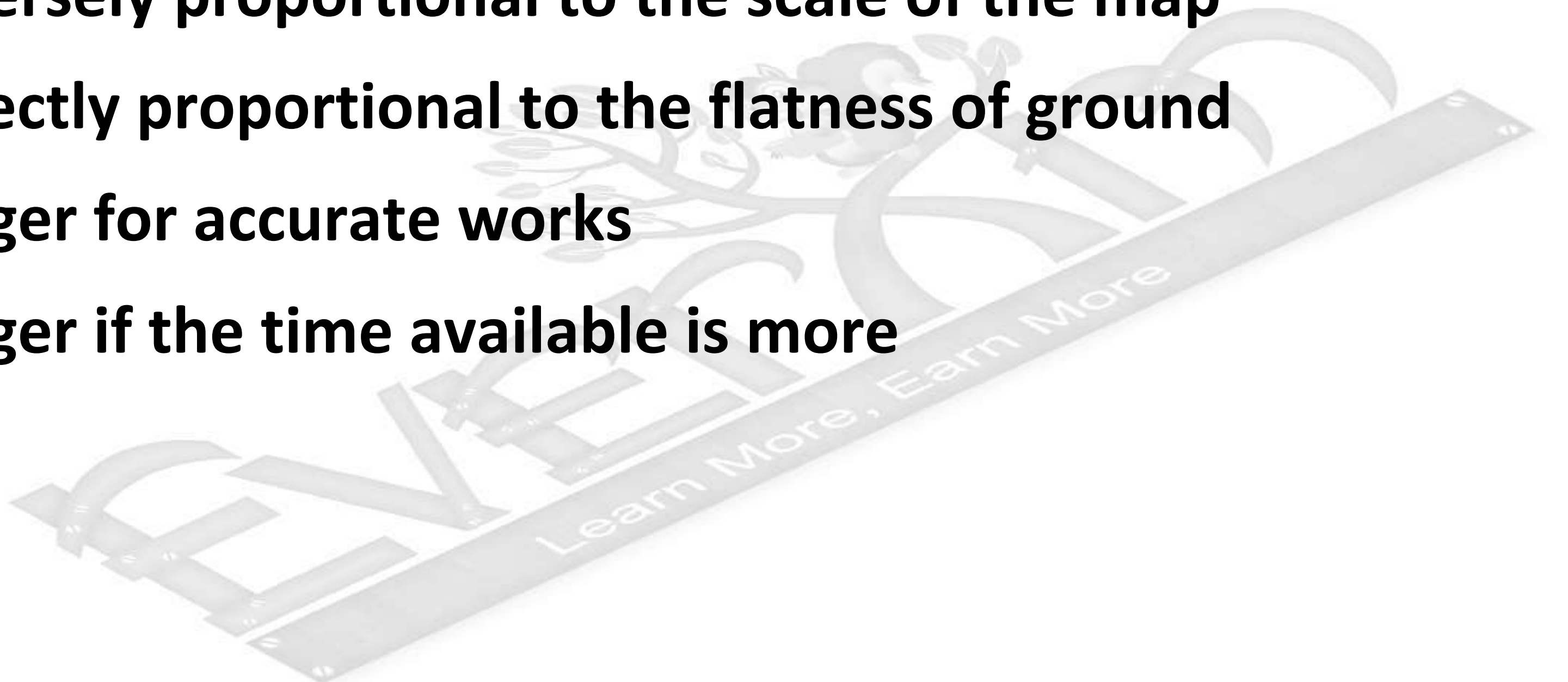
- a. The instrument is to be shifted frequently**
- b. Fly leveling is begin done over long distance**
- c. Many readings are to be taken from a single setting of the instrument**
- d. All of the above**





**Q.16) Contour interval is**

- a. Inversely proportional to the scale of the map**
- b. Directly proportional to the flatness of ground**
- c. Larger for accurate works**
- d. Larger if the time available is more**



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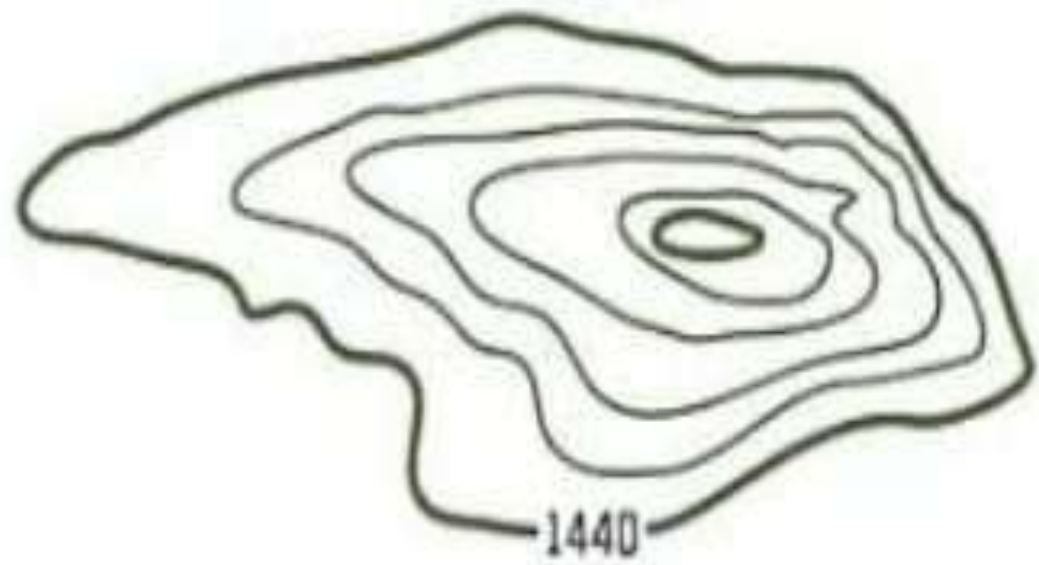
**Q.17) A series of closely spaced contour lines represents a**

- a. Steep slope**
- b. Gentle slope**
- c. Uniform slope**
- d. Plane surface**

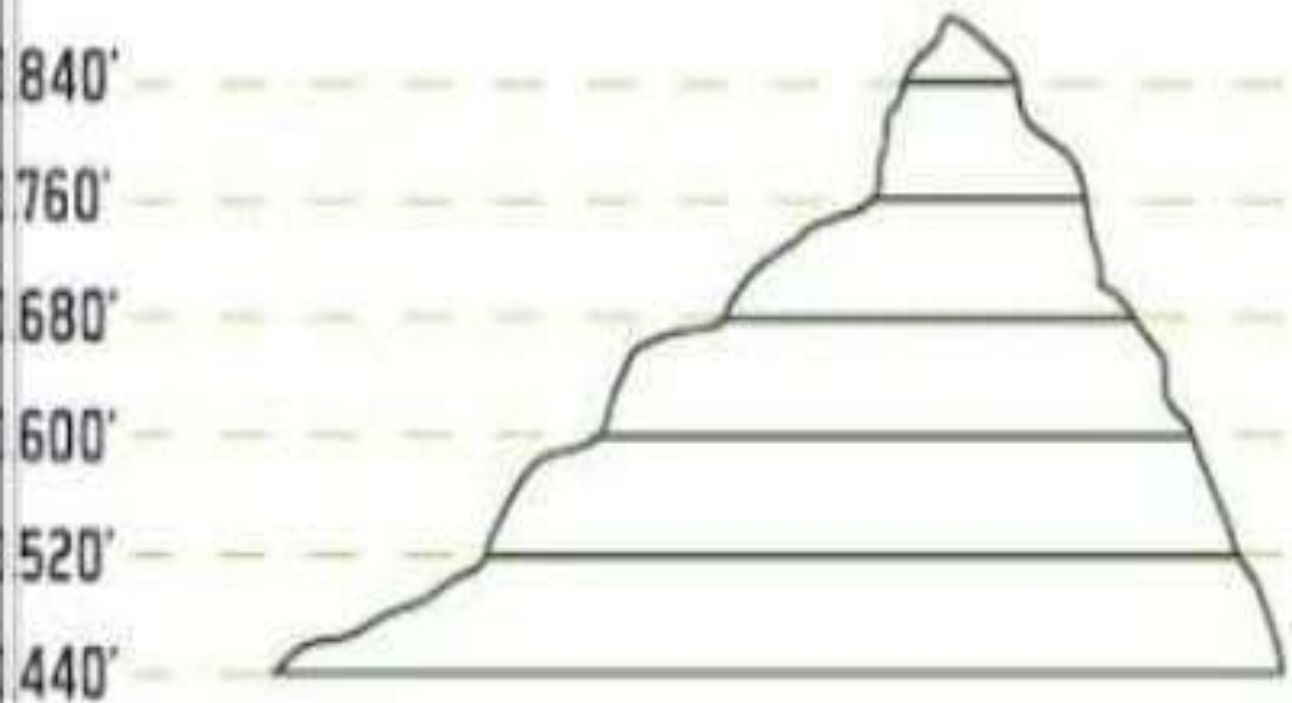


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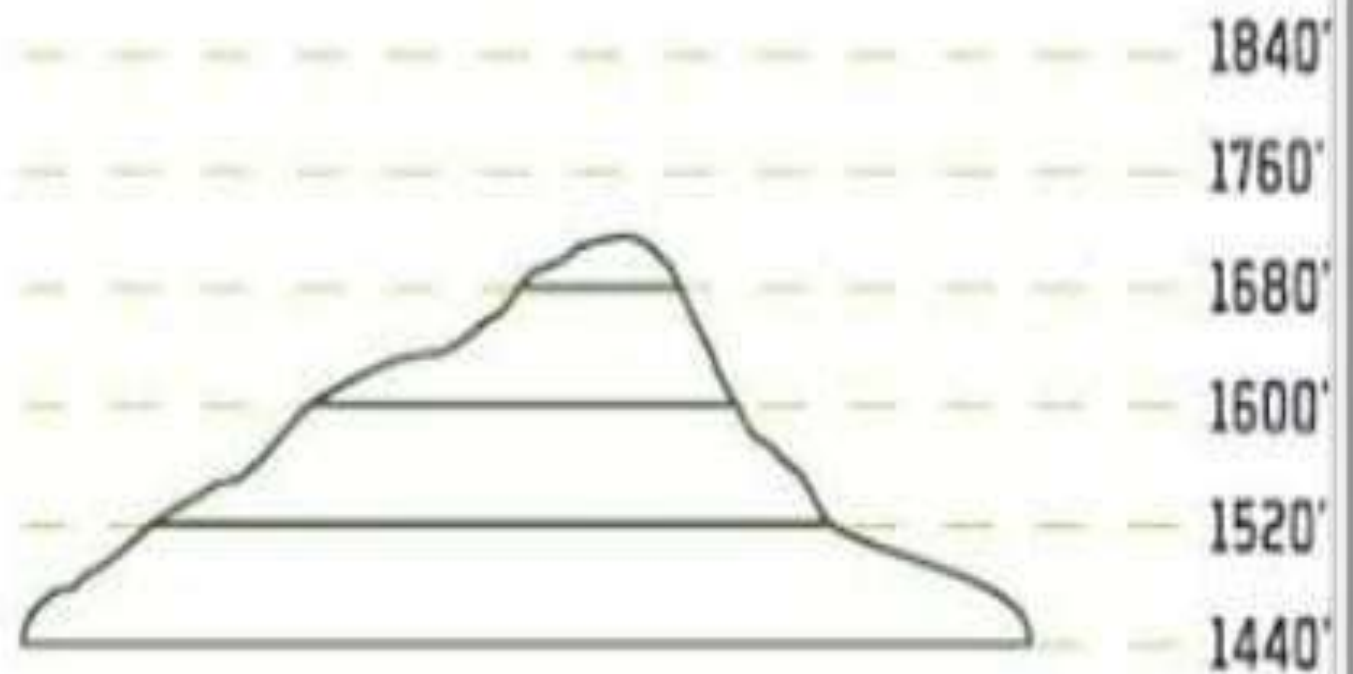
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WHAT YOU SEE  
ON YOUR MAP



SIDE VIEW  
OF LANDMARK



**STEEP SLOPE**

**GENTLE SLOPE**

**Q.18) Closed contours, with higher value inwards, represent a**

- a. Depression**
- b. Hillock**
- c. Plain surface**
- d. None of the above**



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**Q.19) Benchmark is established by**

- a. Hypsometry**
- b. Barometric leveling**
- c. Spirit leveling**
- d. trigonometrical leveling**



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**Q.20) Detailed plotting is generally done by**

- a. Radiation**
- b. Traversing**
- c. Resection**
- d. All of the above**



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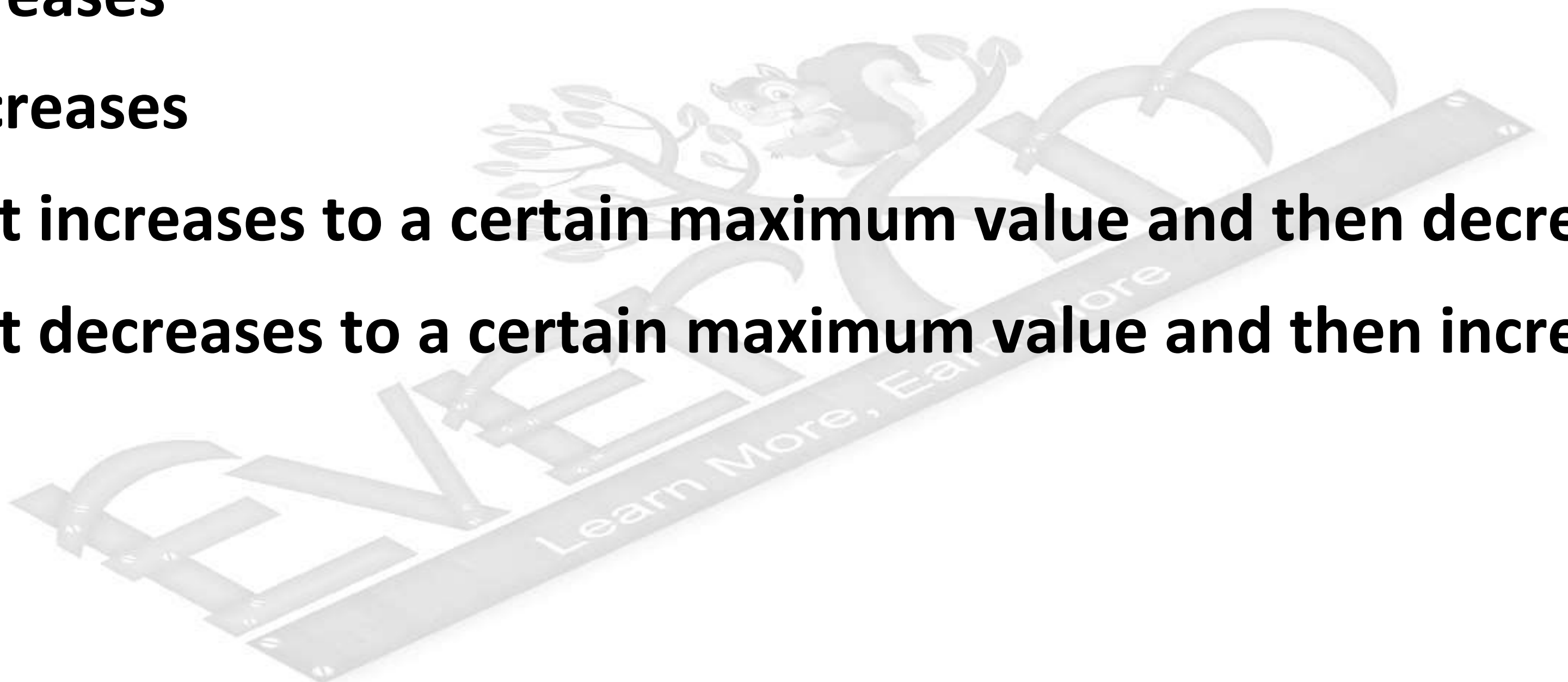
**Q.21) With increase in moisture content, the bulking of sand**

**a. Increases**

**b. Decreases**

**c. First increases to a certain maximum value and then decreases**

**d. First decreases to a certain maximum value and then increases**



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**Q.22) The maximum quantity of calcium chloride used as an accelerator in cement in percentage by weight of cement is**

- a. 1**
- b. 2**
- c. 3**
- d. 4**





**Q.23) Expansion joints in masonry walls are provided in wall lengths greater than**

- a. 10 m**
- b. 20 m**
- c. 30 m**
- d. 40 m**



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**Q.24) As compared to stretcher course, the thickness of joints in header course should be**

- a. Less**
- b. More**
- c. Equal**
- d. Equal or more**



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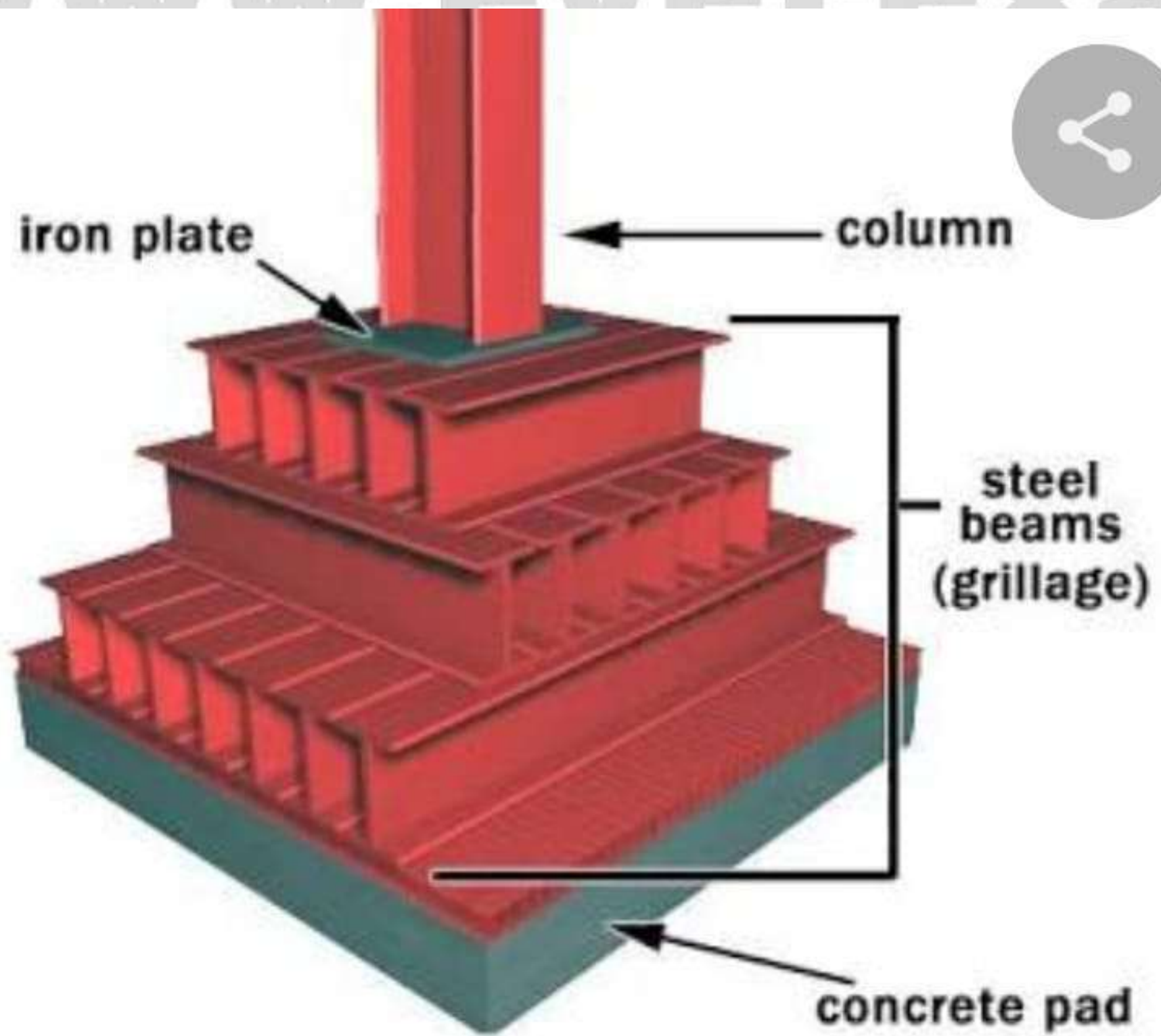
**Q.25) The type of footing which is used to transmit heavy loads steel columns is**

- a. Raft foundation**
- b. Grillage foundation**
- c. Well foundation**
- d. Isolated footing**



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**Q.26) The maximum total settlement for raft foundation on clayey soils should be limited to**

- a. 25 mm**
- b. 25 to 40 mm**
- c. 40 to 65 mm**
- d. 65 to 100 mm**



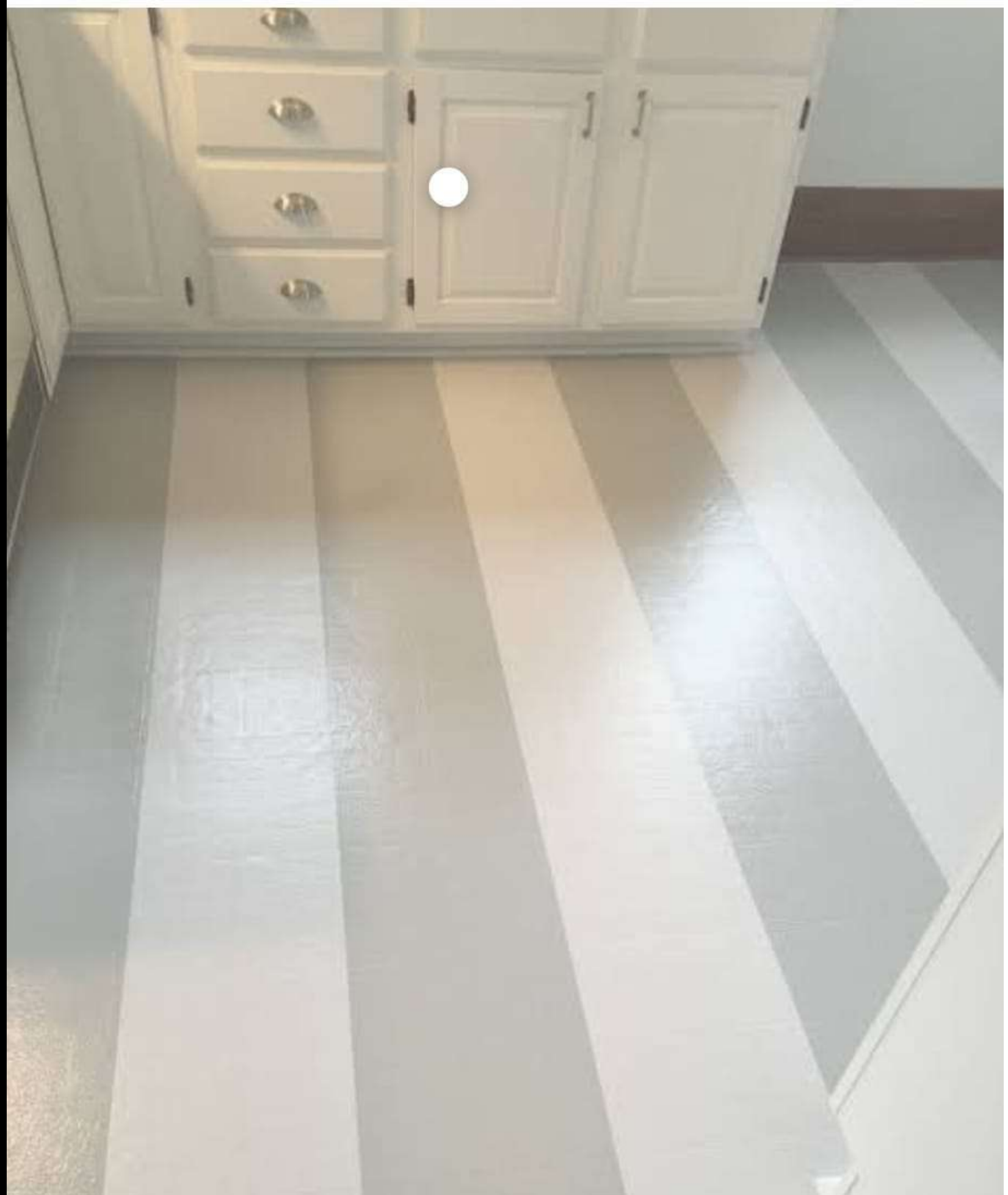
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**Q.27) The type of flooring suitable for use in churches, theatres, public libraries and other places where noiseless floor covering is desired is**

- a. Cork flooring**
- b. Glass flooring**
- c. Wooden flooring**
- d. Linoleum flooring**

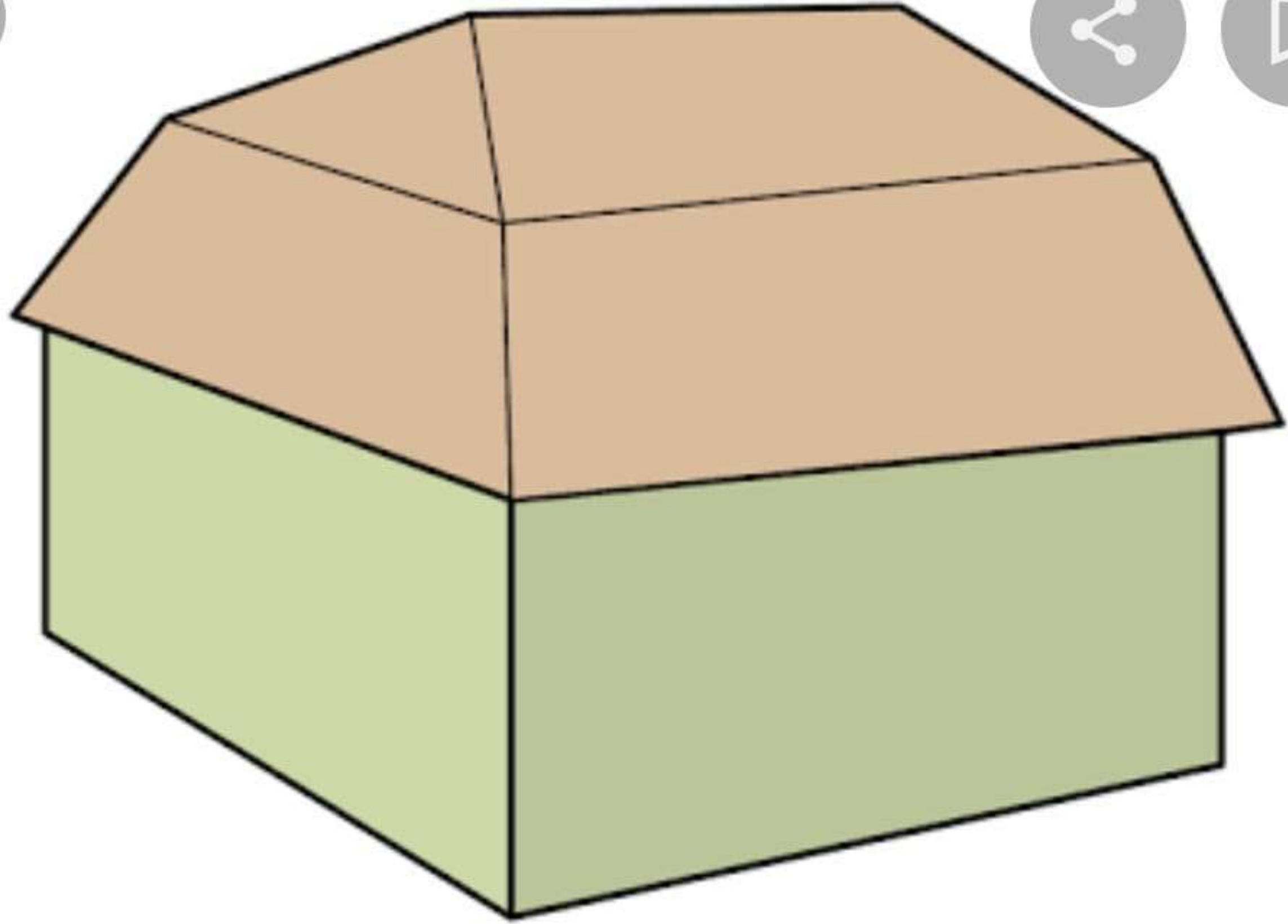


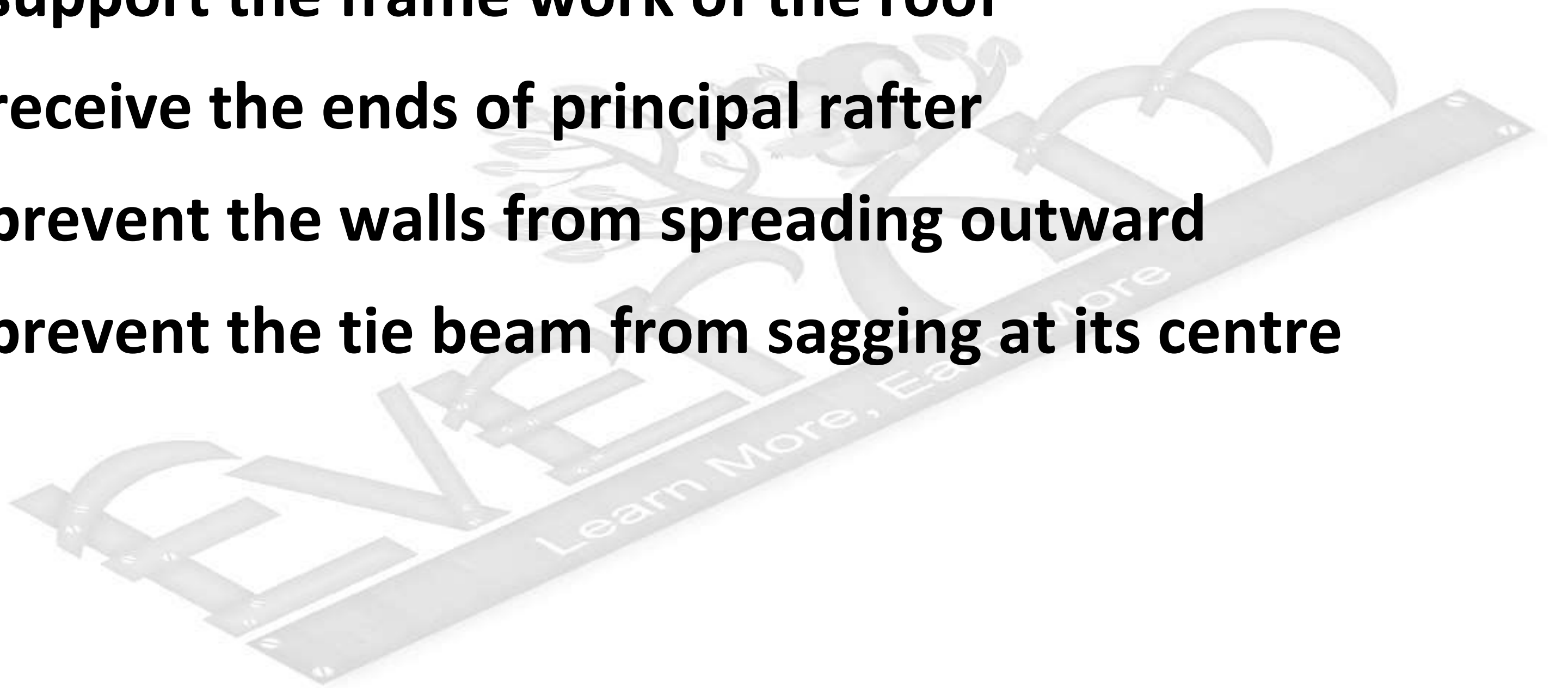




**Q.28) Mansard roof is a which slopes in**

- a. Two directions without break in the slope on each side**
- b. Two directions with break in the slope on each side**
- c. Four directions without break in the slope on each side**
- d. Four directions with break in the slope on each side**



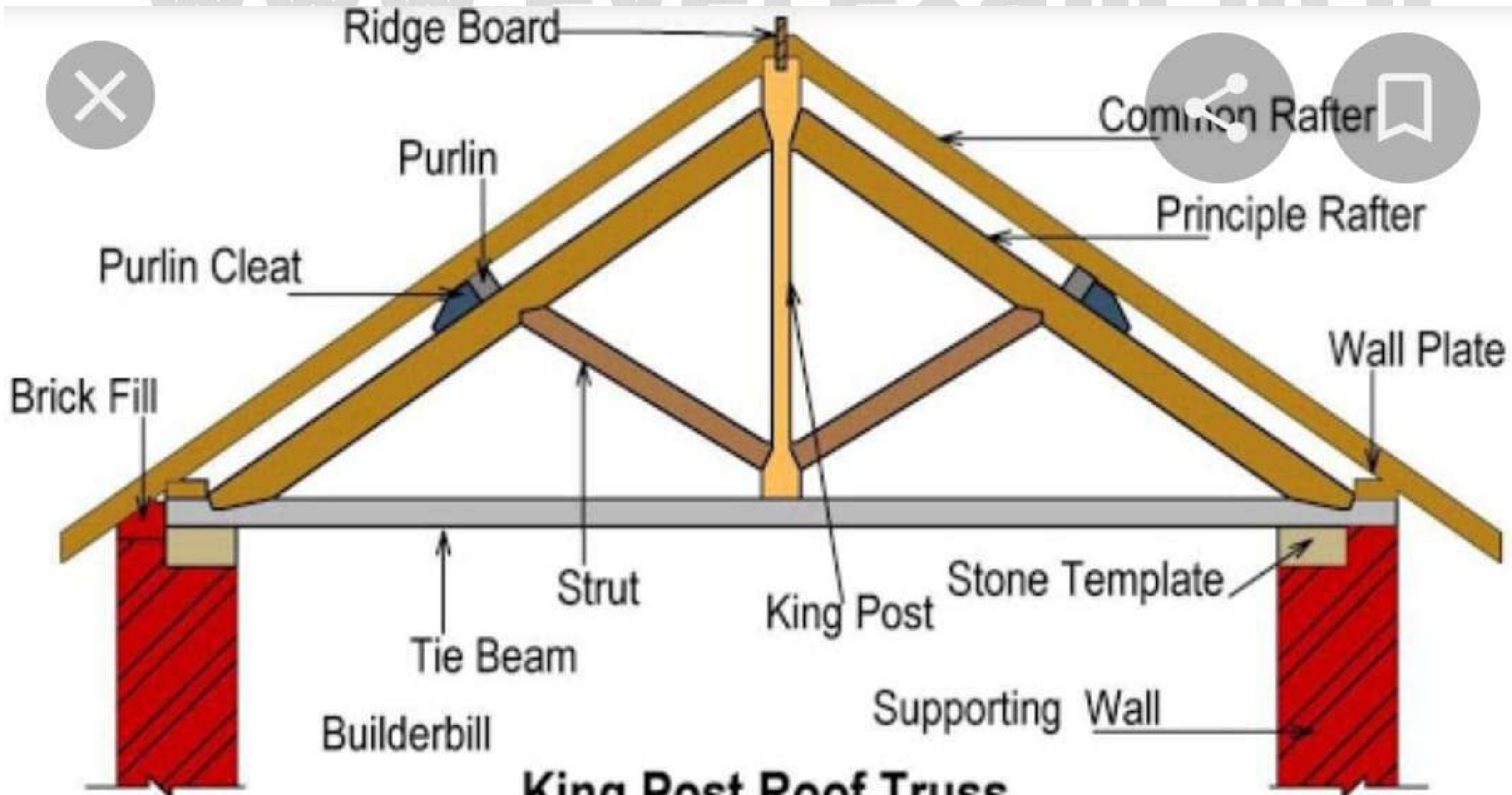


**Q.29) The function of king post in a king post roof truss is**

- a. To support the frame work of the roof**
- b. To receive the ends of principal rafter**
- c. To prevent the walls from spreading outward**
- d. To prevent the tie beam from sagging at its centre**

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**King Post Roof Truss**

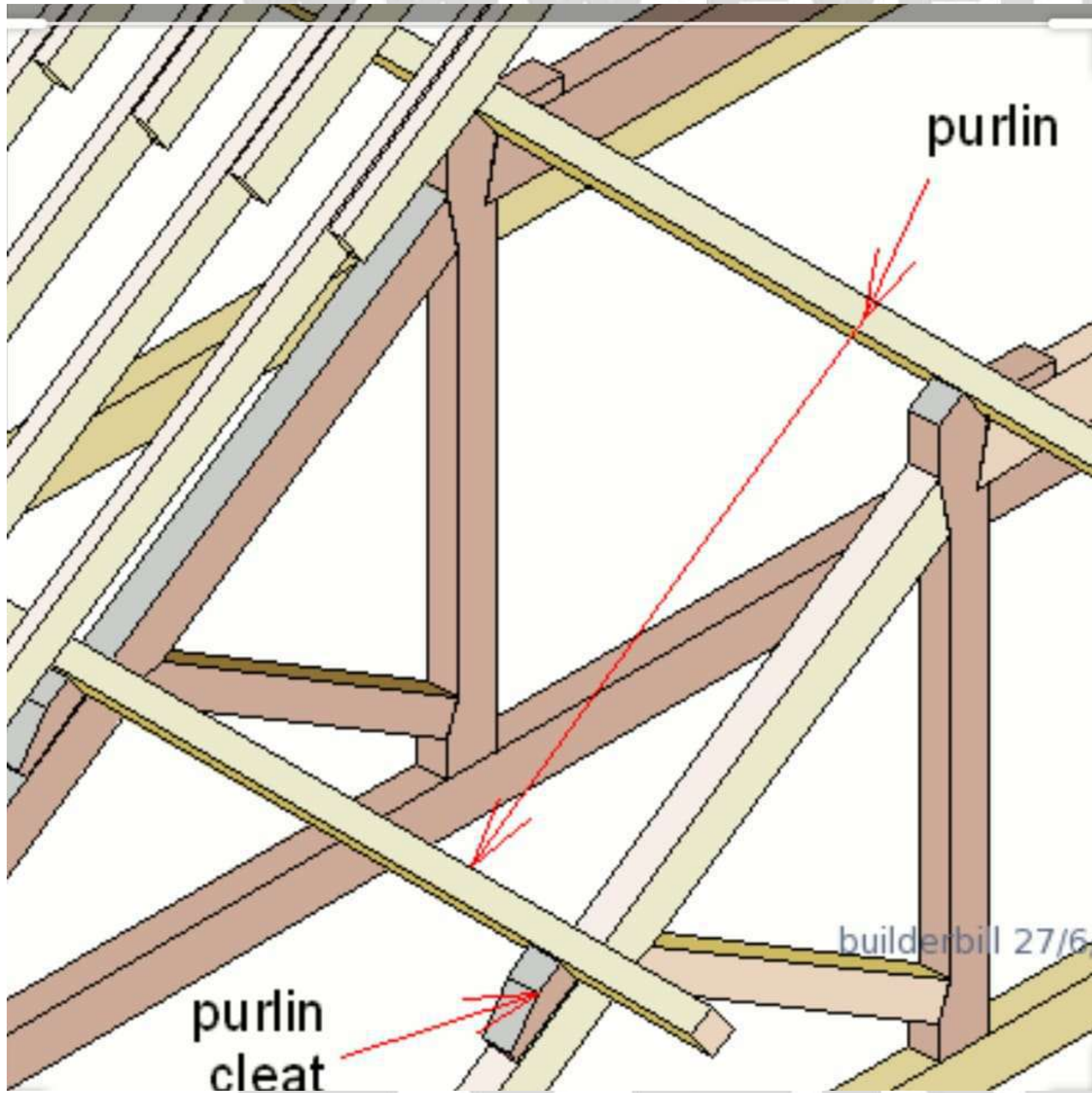
**Q.30) The function of cleats in a roof truss is**

- a. To support the common rafter**
- b. To support purlins**
- c. To prevent the purlins from tilting**
- d. All of the above**



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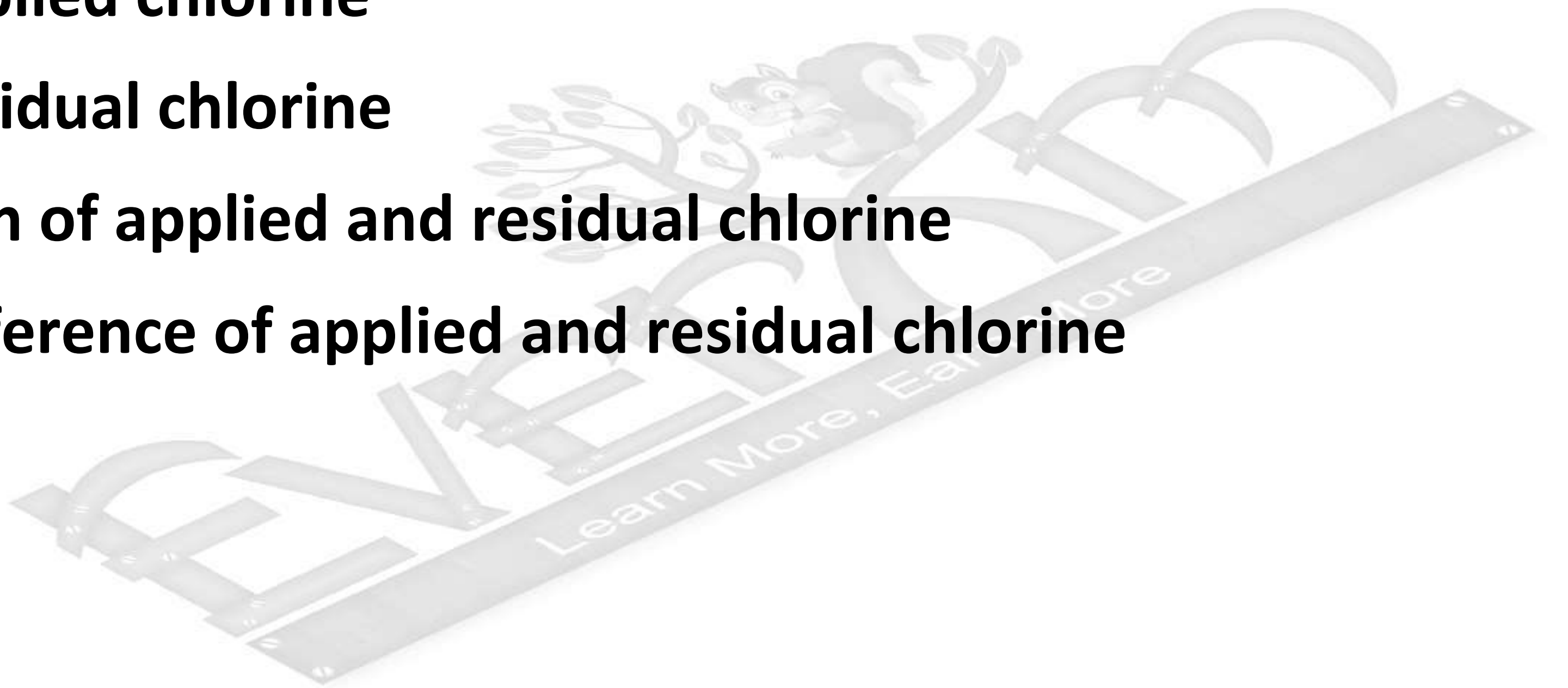


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**Q.31) Chlorine demand of water is equal to**

- a. Applied chlorine**
- b. Residual chlorine**
- c. Sum of applied and residual chlorine**
- d. Difference of applied and residual chlorine**



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**Q.32) The process in which the chlorination is done beyond the break point is known as**

- a. Prechlorination**
- b. Post chlorination**
- c. Super chlorination**
- d. Break point chlorination**



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**Q.33) The treatment of water with bleaching powder is known as**

- a. Prechlorination**
- b. Super chlorination**
- c. Dechlorination**
- d. Hypochlorination**



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**Q.34) As compared to higher pH values, the contact period required for efficient chlorination at lower pH values is**

- a. Smaller**
- b. Larger**
- c. Same**
- d. None of the above**



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**Q.35) In lime-soda process**

- a. Only carbonate hardness is removed**
- b. Only non-carbonate hardness is removed**
- c. Lime reduces the carbonate hardness and soda-ash removes the non-carbonate hardness**
- d. Lime reduces the non-carbonate hardness and soda-ash removes the carbonate hardness**

**Q.36) The major disadvantage of lime soda process of water softening is that**

- a. It is unsuitable for turbid and acidic water**
- b. Huge amount of precipitate is formed which creates a disposal problem**
- c. The effluent cannot be reduced to zero hardness**
- d. It is unsuitable for softening the water of excessive hardness**

**Q.37) Activated carbon is used for**

- a. Disinfection**
- b. Removing hardness**
- c. Removing odours**
- d. Removing corrosiveness**



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**Q.38) The suitable layout of a distribution system for irregularly growing town is**

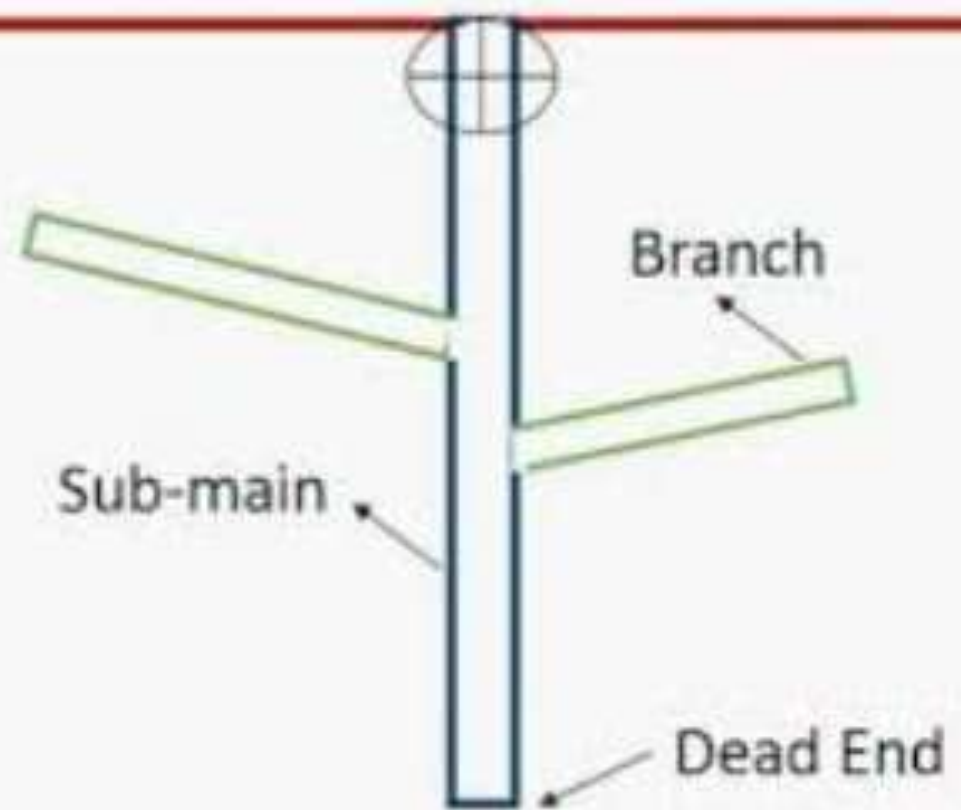
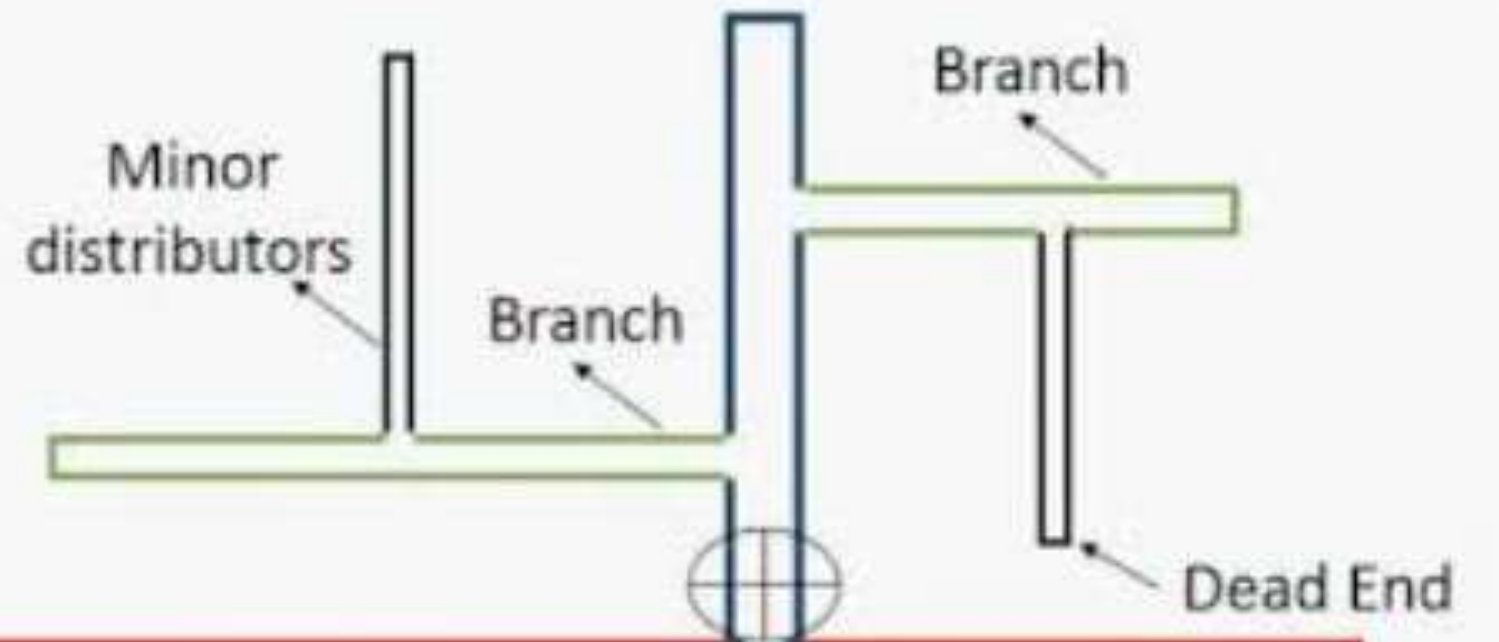
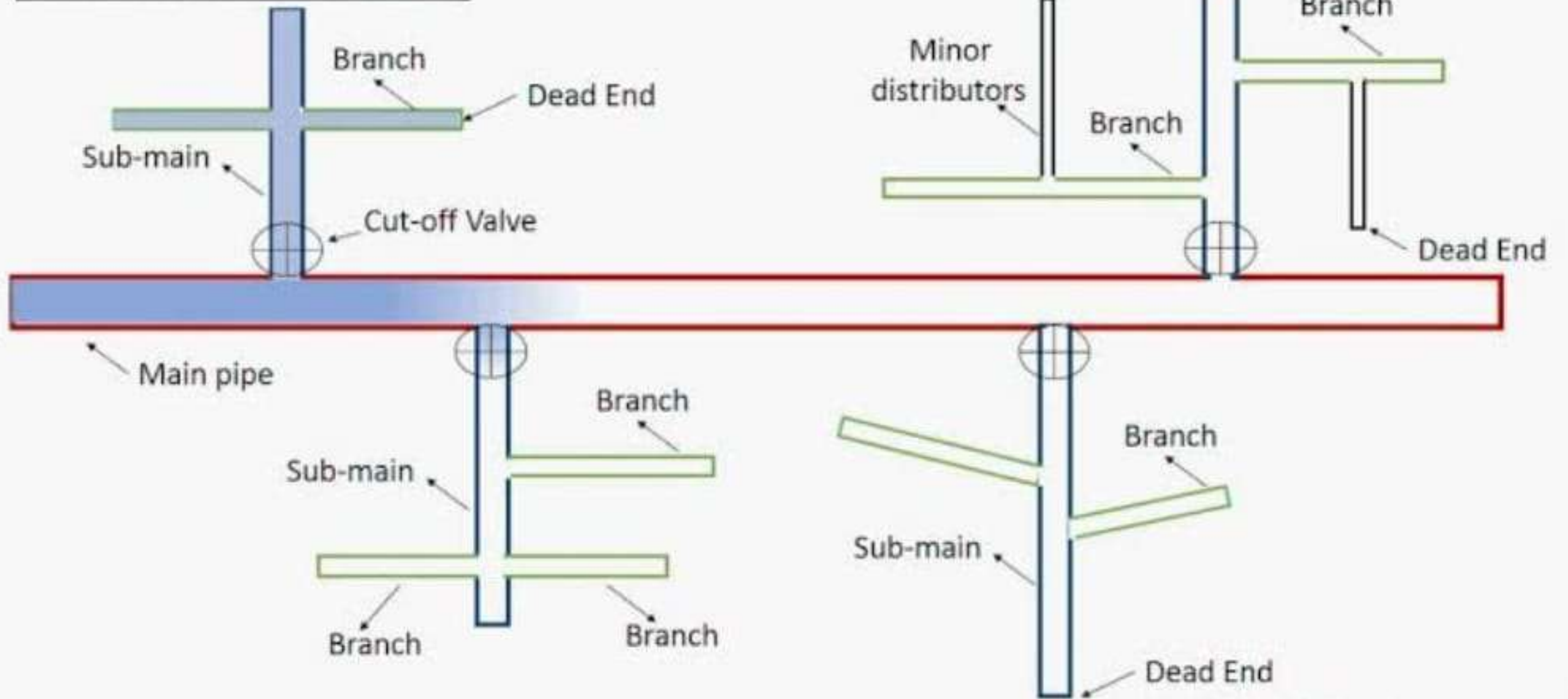
- a. Dead end system**
- b. Grid iron system**
- c. Radius system**
- d. Ring system**



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# DEAD END SYSTEM



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**Q.39) The layout of distribution system in which water flows towards the outer periphery is**

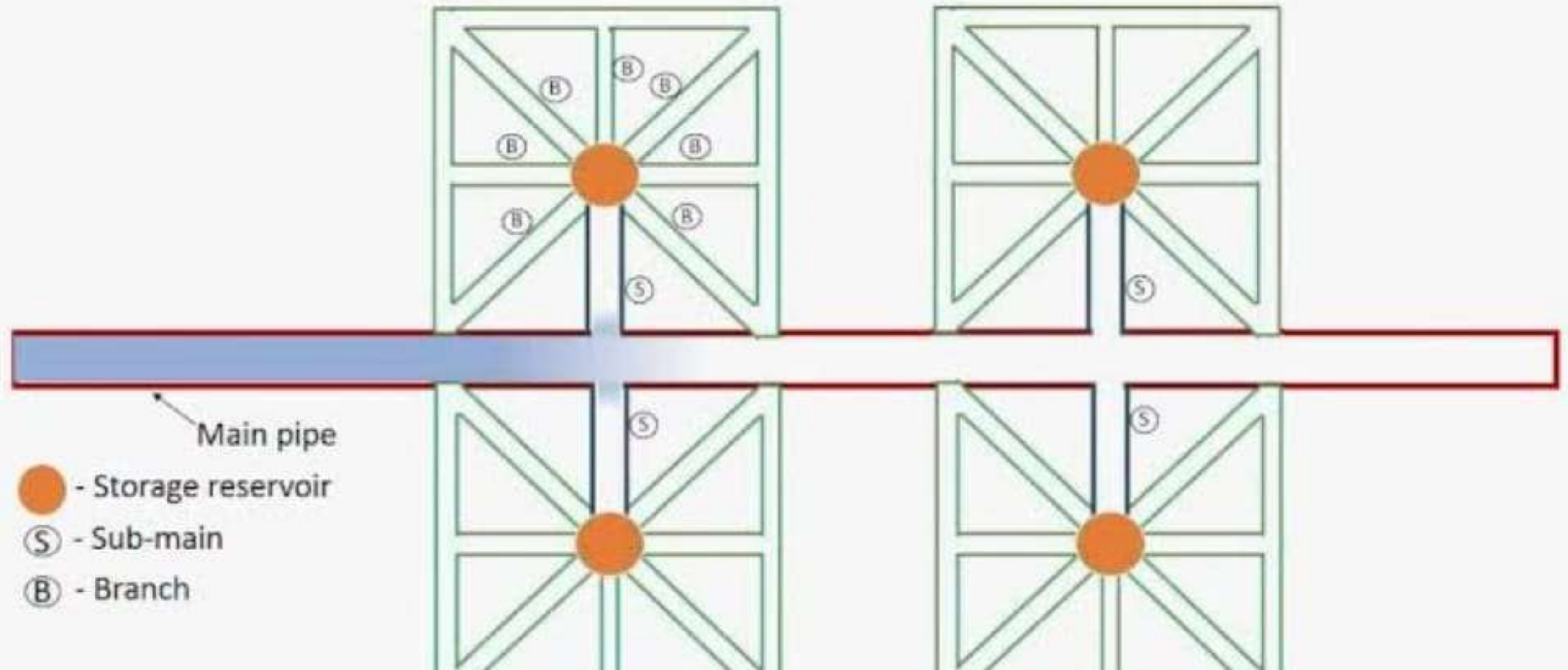
- a. Ring system**
- b. Dead end system**
- c. Radial system**
- d. Gird iron system**



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# RADIAL SYSTEM



- ↖ Main pipe
- - Storage reservoir
- Ⓢ - Sub-main
- Ⓟ - Branch

**Q.40) The type of valve which is provided to control the flow of water in the distribution system at street corners and where the pipe lines intersect is**

- a. Check valve**
- b. Sluice valve**
- c. Safety valve**
- d. Scour valve**



**Q.41) The normal annual precipitation at stations X, A, B and C are 700 mm, 1000 mm, 900 mm, and 800 mm respectively if the storm precipitation at three station A, B and C were 100 mm, 90 mm and 80 mm respectively, then the storm precipitation for station X will be**

- a. 70 mm**
- b. 80 mm**
- c. 90 mm**
- d. 105 mm**

**Q.42) The minimum size of stone that will remain at rest in a channel of longitudinal slope  $S$  and hydraulic mean depth  $R$  is given by**

- a.  $4 RS$**
- b.  $11 RS$**
- c.  $7 RS$**
- d.  $15 RS$**

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**Q.43) The ratio of average values of shear stresses produced on the bed and the banks of a channel due to flowing water is**

- a. Less than 1**
- b. Equal to 1**
- c. Greater than 1**
- d. Equal to zero**



**Q.44) Garret's diagrams are based on**

- a. Kennedy's theory**
- b. Lacey's theory**
- c. Khosla's theory**
- d. bligh's theory**



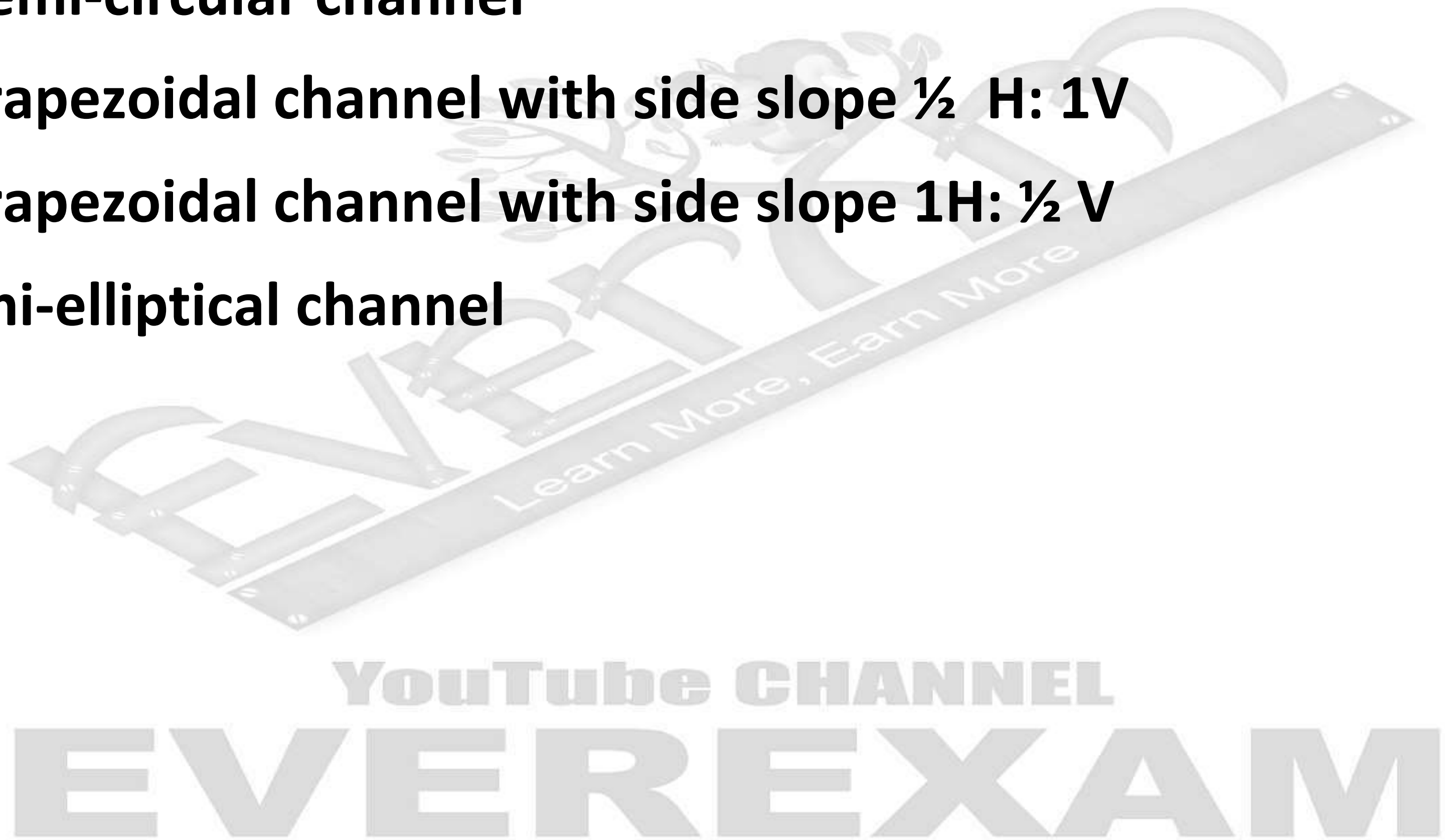
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**Q.45) Garret's diagrams have been drawn for**

- a. A semi-circular channel**
- b. A trapezoidal channel with side slope  $\frac{1}{2}$  H: 1V**
- c. A trapezoidal channel with side slope 1H:  $\frac{1}{2}$  V**
- d. Semi-elliptical channel**



Q.46) lacey's regime scour depth is given by

a.  $1.35 \left( \frac{q}{f} \right)^{1/3}$

b.  $1.35 \left( \frac{q}{f} \right)^{1/6}$

c.  $1.35 \left( \frac{q^2}{f} \right)^{1/3}$

d.  $1.35 \left( \frac{q^2}{f} \right)^{1/6}$

Where q is discharge per unit width and f is silt factor

Q.47) According to lacey, the bed slope is given by

a. 
$$\frac{f^{4/3}}{3340Q^{1/2}}$$

b. 
$$\frac{f^{2/3}}{3340Q^{1/4}}$$

c. 
$$\frac{f^{5/3}}{3340Q^{1/6}}$$

d. 
$$\frac{f^{1/3}}{3340Q^{5/3}}$$

**Q.48) Which of the following canal structures is used to remove surplus water from an irrigation channel into a natural drain ?**

- a. Canal fall**
- b. Canal outlet**
- c. Canal escape**
- d. Canal regulator**



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**Q.49) For a proportional outlet, the flexibility is**

- a. Zero**
- b. Between zero and 1**
- c. 1**
- d. Greater than 1**



Q.50) The sensitivity of a rigid modules is

- a. Zero
- b. Between zero and one
- c. 1
- d. infinity



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