Koshi Province 5th Level Question by Loksewa 2081/12/23

1. What is the maximum imprisonment term for individuals found guilty of corruption under the Prevention of Corruption Act, 2059?

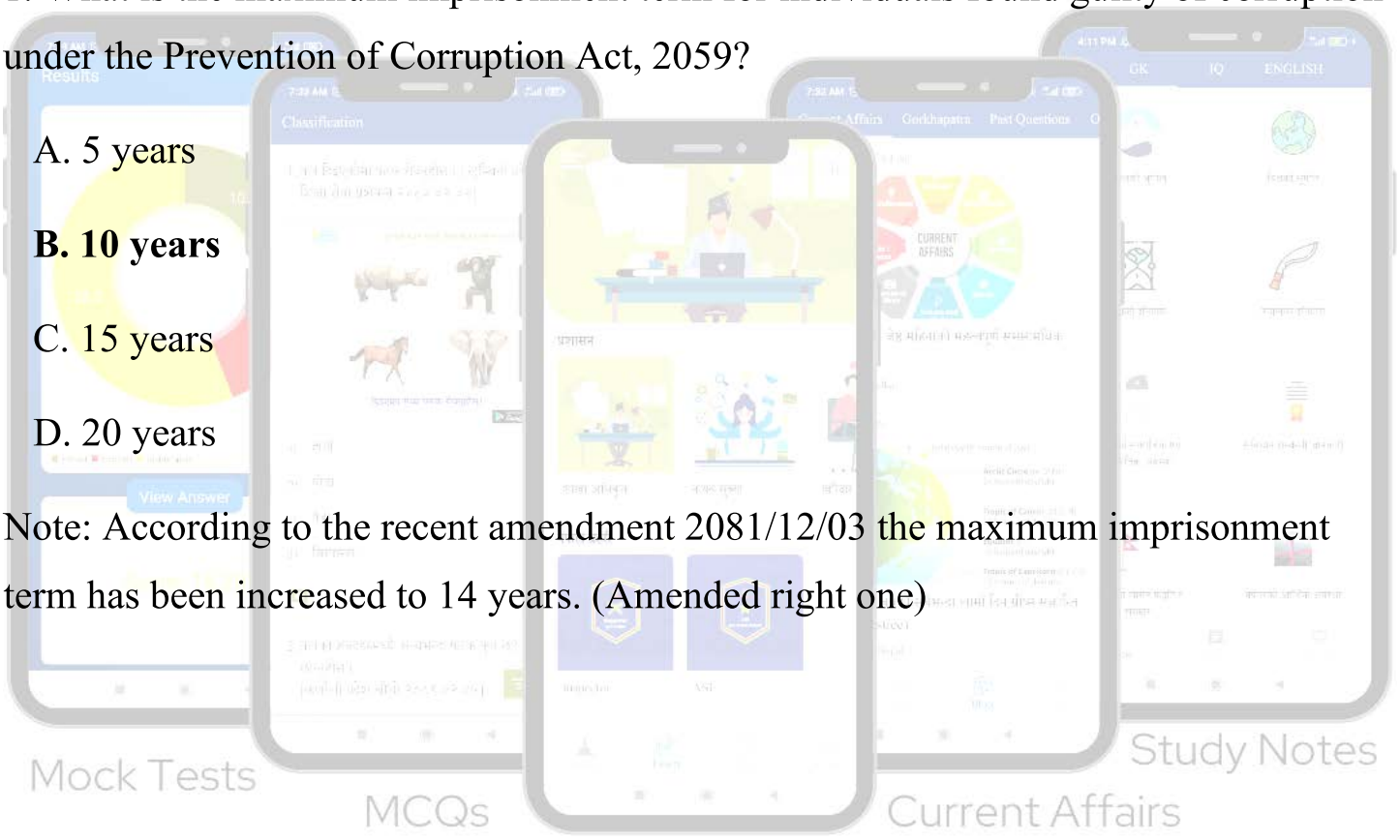
A. 5 years

B. 10 years

C. 15 years

D. 20 years

Note: According to the recent amendment 2081/12/03 the maximum imprisonment term has been increased to 14 years. (Amended right one)



(क) पच्चीस हजार रुपैयाँसम्म	तीन महिनासम्म कैद
(ख) पच्चीसहजार रुपैयाँभन्दा बढी पचास हजार रुपैयाँसम्म	तीन महिनादेखि चार महिनासम्म कैद,
(ग) पचास हजार रुपैयाँभन्दा बढी एक लाख रुपैयाँसम्म	चार महिनादेखि छ महिनासम्म कैद,,
(घ) एक लाख रुपैयाँभन्दा बढी पाँच लाख रुपैयाँसम्म	छ महिनादेखि एक वर्ष छ महिनासम्म कैद,
(ङ) पाँच लाख रुपैयाँभन्दा बढी दश लाख रुपैयाँसम्म	एक वर्ष छ महिनादेखि दुई वर्ष छ महिनासम्म कैद,
(च) दश लाख रुपैयाँभन्दा बढी पच्चीस लाख रुपैयाँसम्म	दुई वर्ष छ महिनादेखि चार वर्षसम्म कैद,
(छ) पच्चीस लाख रुपैयाँभन्दा बढी पचास लाख रुपैयाँसम्म	चार वर्षदेखि छ वर्षसम्म कैद
(ज) पचास लाख रुपैयाँभन्दा बढी एक करोड रुपैयाँसम्म	छ वर्षदेखि आठ वर्षसम्म कैद
(झ) एक करोड रुपैयाँभन्दा बढी जतिसुकै भए पनि	आठ वर्षदेखि दश वर्षसम्म कैद ।

(२) राष्ट्रसेवक बाहेक अन्य व्यक्तिले कुनै राष्ट्रसेवकलाई निजको

(क) पचास हजार रुपैयाँसम्म	- एक महिनादेखि छ महिनासम्म कैद
(ख) पचास हजार रुपैयाँभन्दा बढी एक लाख रुपैयाँसम्म	- छ महिनादेखि एक वर्षसम्म कैद
(ग) एकलाख रुपैयाँभन्दा बढी पाँच लाख रुपैयाँसम्म	- एक वर्षदेखि दुई वर्षसम्म कैद
(घ) पाँच लाख रुपैयाँभन्दा बढी पच्चिस लाख रुपैयाँसम्म	- दुई वर्षदेखि चार वर्षसम्म कैद
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(ज) दश करोड रूपैयाँभन्दा बढी जतिसुकै रकमसम्म	- दश वर्षदेखि चौध वर्षसम्म कैद।

2. How many fundamental rights are there in Part 3 of the Constitution of Nepal?

A. 24

B. 28

C. 31

D. 33

3. Which process is prioritized to ensure transparency in public procurement?

A. Direct purchase

B. Competitive bid

C. Direct negotiation

D. Contingent purchase

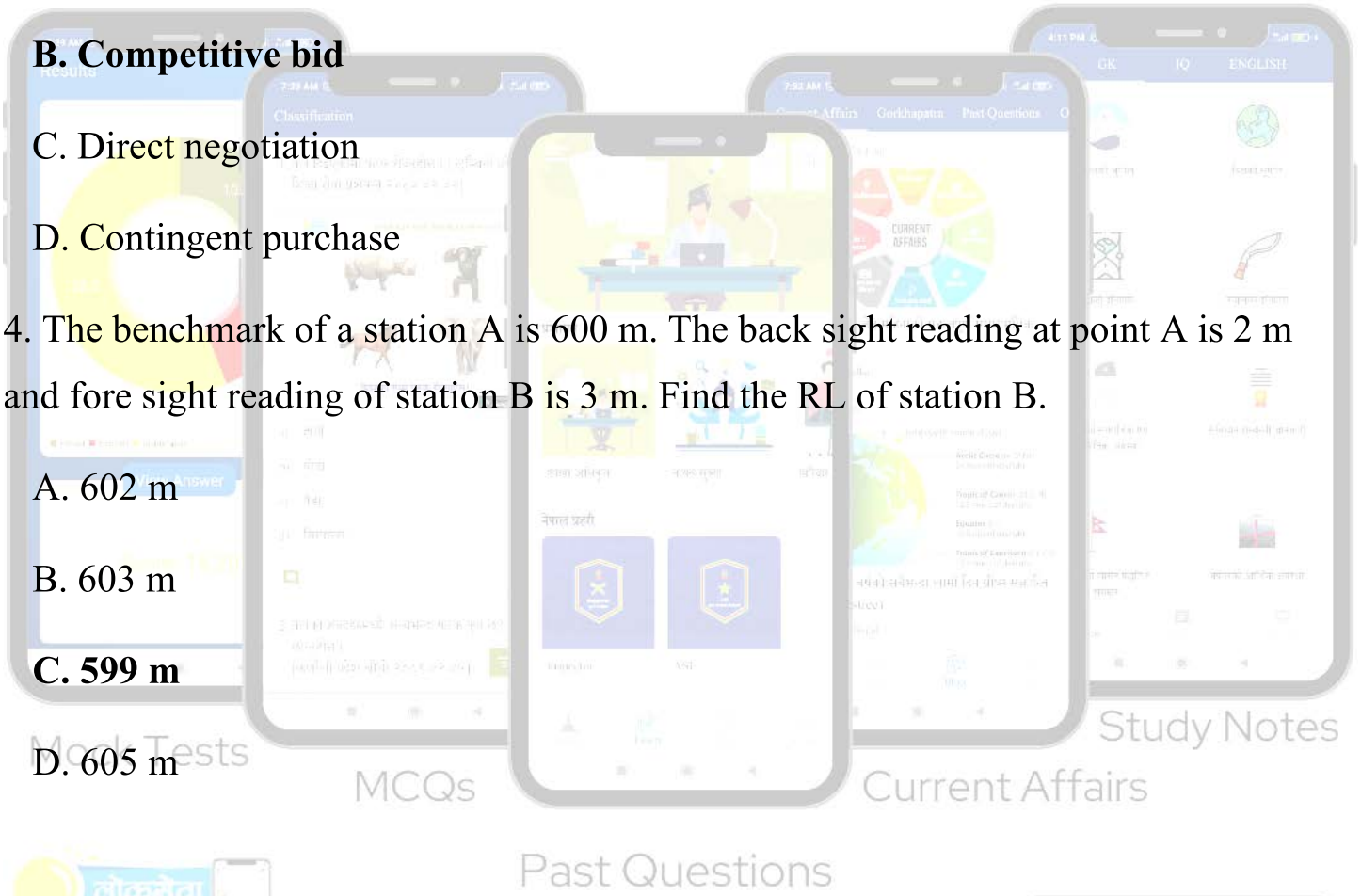
4. The benchmark of a station A is 600 m. The back sight reading at point A is 2 m and fore sight reading of station B is 3 m. Find the RL of station B.

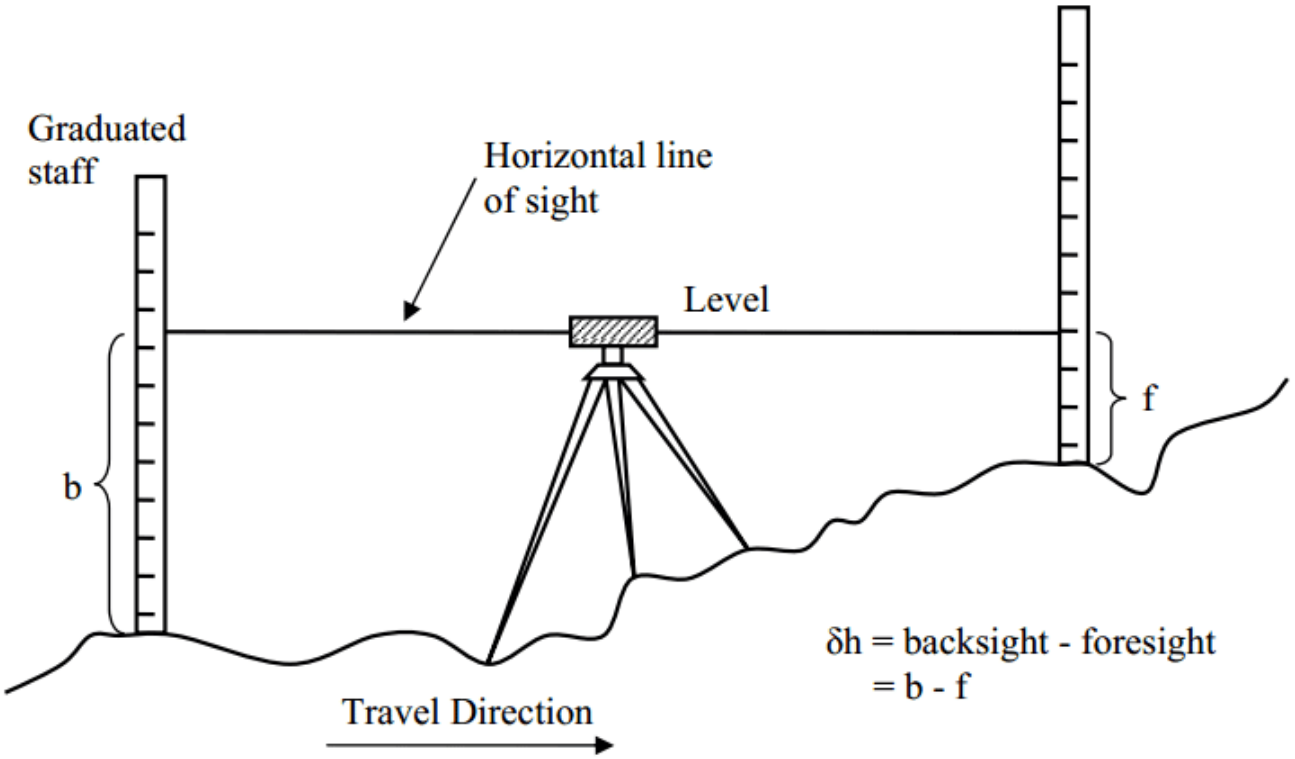
A. 602 m

B. 603 m

C. 599 m

D. 605 m





5. Overturning of vehicles on a curve can be avoided by using ……

A. Transition curve

B. Vertical curve

C. Compound curve

D. Reverse curve

Transition curves are designed to gradually change the alignment from a straight road to a circular curve, reducing the risk of overturning by introducing centrifugal force progressively. This prevents sudden jerks, enhances passenger comfort, and provides a smooth introduction of superelevation and extra widening, which are critical for vehicle stability on curves

6. Plotting of inaccessible points on a plane table is done by ……

A. Traversing

B. Radiation

C. Intersection

D. None of the above

In plane table surveying, the intersection method is used to plot inaccessible points. This involves setting up the plane table at two or more stations with known positions and drawing rays toward the target point. The location of the inaccessible point is determined by the intersection of these rays on the map

7. The method used to determine the elevations of points that are far apart is:

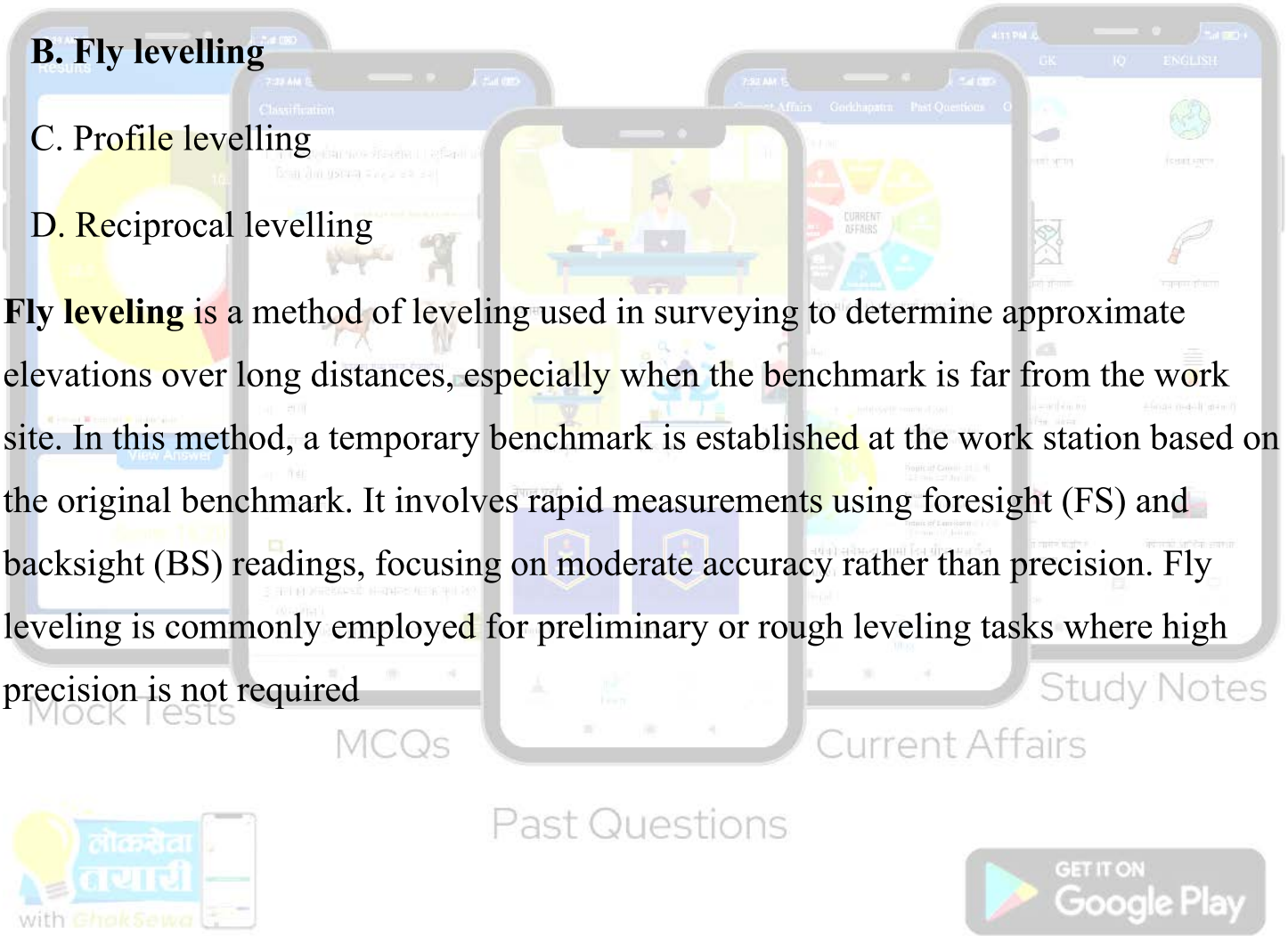
A. Precise levelling

B. Fly levelling

C. Profile levelling

D. Reciprocal levelling

Fly leveling is a method of leveling used in surveying to determine approximate elevations over long distances, especially when the benchmark is far from the work site. In this method, a temporary benchmark is established at the work station based on the original benchmark. It involves rapid measurements using foresight (FS) and backsight (BS) readings, focusing on moderate accuracy rather than precision. Fly leveling is commonly employed for preliminary or rough leveling tasks where high precision is not required



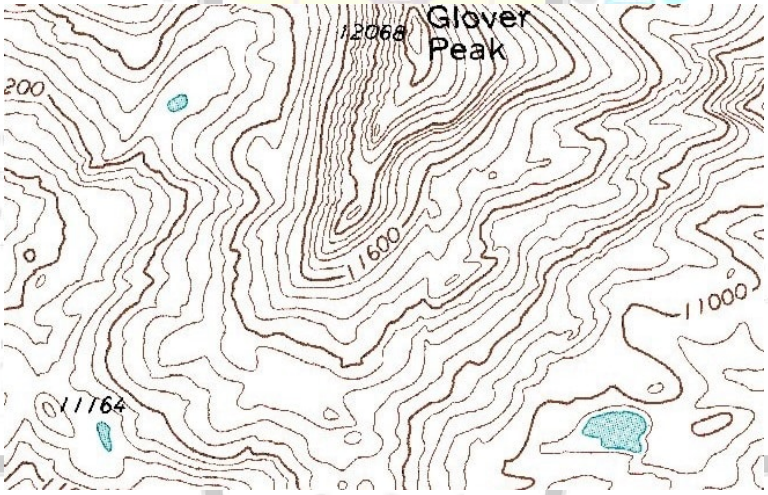
8. Contour interval is ……

A. Inversely proportional to the scale of the map

B. Larger for accurate work

C. Directly proportional to the flatness of ground

D. Larger if the time available is more



The contour interval, which represents the vertical distance between two consecutive contour lines, is inversely proportional to the scale of the map. For smaller-scale maps (covering larger areas), larger contour intervals are used to maintain clarity, while for larger-scale maps (covering smaller areas), smaller contour intervals are used to provide more detailed elevation information

9. Bitumen is generally obtained from ……

A. Synthetic material

B. Organic material

C. Petroleum product

D. Coal

Bitumen is primarily obtained as a byproduct of the distillation of crude oil. It is composed of heavy hydrocarbons and is extracted during the refining process when lighter components like gasoline and diesel are removed. Bitumen can also occur naturally in deposits such as oil sands or tar pits

10. The quality of cement is good if it has more of ……

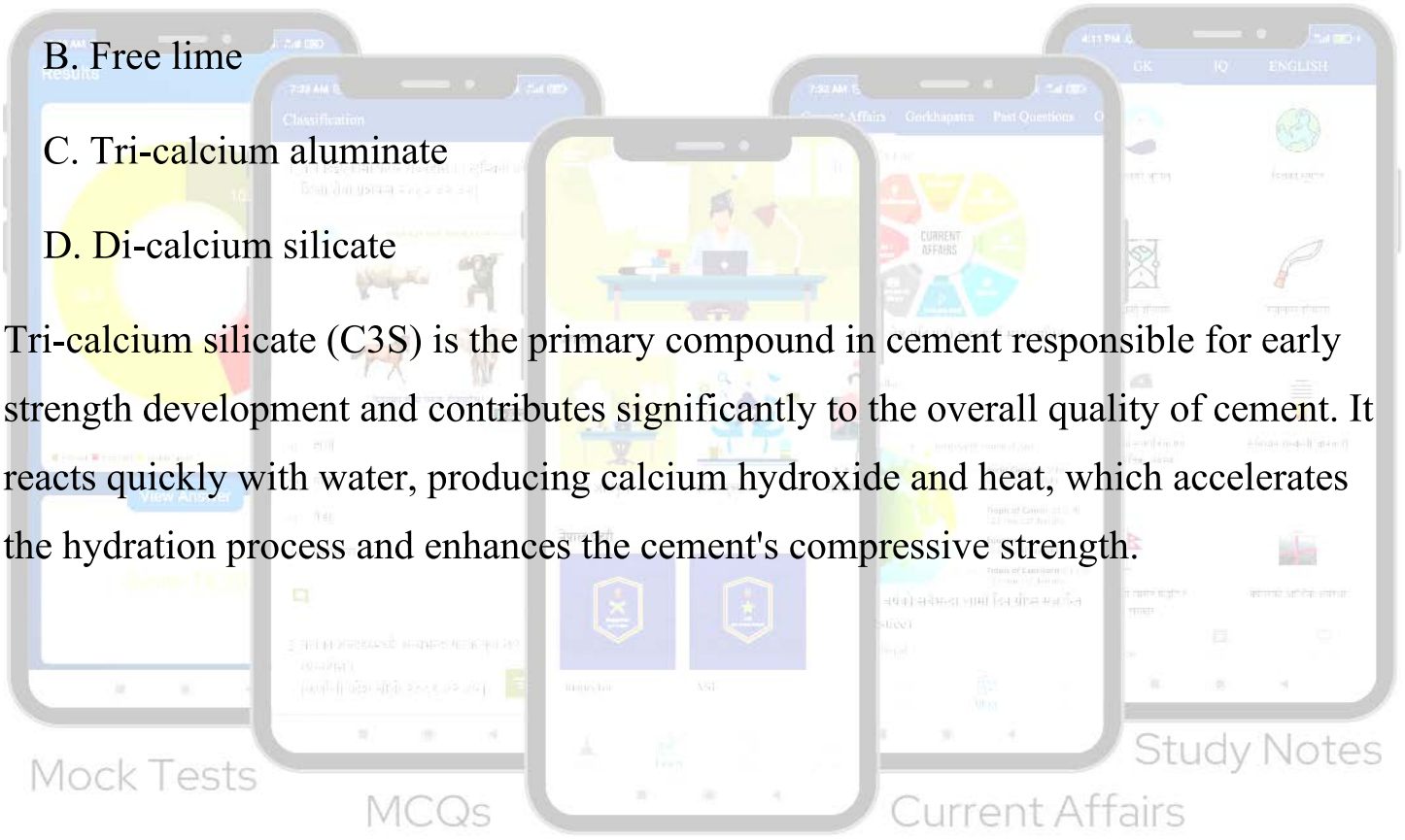
A. Tri-calcium silicate

B. Free lime

C. Tri-calcium aluminate

D. Di-calcium silicate

Tri-calcium silicate (C3S) is the primary compound in cement responsible for early strength development and contributes significantly to the overall quality of cement. It reacts quickly with water, producing calcium hydroxide and heat, which accelerates the hydration process and enhances the cement's compressive strength.



11. The commonly used thinner in distempers:

A. Olive oil

B. Naphtha

C. Turpentine

D. Water

Distemper paints are typically water-based, and water serves as the primary thinner to adjust the paint's consistency for application. This approach is both cost-effective and environmentally friendly. While other solvents like naphtha, turpentine, or olive oil are used in certain types of paints, they are not commonly associated with distemper paint.

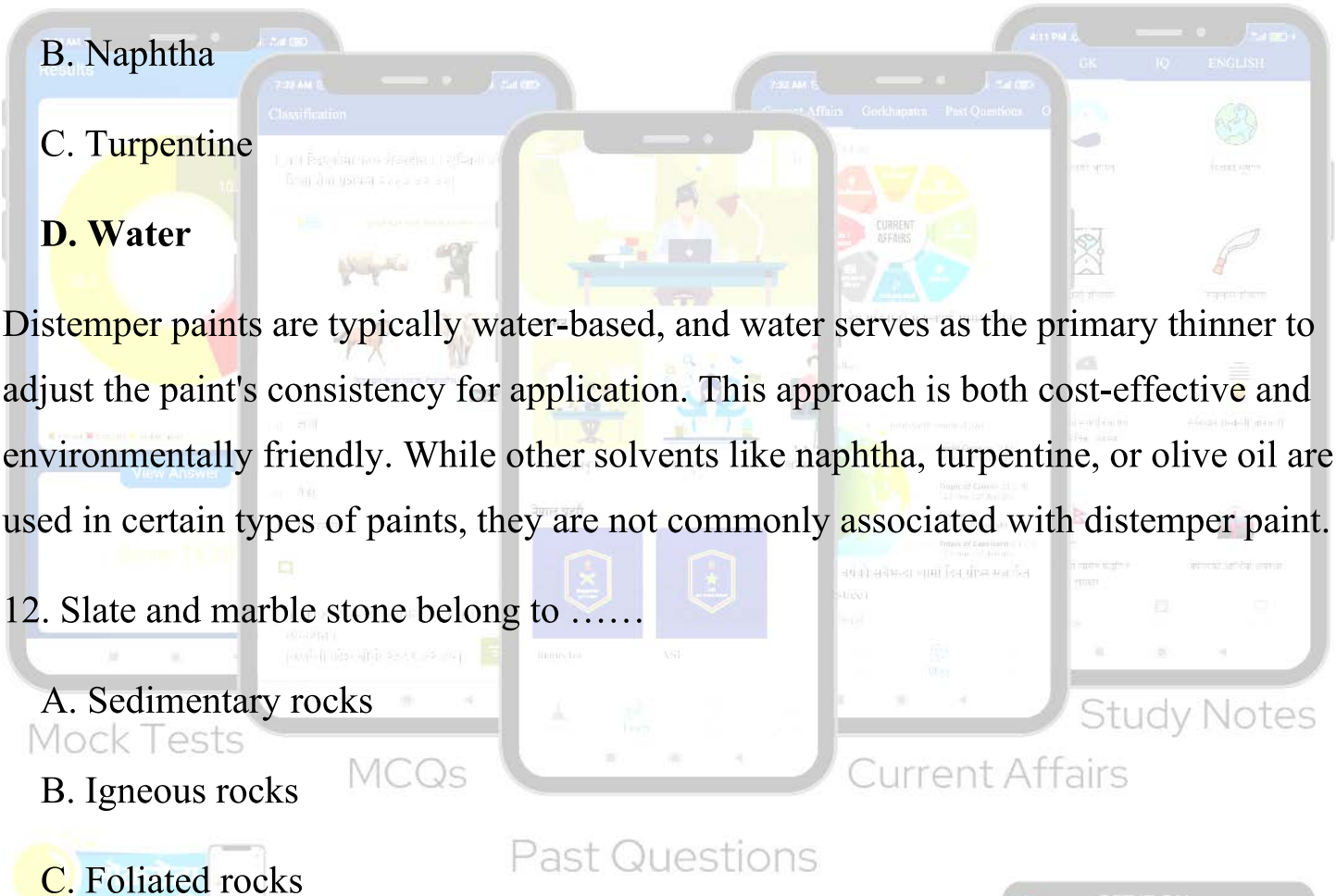
12. Slate and marble stone belong to ……

A. Sedimentary rocks

B. Igneous rocks

C. Foliated rocks

D. Metamorphic rocks



Slate and marble are both metamorphic rocks, which means they have undergone transformation from their original forms due to high pressure and temperature conditions.

Slate: Formed from shale or claystone, slate is a fine-grained metamorphic rock that splits easily into thin layers.

Marble: Originating from limestone, marble is a dense, crystallized metamorphic rock known for its use in sculptures and buildings.

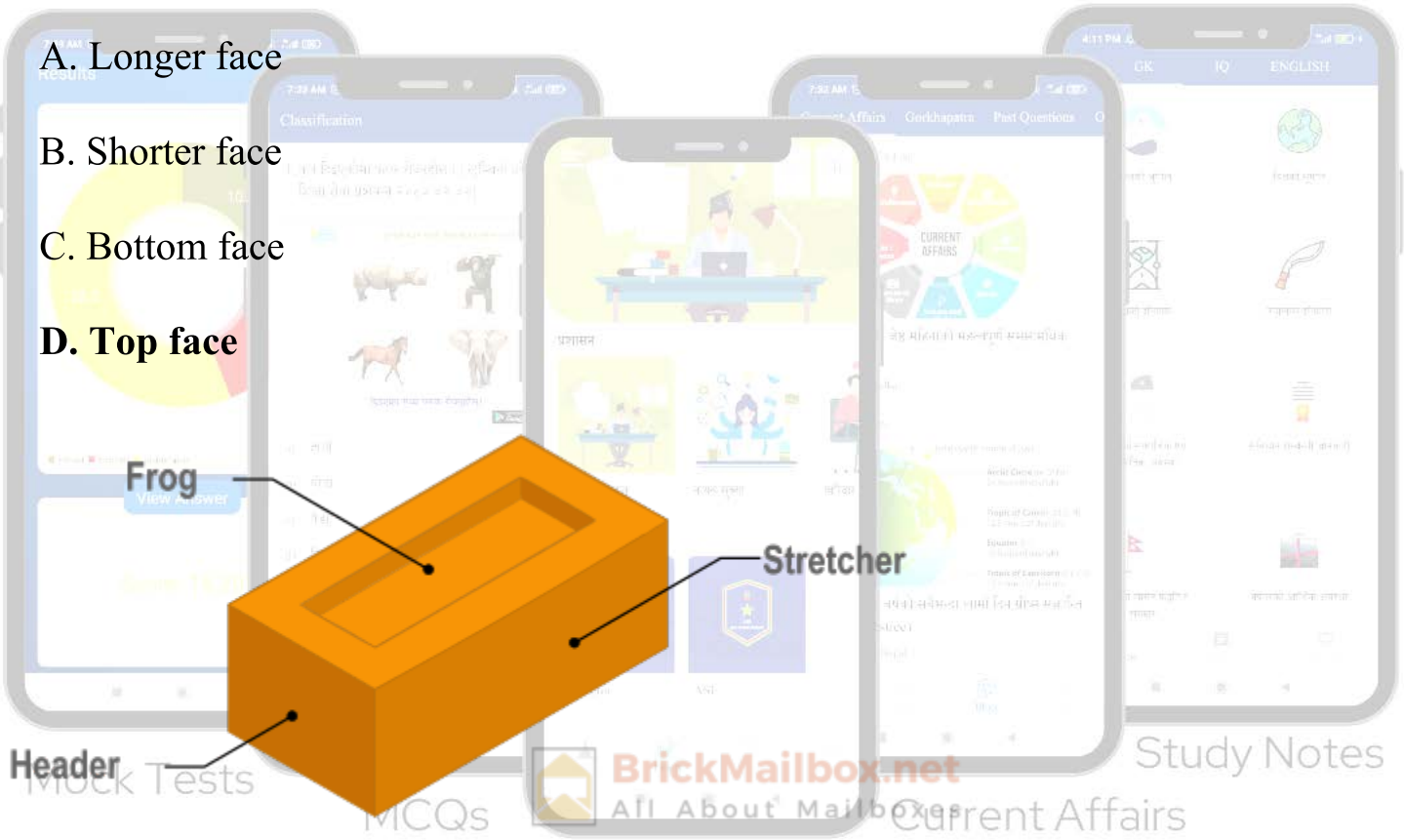
13. The frog of a brick is normally made on its.....

A. Longer face

B. Shorter face

C. Bottom face

D. Top face



The frog of a brick is typically made on its top face. This indentation serves multiple purposes, including reducing the weight of the brick, providing a key for mortar to improve bonding during masonry work, and sometimes displaying the manufacturer's name

14. When a rectangular beam is loaded transversely, the maximum compressive stress develops on.....

A. Every cross-section

B. Bottom fibre

C. Top fibre

D. Neutral axis

When a rectangular beam is subjected to transverse loading, it experiences bending, resulting in a distribution of stresses across its cross-section. The beam's cross-section can be divided into two main regions:

Top Fibre (Compressive Region): Located above the neutral axis, this region experiences compressive stresses.

Bottom Fibre (Tensile Region): Located below the neutral axis, this region experiences tensile stresses.

15. At the point of application of a concentrated load on a beam, there is.....

A. Sudden change of slope of BM

B. Maximum bending moment

C. Point of contra-flexure

D. Maximum deflection

When a concentrated load is applied to a beam, the **shear force** at that point experiences a sudden change (discontinuity). Since the slope of the bending moment (BM) diagram at any section equals the shear force at that section14, this abrupt shift in shear force causes a corresponding **sudden change in the slope of the BM diagram** at the load's location.

16. The effective length of a column with both ends fixed is:

A. L

B. 0.5L

C. 0.7L

D. 2L

When both ends of a column are fixed, its effective length is reduced to **0.5 times the actual length (L)**. This is because fixed ends provide maximum restraint, preventing rotation and lateral displacement, which increases the buckling resistance of the column

17. The pressure in pipe flow is normally.....

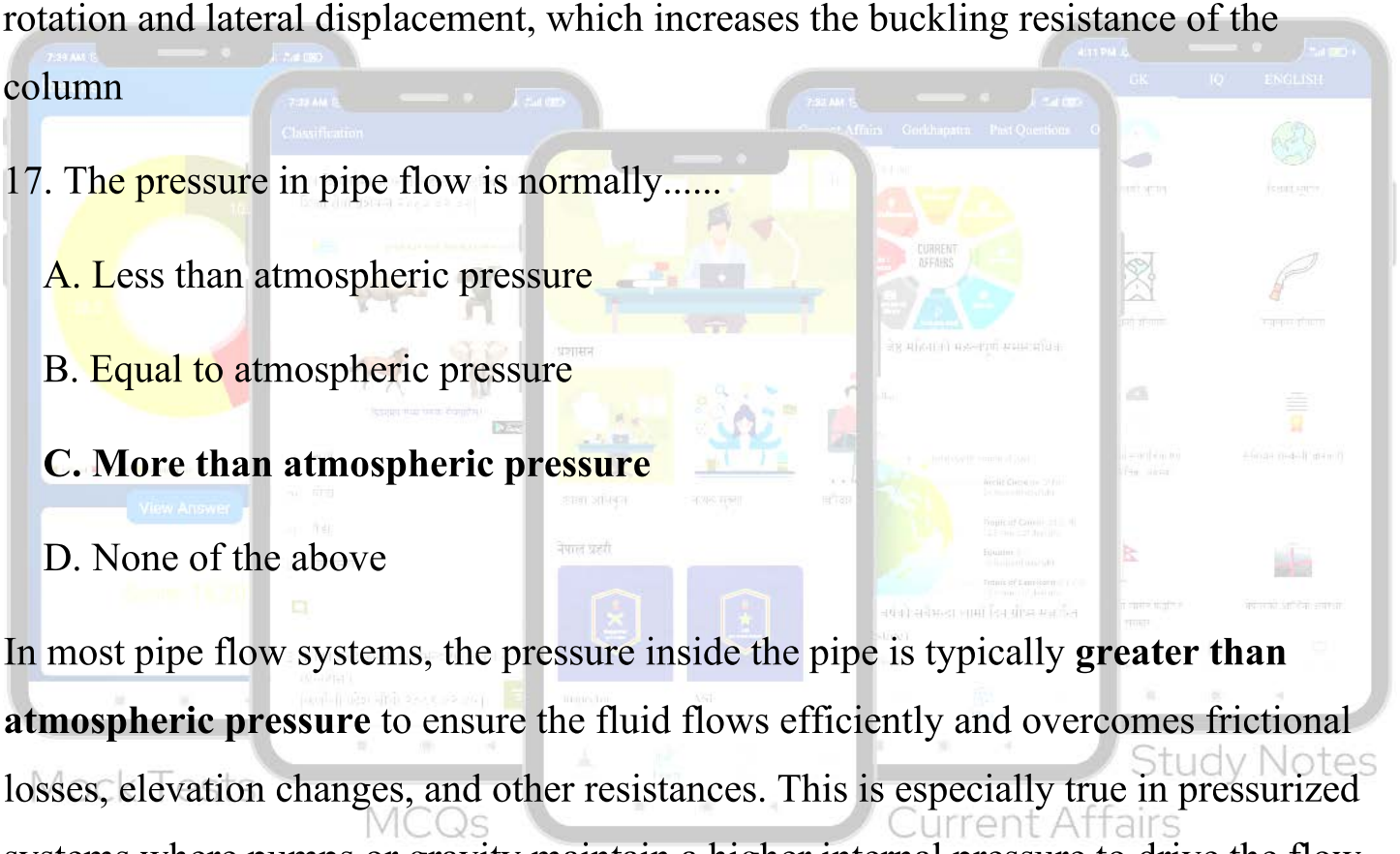
A. Less than atmospheric pressure

B. Equal to atmospheric pressure

C. More than atmospheric pressure

D. None of the above

In most pipe flow systems, the pressure inside the pipe is typically **greater than atmospheric pressure** to ensure the fluid flows efficiently and overcomes frictional losses, elevation changes, and other resistances. This is especially true in pressurized systems where pumps or gravity maintain a higher internal pressure to drive the flow.



18. In flow, the liquid particles may possess.....

A. Potential energy

B. Kinetic energy

C. Pressure energy

D. All of the above

19. The discharge formula $Q = C_d\sqrt{2ghA}$ used for rectangular:

A. Small orifices only

B. Large orifices only

C. Small and large orifices only

D. For all types of orifice

The discharge formula is applicable for **small orifices**, where the head of the liquid above the orifice is significantly greater (more than five times) than the depth of the orifice. In such cases, the velocity of water across the cross-section is approximately constant, allowing this simplified formula to be used effectively

20. A wall constructed to retain the earth from slippage on the hill side of the roadway is called.....

A. Breast wall

B. Retaining wall

C. Parapet wall

D. Wing wall

A **breast wall** is constructed on the hillside of a roadway to retain earth and prevent it from slipping or sliding onto the road. It is specifically designed to support the natural slope of the hill and stabilize the soil, ensuring safety and maintaining the integrity of the roadway.

21. Which factor does NOT affect soil compaction?

A. Water content

B. Compaction energy

C. Soil type

D. Specific gravity of soil solids

Specific gravity of soil solids does not directly affect soil compaction. The primary factors influencing compaction include **water content**, **compaction energy**, and **soil type**, as these determine the soil's workability, density, and response to applied mechanical energy. Specific gravity mainly relates to the mineral composition of the soil and is not a direct factor in the compaction process

22. The bearing capacity of soil depends upon.....

A. Size of particles

B. Shape of particles

C. Cohesive properties of particles

D. All of the above

The bearing capacity of soil depends on multiple factors, including:

- **Size of particles**: Larger particles, such as in coarse-grained soils (e.g., gravel), generally provide higher bearing capacity due to better interlocking and reduced compressibility.
- **Shape of particles**: Angular particles offer better interlocking and shear strength compared to rounded particles, increasing the soil's load-bearing capacity.

- **Cohesive properties of particles**: Cohesion in fine-grained soils, such as clay, contributes to their shear strength and affects the bearing capacity.

Thus, all these factors collectively influence the soil's ability to support loads without failure

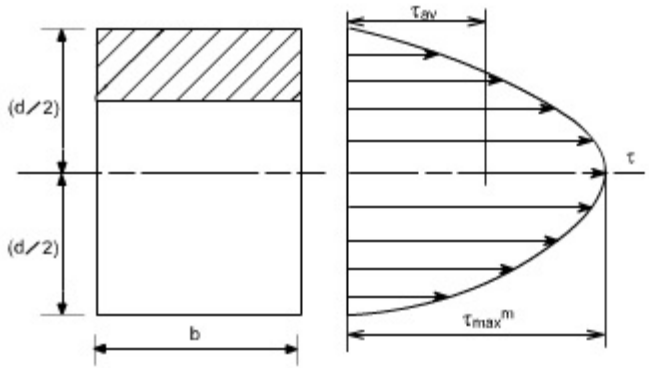
23. Distribution of shear intensity over a rectangular section of a beam follows:

A. Parabolic curve

B. An elliptical curve

C. A circular curve

D. A straight line



Shear stress is distributed parabolically across the rectangular section
Shear stress will be maximum at y = 0 and will be zero at the extreme ends.

In a rectangular beam subjected to transverse shear forces, the distribution of shear stress across any cross-section follows a parabolic curve. The shear stress is maximum at the neutral axis (the horizontal centerline of the beam's depth) and decreases to zero at the top and bottom surfaces. This parabolic distribution is characteristic of rectangular cross-sections under shear loading.

24. The percentage of steel reinforcement is highest in:

A. Under-reinforced sections

B. Over-reinforced sections

C. Balanced sections

D. None of the above

Over-reinforced sections have the highest percentage of steel reinforcement compared to balanced and under-reinforced sections. In these sections, the steel does not yield before the concrete fails, leading to sudden and brittle failure, which is unsafe and generally avoided in design practices

25. As per IS:456, the minimum diameter of reinforcement in a column shall NOT be less than.....

A. 12

B. 16

C. 18

D. 20

As per IS 456:2000, the minimum diameter of longitudinal reinforcement bars in a column should not be less than **12 mm**. This ensures adequate strength and stability of the column under load conditions

26. The process of keeping concrete moist to allow continued hydration is called.....

A. Finishing

B. Curing

C. Setting

D. Hardening

27. Bearing capacity of a soil depends on.....

A. Grain size of soil

B. Load intensity

C. Depends on the load

D. Rate of loading

The **bearing capacity of soil** depends on factors like **grain size**, soil type, moisture content, compaction, and density. Grain size affects the interlocking and frictional resistance between particles, which directly influences the soil's ability to support loads. Options **B (Load intensity)**, **C (Depends on the load)**, and **D (Rate of loading)** are not direct factors affecting the inherent bearing capacity of the soil but may influence settlement or behavior under specific conditions.

28. The process of making the background rough before plastering is.....

A. Dubbing

B. Hacking

C. Blistering

D. Peeling

In construction, **hacking** refers to the process of roughening a surface, such as a wall or concrete slab, before plastering. This roughening creates a better bond between the

plaster and the substrate, ensuring the plaster adheres properly and reduces the likelihood of peeling or blistering.

- **Dubbing (A)**: This involves filling low areas or depressions in a surface to level it out before plastering.
- **Blistering (C)**: This is a defect that occurs when bubbles form under the plaster surface, often due to trapped air or moisture.
- **Peeling (D)**: This refers to the detachment or lifting of the plaster from the underlying surface, usually caused by poor adhesion.

29. The temporary casing is known as the ……

A. Support

B. Built up

C. Formwork

D. Casing

Temporary casing is often referred to as **formwork**, as it provides a temporary structure to support and shape materials like concrete during construction. It is used to

stabilize excavations or boreholes temporarily until the concrete or permanent structure is set and can support itself.

30. Landfill leachate refers to ……

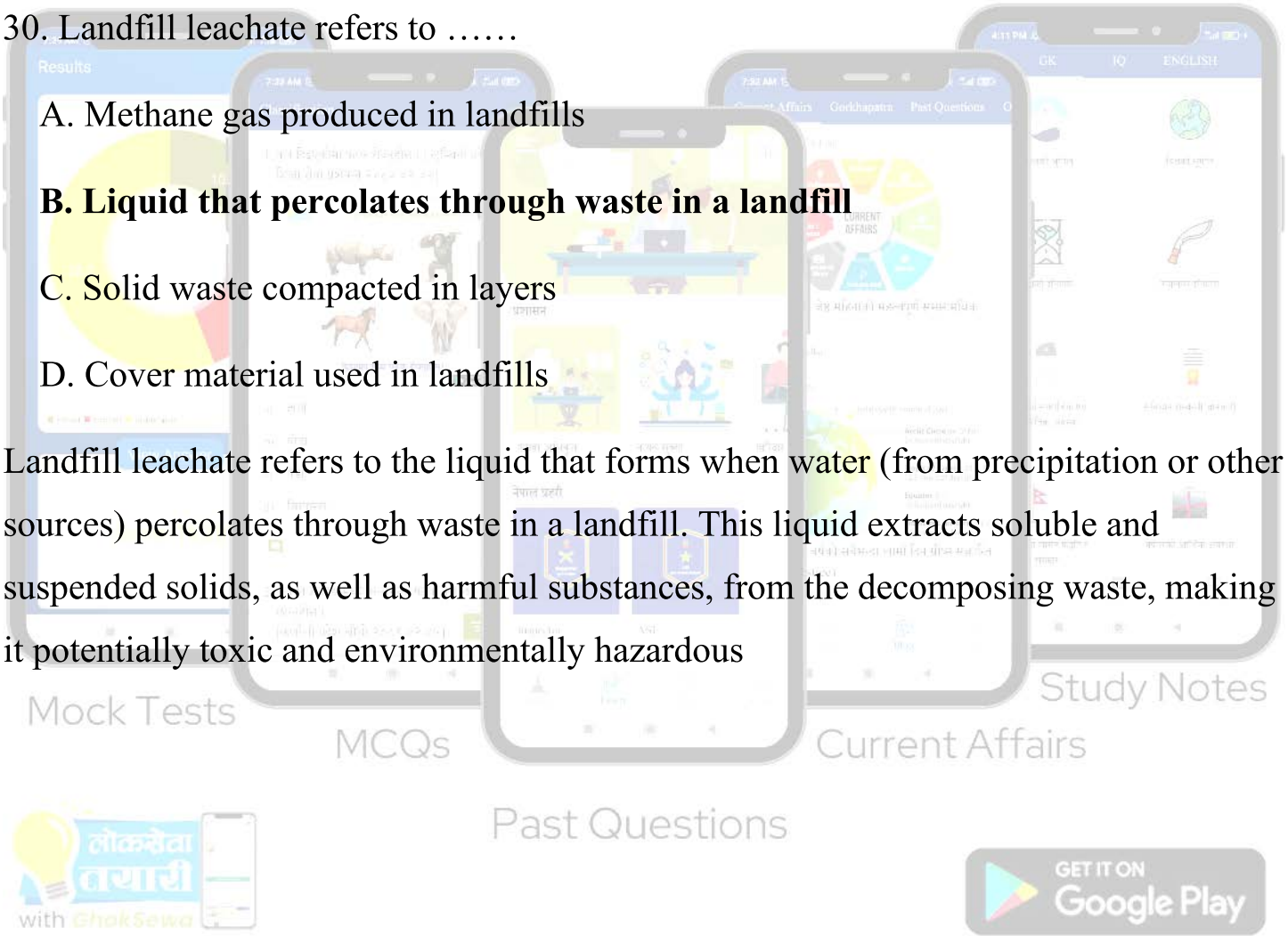
A. Methane gas produced in landfills

B. Liquid that percolates through waste in a landfill

C. Solid waste compacted in layers

D. Cover material used in landfills

Landfill leachate refers to the liquid that forms when water (from precipitation or other sources) percolates through waste in a landfill. This liquid extracts soluble and suspended solids, as well as harmful substances, from the decomposing waste, making it potentially toxic and environmentally hazardous



31. The openings constructed on lines of sewers or drains to enable men to enter or leave the sewer are known as ……

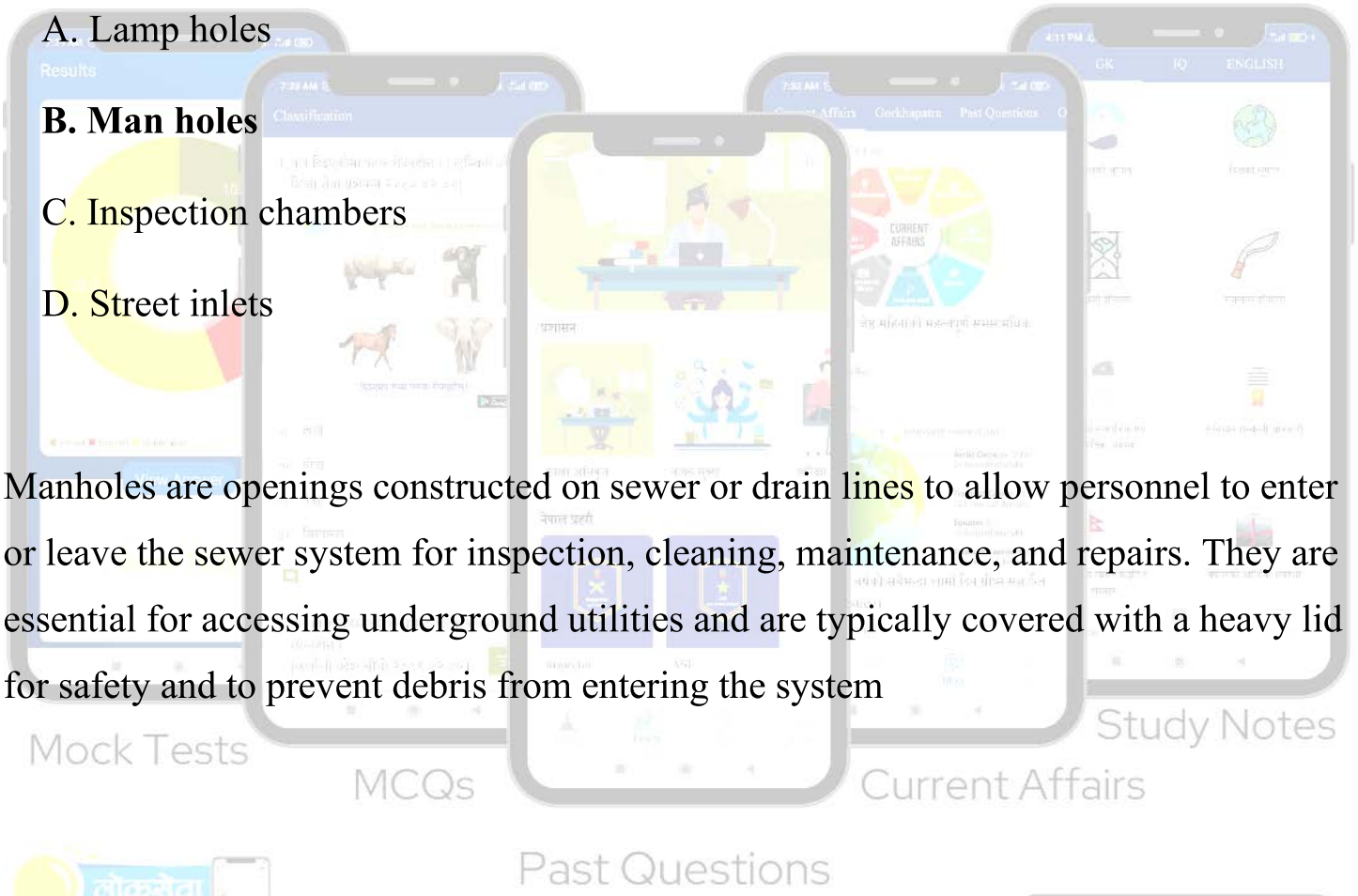
A. Lamp holes

B. Man holes

C. Inspection chambers

D. Street inlets

Manholes are openings constructed on sewer or drain lines to allow personnel to enter or leave the sewer system for inspection, cleaning, maintenance, and repairs. They are essential for accessing underground utilities and are typically covered with a heavy lid for safety and to prevent debris from entering the system



32. The water supply pipe line should be tested at a specified pressure for …

A. One hour

B. Two hours

C. Three hours

D. Four hours

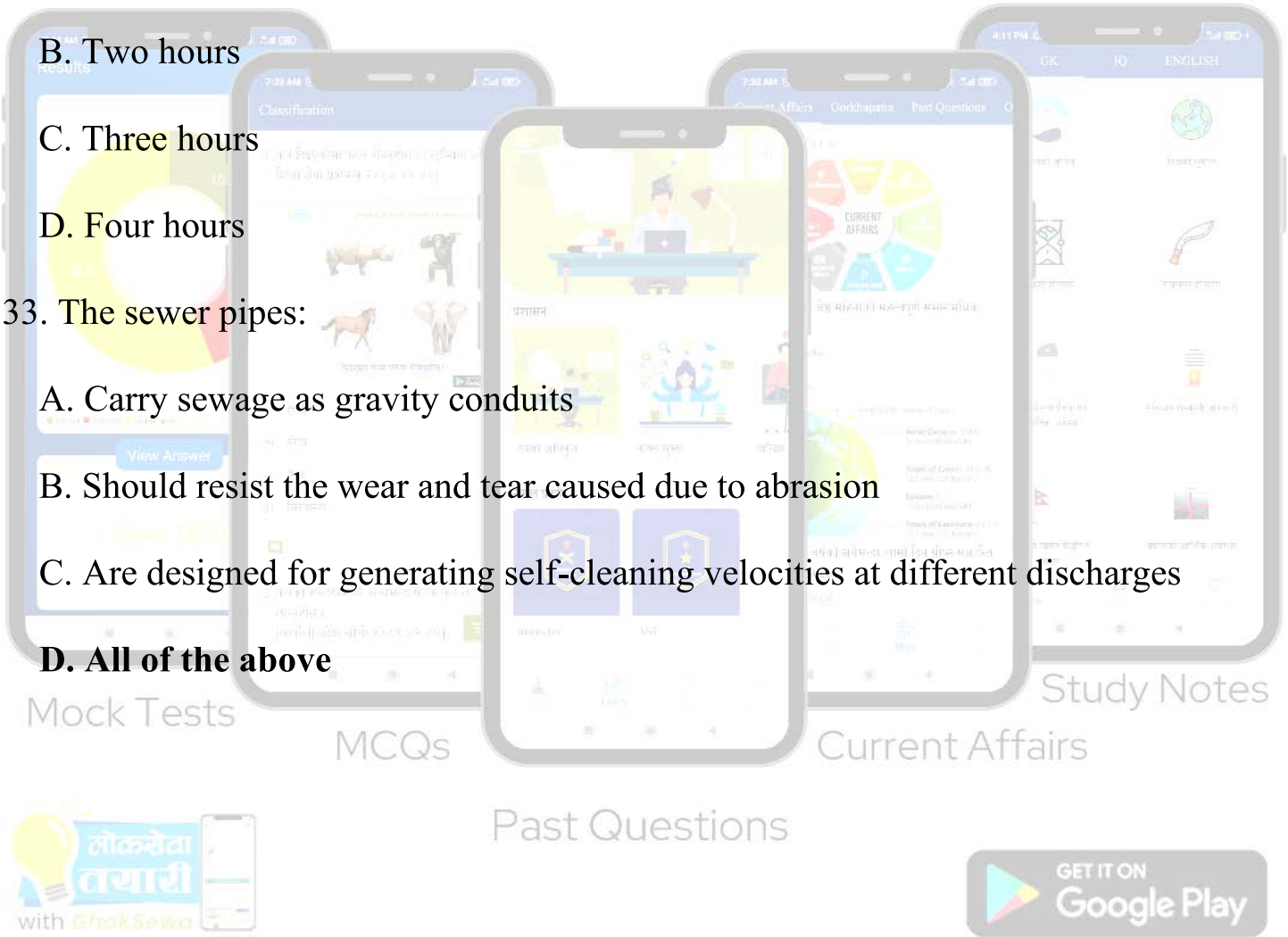
33. The sewer pipes:

A. Carry sewage as gravity conduits

B. Should resist the wear and tear caused due to abrasion

C. Are designed for generating self-cleaning velocities at different discharges

D. All of the above



34. The most suitable location of a canal head work is ……

A. Rock stage of the river

B. Trough stage of the river

C. Boulder stage of the river

D. Delta stage of the river

The most suitable location for canal headworks is in the **trough stage (or alluvial stage)** of a river. In this stage, the river's cross-section is composed of alluvial sand and silt, with a small bed slope and low velocity. This minimizes seepage losses and provides a stable foundation for the headworks. Additionally, irrigation demand is typically high in this stage, making it ideal for constructing canal headworks.

Other stages like the rocky and delta stages are generally unsuitable due to steep slopes, high velocities, or wide cross-sections, which complicate construction and operation.

35. B is the number of days of base period and D is the duty in hectare/cumec, the relationship which holds good is ……

A. D =8.6 Δ/B

B. D = Δ(8.64 D/B)

C. Δ = (8.64 B/D)

D. D = Δ(8.64 B/D)

36. The duty of water refers to ……

A. The volume of water required per hectare

B. The efficiency of water conveyance

C. The depth of water required by a crop

D. The area that can be irrigated with a unit flow of water

The duty of water refers to the **area of land (in hectares)** that can be irrigated with a continuous supply of **1 cubic meter per second (cumec)** of water during the entire base period of the crop. It represents the efficiency of water use in irrigation and is typically expressed in hectare/cumec

37. Diversion head work is constructed to ……

A. Lower water level in the river

B. Regulate the intake of water into the canal

C. Regulate silt entry into the canal

D. All of the above

Note: Since lowering water level in the river is not the primary intention of a diversion headwork the best option is B. If option A) was raising the water level in the river the correct answer would have been all of the above.

38. Which of the following is classified as routine maintenance?

A. Resurfacing

B. Pothole patching

C. Pavement reconstruction

D. Realignment

Pothole patching is classified as **routine maintenance**, as it involves regular and ongoing activities to keep roads functional and safe. Routine maintenance typically

includes tasks like repairing small damages (e.g., potholes), cleaning drains, and maintaining road signs, which are performed continuously regardless of traffic volume or road conditions

39. In semi-grouted macadam pavement, the hoggin material is …

A. Fine sand

B. Bitumen

C. Stone powder

D. Coarse aggregate

In semi-grouted macadam pavement, also known as grouted macadam, the term "hoggin" refers to a mixture of materials used to fill the voids within the pavement structure. This mixture typically consists of stone powder, which helps in binding the aggregates together, enhancing the pavement's stability and durability.

40. Deviation of the alignment of a trace cut may be permitted in areas involving:

A. Dense jungles

B. Land slides

C. Sand dunes

D. None of the above

Deviation of the alignment of a trace cut is generally permitted in areas involving **landslides**, as these areas pose significant safety risks and challenges to construction. Adjusting the alignment helps avoid unstable zones and ensures the stability and safety of the infrastructure being constructed.

41. The formation width of a road means the width of ……

A. Pavement and shoulder

B. Carriage way

C. Embankment at ground level

D. Embankment at top level

In road construction, the **formation width** refers to the total horizontal width of land affected by the construction of the road, extending from the top of the cut slope on one side to the top of the cut slope on the other side. This width encompasses the entire roadway, including the carriageway (the portion of the road used by vehicles) and shoulders, as well as any embankments or cuttings.

42. Valuation is done for ……

A. Present value based on reality

B. Minimum value

C. Market value

D. None of the above

Valuation is typically done to determine the **market value**, which represents the price an asset would fetch in a competitive and open market. This approach ensures that the valuation reflects the current economic conditions and the asset's worth based on demand, supply, and other market factors.

43. The quantity of the shutter of doors and windows is calculated in:

A. m

B. m^2

C. m^3

D. lump-sum

The quantity of shutters for doors and windows is calculated in **square meters (m²)**, as it involves determining the area of the shutter (length × height). This unit is commonly used for woodwork, plastering, painting, and other surface-related measurements

44. Which of the following is NOT an essential part of general specification of public works?

A. Material details

B. Work methodology

C. Illustrative sketches

D. Mode of measurement for payment

Illustrative sketches are **not an essential part** of the general specification for public works. General specifications primarily focus on material details, work methodology, and the mode of measurement for payment to ensure clarity and compliance in construction processes. Sketches or drawings are typically included in separate documents like blueprints or detailed design plans, rather than in the general specifications.

45. Scrap value is defined as:

A. The total construction cost of a building

B. The residual value of a structure after its useful life

C. The initial investment in a property

D. The tax amount on a building

Scrap value, also known as **salvage value** or **residual value**, refers to the estimated worth of an asset's components or materials when the asset has reached the end of its useful life and is no longer in service. This value represents the amount that can be recovered from selling the asset's parts or materials as scrap

46. Tender document does NOT contain ……

A. Tender form

B. BOQ

C. Amount of earnest money

D. Unit rate

Tender documents typically include components such as the **tender form**, **Bill of Quantities (BOQ)**, and the **amount of earnest money**, but they do not specify **unit**

rates directly. Unit rates are usually provided by the bidders during the tendering process as part of their cost estimation and proposal.

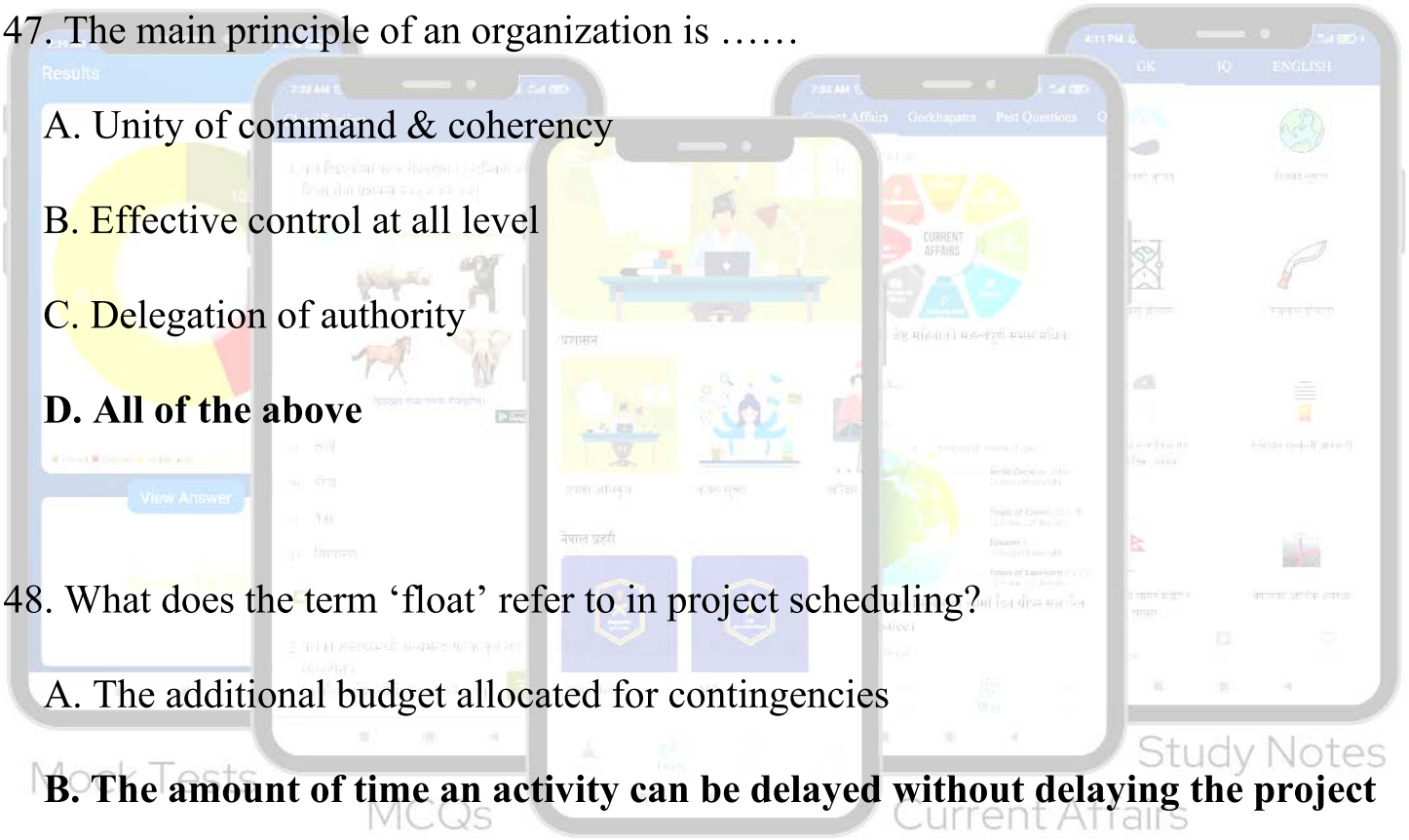
47. The main principle of an organization is ……

A. Unity of command & coherency

B. Effective control at all level

C. Delegation of authority

D. All of the above



48. What does the term ‘float’ refer to in project scheduling?

A. The additional budget allocated for contingencies

B. The amount of time an activity can be delayed without delaying the project

C. The variation in resource allocation

D. The profit margin on the project

49. What does “ICAO” stand for?

A. International Civil Aeronautics Organization

B. International Civil Aviation Organization

C. International Construction and Aviation Organization

D. International Cargo and Airline Operations

50. A flexible pavement of runway consists of ……

A. Finishing course, surface course and base course

B. Surface course, base course and sub-base course

C. Base course, sub-base course and rough course

D. All of the above

A flexible pavement of a runway typically consists of the **surface course**, **base course**, and **sub-base course**. These layers work together to distribute loads, resist deformation, and provide durability. The surface course is the topmost layer made of asphalt, the base course provides structural support, and the sub-base course further distributes loads to the subgrade beneath