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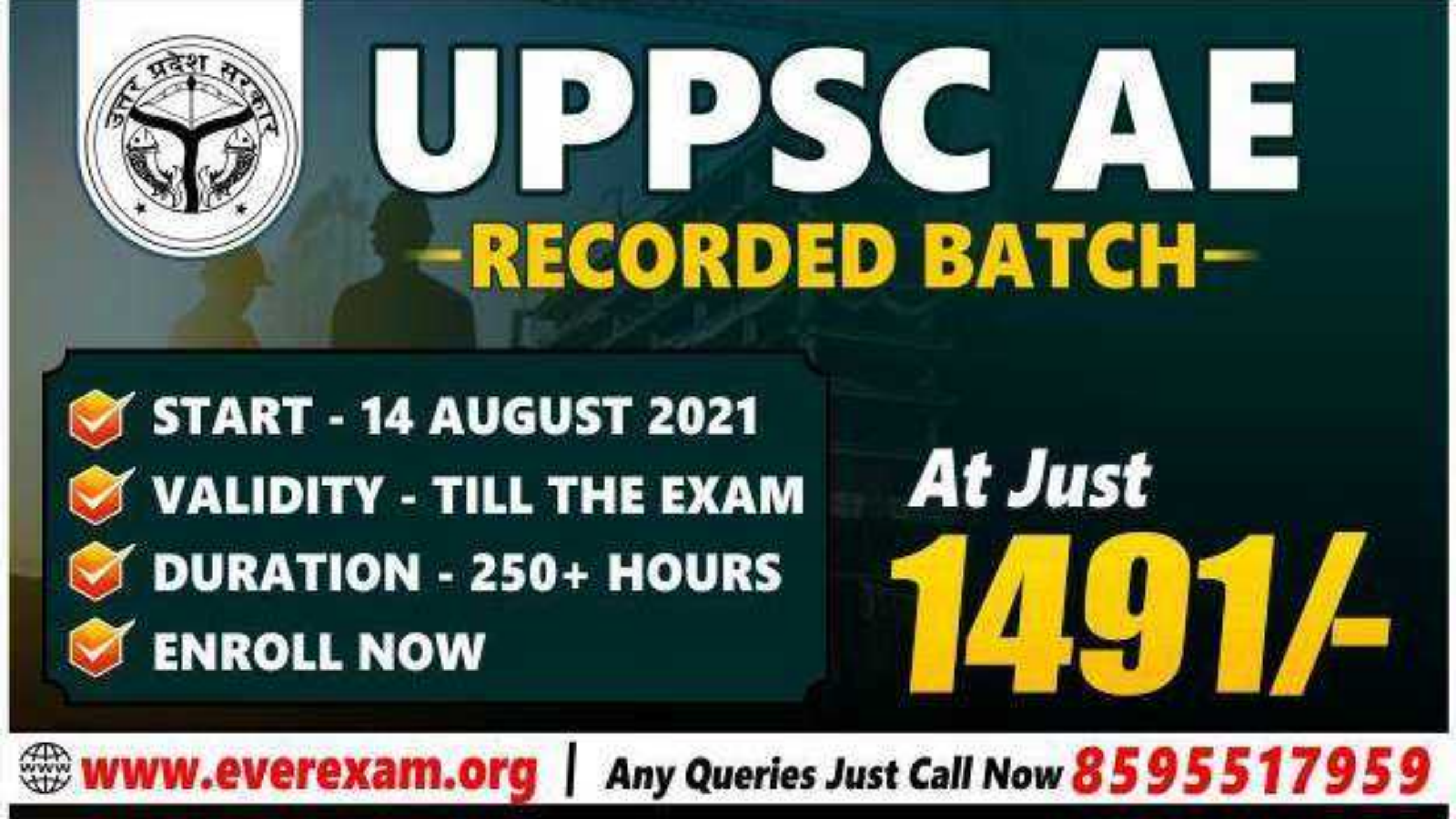
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RAJASTHAN JE MOCK-1

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Q : 1) The maximum allowable Los angeles abrasion value for high quality surface course is

A : 50%

B : 30%

C : 25%

D : 80%

Q : 2) The tolerance in the width of mould of a class brick is about-

A : ± 3 mm

B : ± 6 mm

C : ± 10 mm

D : ± 12 mm

Q : 3) Tolerance limits for dimensions of bricks in length, width and height, respectively, for sample of 20 bricks taken together as per IS code are:

A : 2000 mm, 90 mm, 90 mm

B : 80 mm, 40 mm, 40 mm

C : 100 mm, 95 mm, 95 mm

D : 50 mm, 20 mm, 20 mm

Q : 4) For low alkali, content is usually restricted to X% by weight, where X is:

A : 0.04

B : 0.40

C : 0.50

D : 0.60

Q : 5) In handling air-entraining admixtures the beneficial amount of entrained air depends upon certain factors like

1. Type and quantity of air-entraining agent
2. Water-cement ratio of the mix
3. Strength of aggregates
4. Extent of compaction of concrete

A : 1, 2 and 3 only

B : 1, 2 and 4 only

C : 1, 3 and 4 only

D : 1, 2, 3 and 4

Q : 6) According to IS code, allowable settlement of raft foundation on sand is

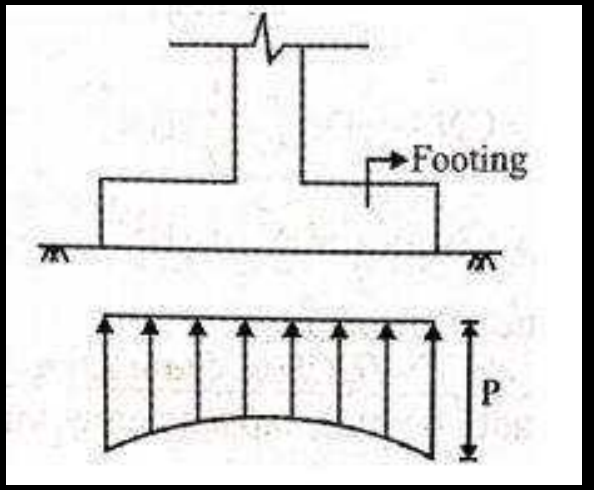
A : 25 mm to 40 mm

B : 40 mm to 65 mm

C : 75 mm to 100 mm

D : 100 mm to 120 mm

Q : 7) The figure given below represents the contact pressure distribution on underneath as:



A : Rigid footing on saturated soil

B : Rigid footing on sand

C : Flexible footing on saturated clay

D : Flexible footing on sand

Q : 8) Statement A : plate load test is a short duration test and is not suitable in cohesive soils.

Statement B : plate load test does not record the total settlement of the test plate in clayey soils.

A : Both the statements A and B are true but B is not the correct explanation of A

B : Statement A is true but B is false

C : Statement A is false but B is true

D : Both the statements A and B are true and B is the correct explanation of A

Q : 9) Which one of the following states of field compaction of sand deposit truly represents the corrected standard penetration test value N (corrected) = 12?

A : Loose

B : Medium dense

C : Dense

D : Very dense

Q : 10) Consider the following statements as suggestive of the bearing capacity of soil:

1. The maximum net loading intensity at which neither the soil fails in shear nor is there excessive settlement detrimental to the structure.
2. The maximum net pressure which the soil can carry without shear failure.
3. The net ultimate bearing capacity of the soil divided by a factor of safety.

Which of the above statements is/are correct?

A : 1, 2 and 3

B : 1 only

C : 2 only

D : 3 only

Q : 11) Fender piles are

A : Used to function as retaining walls

B : Used to protect concrete deck or other water front structures from the abrasion or impact

C : Driven at an inclination to resist large horizontal inclined forces

D : Driven in granular soil with the aim of increasing the bearing capacity of the soil

Q : 12) In a triaxial shear test conducted on a soil sample is having cohesion of 12 kPa and the angle of shearing resistance of 36°, if the cell pressure is 200 kPa, the deviator stress at failure will be:

A : 617.5 kPa

B : 817.5 kPa

C : 770.37 kPa

D : 47.1 kPa

Q : 13) An initial cross-sectional area of a clay sample was 15 cm^2. The failure strain was 25% in an unconfined compression test. The corrected area of the sample at failure would be

A : 15 cm^2

B : 20 cm^2

C : 25 cm^2

D : 30 cm^2

Q : 14) Considerable loss of shear strength due to shock or disturbance is exhibited by:

A : under consolidated clays

B : Normally consolidated clays

C : Over consolidated clays

D : Organic soil

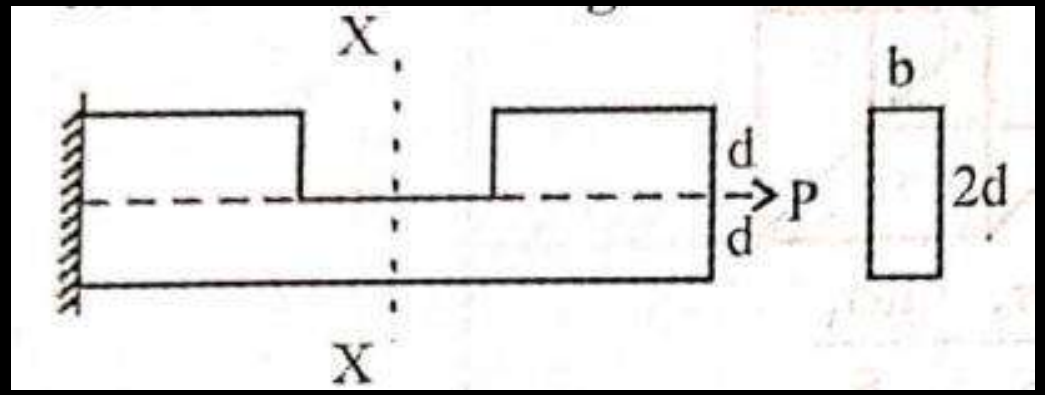
Q : 15) Determine the maximum tensile stress at the section XX in the figure below:

A : 2P/bd

B : 4P/bd

C : 6P/bd

D : 8P/bd



Q : 16) A mild steel bar, circular in cross-section, tapers from 40 mm diameter to 20 mm diameter over its length of 800 mm. It is subjected to an axial pull of 20 kN. E = 2×10^5 N/mm^2. The increase in the length of the rod will be

A : $\frac{1}{10\,\pi}$ mm

B : $\frac{2}{5\,\pi}$ mm

C : $\frac{4}{5\,\pi}$ mm

D : $\frac{1}{5\,\pi}$ mm

Q : 17) A simply supported beam with rectangular cross section is subjected to a central concentrated load. If the width and depth of the beam are doubled, while retaining the same clastic properties, then the deflection at the centre of the beam w.r.t the original deflection will be reduced to

A : 50%

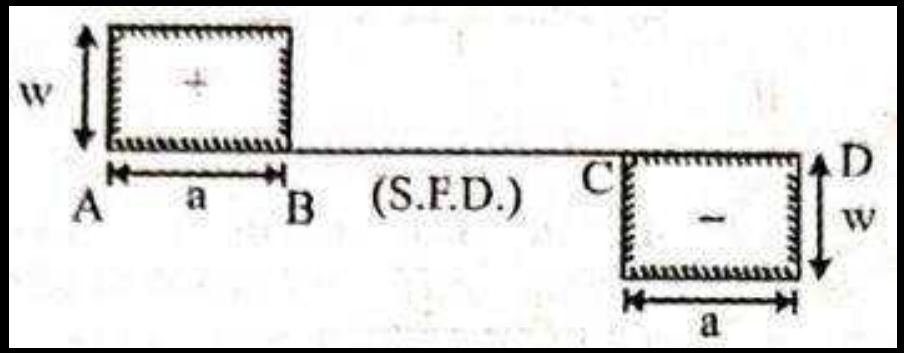
B : 25%

C : 75%

D : 12.50%

E : 6.25%

Q : 18) The shear force diagram for a simply supported beam of span L is shown in the figure. The maximum bending moment in the beam is:



A : $\frac{wL}{2}$

B : w$\left(\frac{L}{2} - a\right)$

C : wa

D : w(L-a)

Q : 19) A beam of triangular cross-section is placed with its base horizontal. The maximum shear stress intensity in the section will be

A : At the neutral axis

B : At the base

C : Above the neutral axis

D : Below the neutral axis

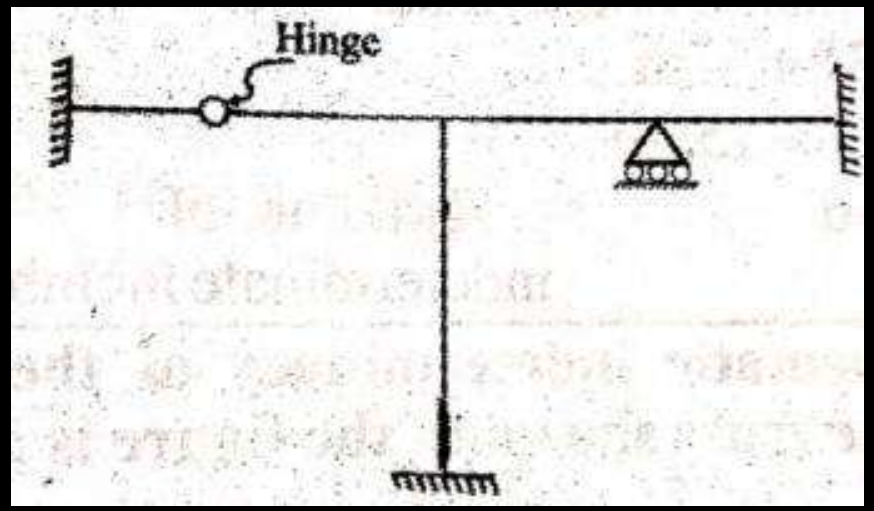
Q : 20) The degree of static indeterminacy of the frame shown in the following figure is

A : 2

B : 4

C : 6

D : 8



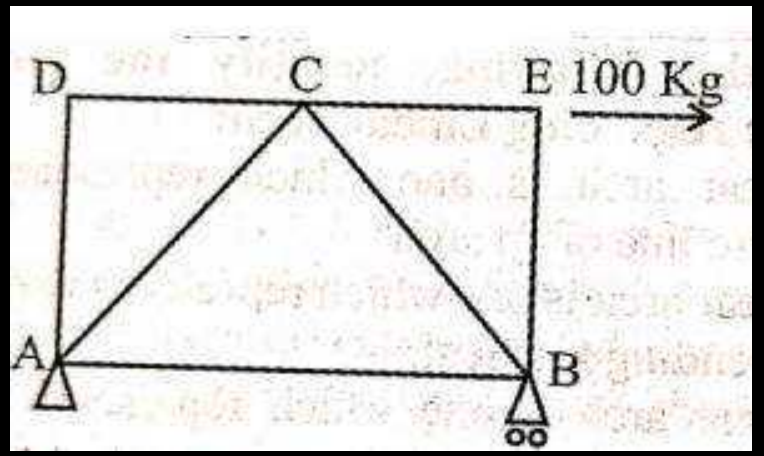
Q : 21) Identify the members with zero member force in the following truss:

A : AD, DC and EB

B : AD, DC and CE

C : AD, AB and AC

D : None of the above



Q : 22) In the truss shown below which statement is correct?

A : Externally unstable

B : Internally unstable

C : Statically determinate structure

D : Statically indeterminate structure

Q : 23) As per IS 456 : 2000, minimum period before striking formwork for vertical surface of the columns

A : 1 days

B : 7 days

C : 14 days

D : 28 days

Q : 24) Match the information given in Group-I with those in group-II:

Group-I	Group-II
P. Factor to decrease ultimate strength to design strength	1. Upper bound on ultimate load
Q. Factor to increase working load to ultimate load for design	2. Lower bound on ultimate load
R. Statically method of ultimate load analysis	3. Material partial safety factor
S. Kinematical mechanism method of ultimate load analysis	4. Load factor

A : P-1; Q-2; R-3; S-4

B : P-2; Q-1; R-4; S-3

C : P-3; Q-4; R-2; S-1

D : P-4; Q-3; R-2; S-1

Q : 25) To avoid sudden collapse just after a shear crack, minimum shear reinforcement is provided in prestressed concrete member in the form of stirrups. IS 1343 suggested the relation as-

A : $\frac{A_{sv}}{b.S_v} = \frac{0.4d}{0.87f_y}$

B : $\frac{A_{sv}}{bd.S_v} = \frac{0.4}{0.87} \times f_y$

C : $\frac{A_{sv}}{b.S_v} = \frac{0.4}{0.87f_y}$

D : $\frac{A_{sv}}{b.S_v} = \frac{0.4f_{ck}}{0.87f_y}$

Q : 26) Match the minimum number of longitudinal steel bars required in columns as per cross section of column-

A. Rectangular column	(i) 4
B. Circular column	(ii) 5
C. Circular column	(iii) 6
D. Octagonal column	(iv) 8

A : (i), (ii), (iii)

B : (i), (iii), (iv)

C : (iv), (iii), (i)

D : (iii), (i), (iv)

Q : 27) The vertical retaining wall of the RCC counterfort is designed as a _____.

A : Cantilever

B : Simply supported slab

C : Continuous slab

D : None of these

Q : 28) The critical section for maximum bending moment in the footing under masonary wall is located at

A : The middle of wall

B : The face of the wall

C : Mid-way between the face and the middle of the wall

D : A distance equal to the effective depth of footing

Q : 29) In counterfort retaining walls, the upright and heel slab act as:

A : Cantilever

B : Continuous slab

C : Simple supported slab

D : Slab supported or four sides

Q : 30) The minimum pitch of the rivet shall not be less than

A : d

B : 1.5 d

C : 2.0 d

D : 2.5 d

Q : 31) Yielding in structural members with partial safety factor as 1.1 is governed by:

A : Net area of connected lug angle

B : Sectional area

C : Effective area

D : Gross area

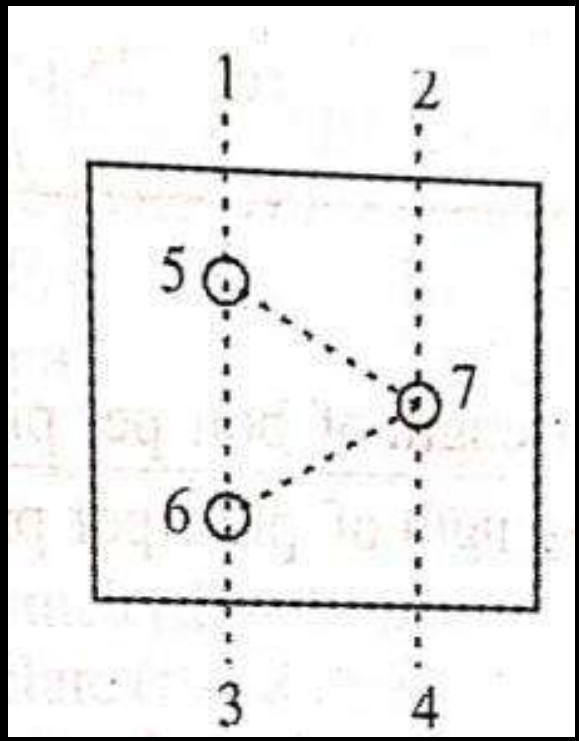
Q : 32) Which section to be considered in the design for the net area of flat?

A : 1-5-6-3

B : 2-7-4

C : 1-5-7-4

D : 1-5-7-6-3



Q : 33) A fillet weld is not recommended if the angle between the fusion faces is:

A : Equal to 60^o

B : Equal to 120^o

C : equal to 90^o

D : Less than 60^o

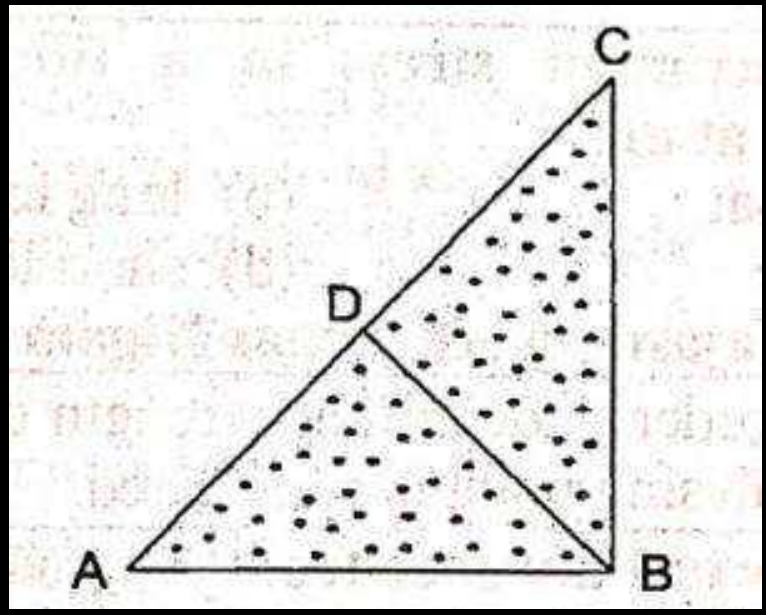
Q : 34) For the fillet weld cross-section shown in figure the throat thickness is:

A : AB

B : BC

C : AD

D : BD



Q : 35) The construction of a temporary structure required to support an unsafe structure is called

A : Shoring

B : Jacking

C : Underpinning

D : Scaffolding

Q : 36) Cement pressure grouting is suitable for

A : Very fine crack

B : Weathered concrete

C : Active crack where cause of crack is known and remedial action has been taken

D : Crushed masonry

Q : 37) ……. Is the triangular walling enclosed by the extrados of the arch, a horizontal line from the crown of the arch and a perpendicular line from the springing of the outer curves.

A : Haunch

B : Spandril

C : Key stone

D : Voussoirs

Q : 38) ……. Is a horizontal moulded projection provided near the top of a building or at a junction of a wall and ceiling:

A : Cornice

B : Frieze

C : Reveal

D : Jamb

Q : 39) The difference between the total float and free float is known as

A : Free float

B : Total float

C : Independent float

D : Interfering float

Q : 40) In the optimistic time, most likely time and pessimistic time for activity A are 7, 8 and 9 days respectively and for activity B are 6, 7.5 and 12 days respectively, then :

A : Expected time of activity A is greater than the expected time of activity B

B : Expected time of both the activities A and B will be same

C : Expected time of activity B is greater than the expected time of activity A

D : None of the above

Q : 41) Match List-I with List-II and select correct answer:

List-I	List-II
A. Optimal cost	1. Activity related
B. Overhead cost	2. Developed by crashing process
C. Direct cost	3. Project related
D. Indirect cost	4. Contained in or contributing exclusively to related product.

A : 4, 3, 2, 1

B : 2, 1, 4, 3

C : 4, 1, 2, 3

D : 2, 3, 4, 1

Q : 42) Updating may result:

A : Change of critical path

B : Decrease in project completion time

C : Increase in project completion time

D : All of the above

Q : 43) Salvage value is defined as :

A : Value of dismantled materials of a property at the end of its utility period

B : Estimated value of built up property at the end of its useful life without being dismantled

C : Value of the property shown in the account book in that particular year

D : Present value of a property considering it to be replaced at the current marked rates

Q : 44) The rights and privileges which an owner of a property enjoys through or over the property of another is known as-

A : Property right

B : Lease right

C : Legal right

D : Easement

Q : 45) Which of the following is not related to the cost slope:

A : Crash cost

B : Normal cost

C : Crash time

D : Slack

Q : 46) Direction: Match list I with list II and select the correct answer using code given below the two list in each equation.

List-I	List-II
A. Valuation	1. Determining price of property
B. Mortgage	2. Charges levied on property
C. Taxation	3. Security taken for giving load
D. Specification	4. Mode of describing nature and class of work

A : 1, 2, 3, 4

B : 1, 3, 2, 4

C : 4, 3, 2, 1

D : 3, 4, 2, 1

Q : 47) Find the density of metallic body which floats at the interface of mercury of sp.gr 13.6 and water such that 40% of its volume is sub-merged in mercury and 60% in water

A : 6040 kg/m^3

B : 12080 kg/m^3

C : 24160 kg/m^3

D : 3020 kg/m^3

Q : 48) A manometric liquid should suitably have _____

A : Low density & low vapour pressure

B :Low density & high vapour pressure

C : high density & low vapour pressure

D : High density & high vapour pressure

Q : 49) Two horizontal plates placed 250 mm have an oil of viscosity 20 poises. Calculate the shear stress in oil if upper plate is moved with velocity of 1250 mm/s.

A : 20 N/m^2

B : 2 N/m^2

C : 10 N/m^2

D : None of the metioned

Q : 50) The value of the bulk modulus of an ideal fluid is

A : Zero

B : Unity

C : Infinity

D : Less than that of a real fluid

Q : 51) What is the term used for an imaginary line on the ground joining points of equal elevation?

A : Level line

B : Line of sight

C : Datum

D : Contour

Q : 52) How many methods of observing the bearings of lines by fast needle method?

A : 2

B : 3

C : 4

D : 5

Q : 53) Which of the following is not a part of the prismatic compass?

A : Agate cap

B : Prism cap

C : Brake pin

D : Jewel bearing

Q : 54) How much inclination must be provided in a tilted photograph?

A : 13^0

B : 20^0

C : 3^o

D : 34^o

Q : 55) The plane perpendicular to the camera axis can be given as_____

A : Vertical plane

B : Horizontal plane

C : Picture plane

D : Azimuthal plane

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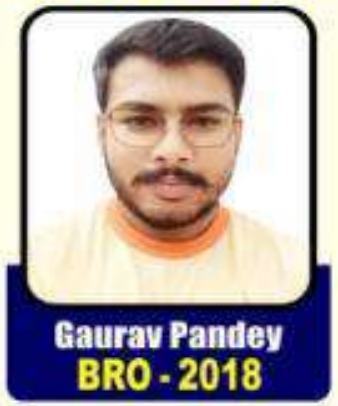

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