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Q : 1) If p is the standard consistency of cement the amount of water used in conducting the initial setting time test on cement is

A : $0.65 p$

B : $0.85 p$

C : $0.6 p$

D : $0.8 p$

Q : 2) For complete hydration of cement the w/c ratio needed is

A : Less than 0.25

B : More than 0.25 but less than 0.35

C : More than 0.35 but less than 0.45

D : More than 0.45 but less than 0.60

Q : 3) Blast furnace slag has approximately

A : 45% calcium oxide and about 35% silica

B : 50% alumina and 20% calcium oxide

C : 25% magnesia and 15% silica

D : 25% calcium sulphate and 15% alumina

Q : 4) The temperature range in a cement kiln is

A : 500 to 1000^oC

B : 1000 to 1200^oC

C : 1300 to 1500^oC

D : 1600 to 2000^oC

Q : 5) Before testing setting time of cement one should test for

A : Soundness

B : Strength

C : Fineness

D : Consistency

Q : 6) Increase reduces the rate of strength development and leads to higher shrinkage

B : Increases the rate of strength development and reduces the rate of deterioration

C : Decreases the rate of strength development and increases the bleeding of cement.

D : Increases the rate of strength development and leads to higher shrinkage

Q : 7) The test on cement designed to accelerate the slaking process of the ingredient of cement and to determine the resulting expansion in a short time is

A : Setting time test

B : Soundness test

C : Normal consistency test

D : Accelerated test

Q : 8) For marine works, the best suited cement is

A : Low heat Portland cement

B : Rapid hardening cement

C : Ordinary Portland cement

D : Blast furnace slag cement

Q : 9) The proper size of mould for testing compressive strength of cement is

A : 7.05 cm cube

B : 10.05 cm cube

C : 15 cm cube

D : 12.05 cm cube

Q : 10) The specific gravity of commonly available ordinary Portland cement is

A : 4.92

B : 3.15

C : 2.05

D : 1.83

Q : 11) A quick-setting cement has an initial setting time of about

A : 50 minutes

B : 40 minutes

C : 15 minutes

D : 5 minutes

Q : 12) In cements, generally the increase in strength during a period of 14 days to 28 days is primarily due to

A : C_3A

B : C_2A

C : C_3S

D : C_4AF

Q : 13) What is the requirement of water (expressed as % of cement w/w) for the completion of chemical reactions in the process of hydration of OPC?

A : 10 to 15%

B : 15 to 20%

C : 20 to 25%

D : 25 to 30%

Q : 14) Fineness of cement is measured in the units of

A : Volume / mass

B : Mass / volume

C : Area / mass

D : Mass / area

Q : 15) Soundness test of cement is carried out to determine its

A : Alumina content

B : Iron oxide content

C : Free lime content

D : Durability under sea water

Q : 16) Which compound of cement is responsible for strength of cement?

A : Magnesium oxide

B : Silica

C : Alumina

D : Calcium sulphate

Q : 17) Which type of cement is recommended in large mass concrete works such as a dam?

A : Ordinary Portland

B : High alumina

C : Low-heat Portland

D : Portland pozzolana

Q : 18) The constituent compound in Portland cement which reacts immediately with water, and also sets earliest, is

A : Tricalcium silicate

B : Dicalcium silicate

C : tricalcium aluminate

D : Tetra calcium aluminoferrite

Q : 19) Which one of the following cements is a deliquescent?

A : Quick setting Portland cement

B : White and Coloured cement

C : Calcium chloride cement

D : Water repellent cement

Q : 20) Air permeability method is used to determine

A : Soundness of cement

B : Setting time

C : Fineness of cement

D : Resistance of cement

Q : 21) Polymer concrete is most suitable for

A : Sewage disposal works

B : Mass concreting works

C : Insulating exterior walls of an air-conditioned building

D : Road repair works

Q : 22) The cement and water slurry coming on the top and setting on the surface is called

A : Crazing

B : Efflorescence

C : Sulphate deterioration

D : Laitance

Q : 23) Which one of the following methods/techniques will be used for placing of concrete in dewatered 'Caissons or coffer' dams?

A : Tremie method

B : Placing in bags

C : Prepacked concrete

D : In-the-dry practice

Q : 24) The minimum cement content (kg/m^3) for a pre-specified strength of concrete (using standard notations) premised on 'free water-cement ratio' will be as

A : $1 - \frac{C}{1000S_c} - \frac{W}{1000}$

B : $\frac{\text{Water content}}{\text{Water cement ratio}}$

C : Water content \times water cement ratio

D : $\frac{100F}{C+F}$

Q : 25) On an average, in a 125 mm slump, the concrete may lose about (in first one hour)

A : 15 mm of slump

B : 25 mm of slump

C : 40 mm of slump

D : 50 mm of slump

Q : 26) The creep strain of cement attains its terminal values by

A : 1 year

B : 2 years

C : 5 years

D : 6 months

Q : 27) Which method of curing of concrete is recommendable for rapid gain of strength of concrete?

A : Sprinkling water

B : Membrane curing

C : High-pressure stream curing

D : Infrared radiation curing

Q : 28) Which of the following is appropriate as simple field method for assessing consistency of concrete?

A : Compacting factor

B : Slump test

C : Vee-bee test

D : Kelly ball test

Q : 29) In a concrete mix, if the maximum size of coarse aggregate is increased the proportion of fine to coarse aggregate should be

A : Increased

B : Decreased

C : Kept the same

D : Not dependent on size of aggregates

Q : 30) Which of the following tests compares the dynamic modulus of elasticity of samples of concrete?

A : Compression test

B : Ultrasonic pulse velocity test

C : Split test

D : Tension test

Q : 31) If one intends to obtain the best workability of concrete, the preferred shape of aggregate is

A : Round

B : Annual

C : Triangular

D : Flinty

Q : 32) According to the Indian standard specifications, concrete should be cured under a humidity of

A : 90%

B : 80%

C : 70%

D : 60%

Q : 33) Which one of the following is not required in concrete mix-design?

A : Degree of quality control concrete

B : Workability of concrete

C : Characteristic compressive strength of concrete at 28 days

D : Initial setting time of cement

Q : 34) Which one of the following is employed to determine strength of hardened existing concrete structure?

A : Bullet test

B : Kelly ball test

C : Rebound hammer test

D : Cone penetrometer

Q : 35) Which one of the following is the correct expression for the target mean strength f_t of concrete mix?

A : $f_t = kf_{ck} + S$

B : $f_t = f_{ck} + kS$

C : $f_t = f_{ck} + S$

D : $f_t = kf_{ck} + K$

Where f_{ck} is characteristic strength, K is probability factor and S is standard deviation

Q : 36) How are concrete mixers specified?

A : By the number of cement bag used in a batch

B : By the nominal volume of concrete that can be mixed in a batch

C : By the volume of water used

D : By the volume of aggregate used

Q : 37) What is the correct sequence of operations involved in concrete productions?

A : Batching – Mixing – Handling – Transportation

B : Mixing – Batching – Handling – Transportation

C : Transportation – Handling – Mixing – Batching

D : Handling – Transportation – Mixing – Batching

Q : 38) What type of vibrator is used for concreting thin section as well as heavily reinforced section?

A : Vibrating needle

B : Internal vibrator

C : Surface vibrator

D : Form vibrator

Q : 39) Which one of the following aggregate gives maximum strength in concrete?

A : Rounded aggregate

B : Elongated aggregate

C : Flaky aggregate

D : Cubic aggregate

Q : 40) The role of superplasticizer in a cement paste is to

A : Disperse the particles

B : Disperse the particles and remove air bubbles

C : Disperse the particles, remove air bubbles and to retard setting

D : Retard setting

Q : 41) When the deposit of efflorescence is more than 10% but less than 50% of the exposed area of the brick, the presence of efflorescence is

A : Moderate

B : Slight

C : Heavy

D : Serious

Q : 42) Mohs scale is used for stones to determine

A : Flakiness index

B : Durability

C : Strength

D : Hardness

Q : 43) Which one of the following stone is produced by moulding a mixture of iron slag and Portland cement?

A : Imperial stone

B : Garlic stone

C : Ransom stone

D : Victoria stone

Q : 44) Which of the following is an ODD one as regards 'requirements' of good brick-earth?

A : It must be free from lumps of lime

B : It should not be mixed with salty water

C : It must be non-homogeneous

D : It should not contain vegetable and organic matter

Q : 45) The compressive strength of heavy duty bricks, as per IS : 2980-1962, should be not less than

A : 440 kg/cm^2

B : 175 kg/cm^2

C : 100 kg/cm^2

D : 75 kg/cm^2

Q : 46) In order to achieve a safe compressive strength of 20 kg/cm^2 in a brick masonry, what should be the suitable range of crushing strength of bricks?

A : 35 kg/cm^2 to 70 kg/cm^2

B : 70 kg/cm^2 to 105 kg/cm^2

C : 105 kg/cm^2 to 125 kg/cm^2

D : More than 125 kg/cm^2

Q : 47) The temperature at which the bricks are burnt in kiln varies from

A : 500° to $800^{\circ}C$

B : 800° to $1000^{\circ}C$

C : 1000° to $1200^{\circ}C$

D : 1200° to $1500^{\circ}C$

Q : 48) which one of the following is the correct statement?

Refractory bricks resist:

A : High temperature

B : Chemical action

C : Dampness

D : All of the above

Q : 49) The bricks which are extensively used for basic refractories in furnaces are

A : Chrome bricks

B : Sillimanite bricks

C : Magnesite bricks

D : Forsterite bricks

Q : 50) The mortar used for masonry construction are classified based on strength is IS 2250 and IS 1905 according to their designation $L_1, L_2, H_1, H_2, M_1, M_2$. The correct sequence of increasing order of their strength is

A : $L_1, L_2, H_1, H_2, M_1, M_2$

B : $L_2, L_1, M_2, M_1, H_2, H_1$

C : $M_1, M_2, H_1, H_2, L_1, L_2$.

D : $L_2, L_1, M_1, M_2, H_1, H_2$.

Q : 51) Lime mortar is generally made with

A : Quick lime

B : Fat lime

C : Hydraulic lime

D : White lime

Q : 52) The compressive strength of a standard good 1 : 3 Portland cement-sand mortar after 3 days of curing should not be less than

A : 70 kg/cm^2

B : 115 kg/cm^2

C : 175 kg/cm^2

D : 210 kg/cm^2

Q : 53) The approximate proportion of dry cement mortar required for brick work is

A : 60%

B : 45%

C : 30%

D : 10%

Q : 54) The modulus of rupture of hydraulic lime mortar (28 days curing) should NOT be less than

A : 1 N/mm^2

B : 2 N/mm^2

C : 2.5 N/mm^2

D : 3.0 N/mm^2

Q : 55) The maximum bulking of sand is likely to occur at a moisture content of

A : 5%

B : 8%

C : 11%

D : 14%

Q : 56) One of the main demerits in using the lime mortar is that it

A : Is not durable

B : Does not set quickly

C : Swells

D : Is plastic

Q : 57) Guniting is the application of mortar

A : On a surface under pneumatic pressure

B : On a vertical surface

C : On brickwork by manual method

D : Of fluid consistency for repair works

Q : 58) A mortar in which both cement and lime are used in definite proportions as binding materials is referred to as

A : Light weight mortar

B : Fire resistance mortar

C : Gauged mortar

D : Water resistant mortar

Q : 59) Why is lime added to cement slurry for the topcoat of plastering?

A : To improve the strength of plaster

B : To stiffen the plaster

C : To smoothen the plaster for ease of spread

D : To make the plaster non-shrinkable

Q : 60) When steel reinforcing bars are provided in masonry, the bars shall have an embedment with adequate cover in cement-sand mortar not leaner than

A : 1 : 3

B : 1 : 4

C : 1 : 5

D : 1 : 6

Q : 61) Which one of the following light weight element will be added to enhance to protective properties for x-ray shielding mortars?

A : Sodium

B : Potassium

C : Lithium

D : Calcium

Q : 62) The relation between the strength of brick masonry f_w , the strength of bricks f_b , and the strength of mortar f_m is given by (Where K_w is a coefficient based on the layout of the bricks and the joints).

A : $f_w = \sqrt{K_w \frac{f_b}{f_m}}$

B : $f_w = K_w \sqrt{\frac{f_b}{f_m}}$

C : $f_w = \sqrt{K_w f_b f_m}$

D : $f_w = K_w \sqrt{f_b f_m}$

Q : 63) When provided with alternating courses of (a) all headers and (b) all stretchers, the front elevation of such brick masonry is designed as

A : English bond

B : Single Flemish bond

C : Double Flemish bond

D : Rat-trap bond

Q : 64) Maximum slenderness ratio for load-bearing masonry wall built in cement mortar, as per IS code, shall not exceed

A : 13

B : 20

C : 27

D : 30

Q : 65) As per masonry code, the stiffening coefficient for walls stiffened by piers, buttresses or intersection walls can be

A : 0 to 1.0

B : 1.0 to 2.0

C : Greater than 2.0

D : Invariantly 1.0

Q : 66) The average compressive strength of a burnt clay brick is less than 12.5 N/mm^2 . The allowable rating of efflorescence is

A : Moderate

B : Serious

C : Heavy

D : Zero

Q : 67) Which type of brick masonry bond is provided for heavy loads on masonry?

A : English bond

B : Zig-zag bond

C : Single Flemish bond

D : Double Flemish bond

Q : 68) In load-bearing wall, the depth of horizontal chassis should not exceed which one of the following?

A : $\frac{1}{3}$ thickness of masonry

B : $\frac{1}{4}$ thickness of masonry

C : $\frac{1}{5}$ thickness of masonry

D : $\frac{1}{6}$ thickness of masonry

Q : 69) What is the optimum mortar mix type for maximum, masonry unit strength of 5 N/mm^2

A : M_1

B : M_2

C : H_1

D : H_2

Q : 70) When the corner of a brick is removed along the line joining mid-points of adjoining sides, the portion left is called

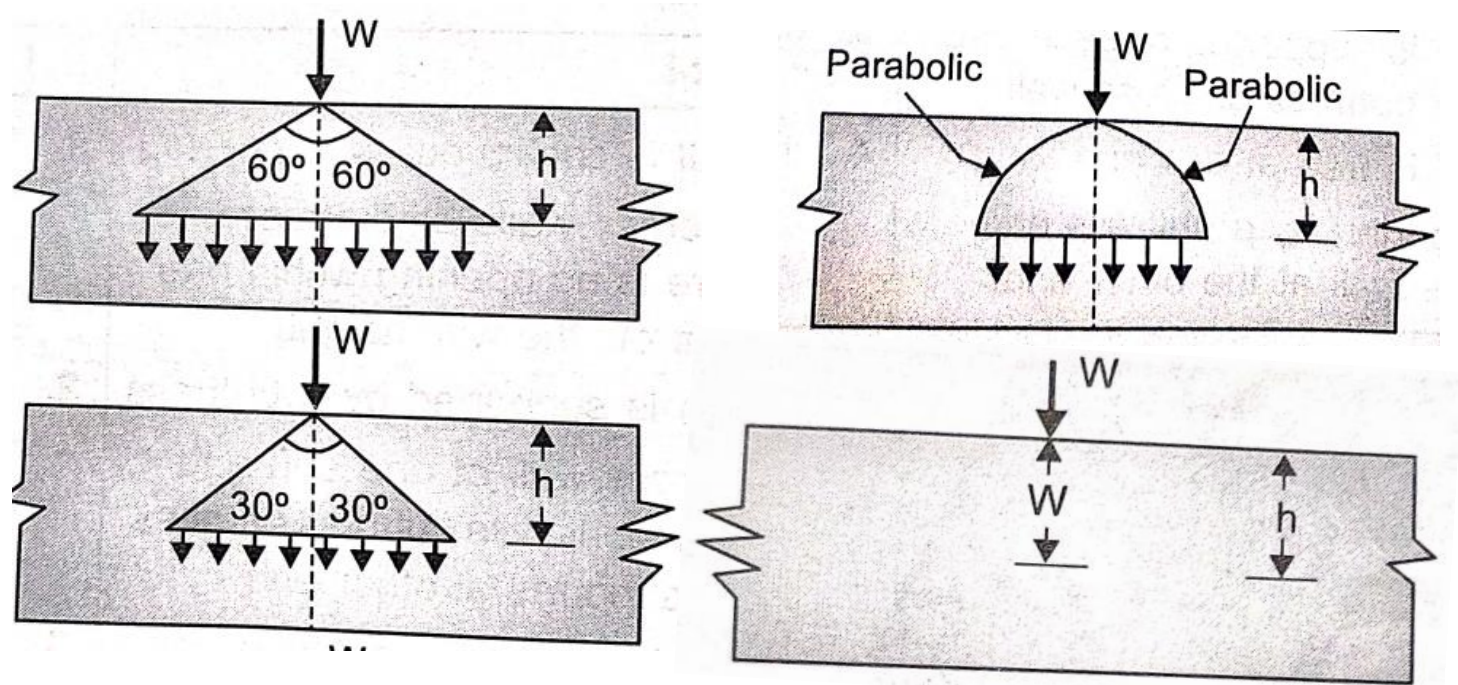
A : Closer

B : Squint brick

C : Queen closer

D : King closer

Q : 71) Which one of the following figures shows the permitted dispersion of concentrated load in masonry structures?



Q : 72) The function of coping is to serve as a

A : Covering to the wall to throw off water

B : Ornamental course between lintel level and roof level

C : Projection from a wall to support a structural member

D : Shade against solar radiation

Q : 73) For one cubic meter of brick masonry, the number of modular bricks needed is

A : 400 or less

B : 400 to 450

C : 500 to 550

D : 600 to 650

Q : 74) Window sills in residential house are normally kept at

A : 83 to 90 cm above the floor level

B : 80 to 90 cm above the floor level

C : 78 to 88 cm above the floor level

D : 75 to 85 cm above the floor level

Q : 75) King closers are related to

A : Doors and windows

B : King posts truss

C : Queen post truss

D : Brick masonry

Q : 76) In the cross-section of a timber, cambium layer can occur in

A : Inner bark and sap wood

B : Pith and heart wood

C : Sap wood and heart wood

D : Outer bark and sap wood

Q : 77) Gase(s) emitted during rotting or decomposition of timber is / are mainly

A : Methane and hydrogen

B : Hydrogen Sulphide

C : Carbonic acid and hydrogen

D : Ammonia

Q : 78) AsCu, a preservative for wood, developed by the forest research Institute, Dehradun, comprises of chemicals : $As_2O_5 \cdot 2H_2O$, $CuSO_4 \cdot 5H_2O$ and $K_2Cr_2O_7$ in the proportion of

A : 1 : 1 : 1

B : 1 : 2 : 3

C : 1 : 2 : 4

D : 1 : 3 : 4

Q : 79) Which IS code is used for classification of timber for seasoning purposes?

A : IS : 4970 – 1973

B : IS : 1708 – 1969

C : IS : 1141 – 1958

D : IS : 399 – 1963

Q : 80) The radial splits which are wider on the outside of the log and narrower towards the pith are known as

A : Star shakes

B : Annular rings

C : Cup shakes

D : Heart shakes

Q : 81) How is the process of treatment of wood using a preservative solution and forcing air in at a pressure designated?

A : Rueping process

B : Lawry process

C : Full cell process

D : Empty cell process

Q : 82) The moisture content of timber used in building frames can be

A : 2% to 5%

B : 8% to 12%

C : 12% to 18%

D : > 20%

Q : 83) As a natural material, timber is which one of the following?

A : Isotropic

B : Anisotropic

C : Homogeneous

D : Heterogeneous

Q : 84) Shear strength of timber depends on which one of the following?

A : Lignin with fibres

B : Medullary rays

C : Heartwood

D : Sapwood

Q : 85) The defect which develops due to uncontrolled and non uniform loss of moisture from wood is known as which one of the following?

A : Knot

B : Shake

C : Warping

D : Cross grain

Q : 86) The maximum deflection in timber beams or joints should not be greater than

A : $\text{Span} / 300$

B : $\text{Span} / 325$

C : $\text{Span} / 360$

D : $\text{Span} / 380$

Q : 87) Radial splits in timber originating from 'Bark' and narrowing towards the 'pith' are known as

A : Heart shakes

B : Star shakes

C : Cup shakes

D : Knots

Q : 88) In paints, linseed oil is used as

A : A thinner

B : A drier

C : A vehicle

D : A water-proofing base

Q : 89) Which one of the following limes will be used for finishing coat in plastering and white washing?

A : Semi hydraulic lime

B : Kankar lime

C : Magnesium / dolomitic lime

D : Eminently hydraulic lime

Q : 90) The carbonation process is demonstrated more by

A : Atmospheric corrosion

B : Chloride corrosion

C : Stress corrosion

D : Hydrogen embrittlement

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