

1. Lacquer paints

- are generally applied on structural steel
- are less durable as compared to enamel paints
- consist of resin and nitro-cellulose
- contain alcohol as thinner
- **all the above**

2. Pick up the polyminerallc rock from the following:

- uartz sand
- Pure gypsum
- Magnesite
- **Granite**
- None of these.

3. For the manufacture of Portland cement, the proportions of raw materials used, are

- **lime 63% ; silica 22% ; other ingredients 15%**
- lime 22% ; silica 63% ; other ingredients 15%
- silica 40% ; lime 40% ; other ingredients 20%
- silica 70% ; lime 20% ; other ingredients 10%.

4. Pick up the correct statement from the following:

- soft stones are required for carving
- light stones are required for arches
- hard stones are required to stand high pressure
- **All the above.**

5. The minimum water content at which the soil retains its liquid state and also possesses a small shearing strength against flowing, is known

- **Liquid limit**
- plastic limit
- shrinkage limit
- Permeability limit.

6. Dado is usually provided in

- dining halls
- **bath rooms**
- living rooms
- verandas
- roofs

7. The 9 cm x 9 cm side of a brick as seen in the wall face, is generally known as

- Stretcher
- Face
- Front
- **Header**
- Side

8. The under surface of an arch, is called

- **Soffit**
- Intrados
- Haunch
- back.

9. The process of making the back ground rough, before plastering, is

- Dubbing
- **Hacking**
- Blistering
- Peeling

10. The angular steps used for changing direction of the stairs, are called

- Round steps
- Angular steps

- **Winders**
- Radial steps
- Circular steps

11. The line of intersection of the surfaces of a sloping roof forming an external angle exceeding  $180^\circ$ , is

- Ridge
- **Hip**
- Valley
- None of these

12. A wooden block hinged on post outside a door, is known

- **Cleat**
- Stop
- Horn
- None of these

13. If 1500 g of water is required to have a cement paste 1875 g of normal consistency, the percentage of water is,

- 20%
- 25%
- 30%
- 35%
- 40%

14. For given water content, workability decreases if the concrete aggregates contain an excess of

- thin particles

- flat particles
- elongated particles
- flaky particles
- **All the above.**

15. After casting, an ordinary cement concrete on drying

- Expands
- Mix
- **Shrinks**
- None of these

16. Hydration of cement is due to chemical action of water with

- Tricalcium silicate and dicalcium silicate
- Dicalcium silicate and tricalcium aluminate
- Tricalcium aluminate and tricalcium aluminoferrite
- **All the above.**

17. Proper proportioning of concrete, ensures

- desired strength and workability
- desired durability
- water tightness of the structure
- resistance to water
- **all the above**

18. The bulk density of aggregates does not depend upon:

- size and shape of aggregates
- specific gravity of aggregates
- grading of aggregates
- **size and shape of the container**
- None of these.

19. Curing

- reduces the shrinkage of concrete
- preserves the properties of concrete
- prevents the loss of water by evaporation
- **All of the above.**

20. Pick up the correct proportions of chemical ingredients of cement

- **Lime : Silica : Alumina : Iron oxide : 63 : 22 : 6 : 3**
- Silica : Lime : Alumina : Iron oxide : 63 : 22 : 6 : 3
- Alumina : Silica : Lime : Iron oxide : 63 : 22 : 6 : 3
- Iron oxide : Alumina : Silica : Lime : 63 : 22 : 6 : 3

21. Slump test is measure of mobility ,consistency ,homogeneity, all

22. The strength and quality of concrete, depend upon:

- grading of aggregates
- surface area of aggregates
- shape of aggregates
- surface texture of aggregates
- **all the above.**

23. The process of mixing, transporting, placing and compacting concrete using Ordinary Port land Cement should not take more than

- **30 minutes**
- 40 minutes
- 60 minutes
- 75 minutes
- 90 minutes.

24. If 50 kg of fine aggregates and 100 kg of coarse agregates are mixed in a concrete whose water cement ratio is 0.6, the weight of water required for harsh mix, is

- 8 kg
- 10 kg
- **12 kg**
- 14 kg
- 15 kg

25. The bulk density of aggregates, depends upon

- Shape
- Grading
- Compaction
- **all the above.**

26. 'Ware house pack' of cement means

- full capacity of the ware house
- pressure exertion of the bags of upper layers
- **pressure compaction of the bags on lower layers**
- packing the ware house
- none of these.

27. The stereo plotting instruments are generally manufactured on the principle of

- optical projection
- optical mechanism projection
- mechanical projection
- **all the above.**

28. The relief displacement of a minar 72 m high on photograph is 7.2 mm and its top appears 10 cm away from principal point. The flying height of the camera, is

- 500 m
- **1000 m**
- 1500 m
- 2000 m.

29. Prandtl mixing length is

- applicable to laminar flow problems.
- a universal constant.
- **zero at the pipe wall.**
- none of these.

30. An inverted siphon is a

- device for distributing septic tank effluent to a soil absorption system
- device-for preventing overflow from elevated water storage tank
- device for preventing crown corrosion of sewer
- **section of sewer which is dropped below the hydraulic grade line in order to avoid an obstacle.**

31. Water emerges from an ogee spillway with velocity 13.72 m/s and depth = 3.0 m at its toe. The tail water depth required to form a hydraulic jump at the toe is

- 6.48 m
- 5.24 m
- 3.24 m
- 2.24 m

32. The specific gravity of paving bitumen as per IS:73-1992 lies between

- 1.10 and 1.06
- 1.06 and 1.02
- **1.02 and 0.97**
- 0.97 and 0.92

33. Pascal-second is unit of kinematic & dynamic velocity

34. Effective length of a rafter member between two nodes at a distance  $L$ , perpendicular to the plane of the truss, is :

- 2.00  $L$
- 0.85
- 1.50
- 1.00  $L$

35. The Prandtl mixing length for turbulent flow through pipes is

- **independent of shear stress**
- a universal constant
- zero at the pipe wall
- independent of radial distance from pipe axis

36. Lysimeter and Tensiometer are used to measure respectively, one of the following groups of quantities:

- Capillary potential and permeability
- **Evapotranspiration and capillary potential**
- Velocity in channels and vapour pressure
- Velocity in pipes and pressure head

37. A lysimeter is used to measure :

- infiltration
- evaporation
- **evapotranspiration**
- radiation



38. Presence of excess nitrates in river water indicates :

- recent pollution of water with sewage
- **past pollution of water with sewage**
- immediate pollution of water with sewage
- no pollution of water with sewage

39. At highway stretches where the required overtaking sight distance cannot be provided, it is necessary to incorporate :

- **at least twice the stopping sight distance**
- half the required overtaking sight distance
- one-third the required overtaking sight distance
- three times the stopping sight distance

40. Two footings, one circular and the other square, are founded on the surface of a purely cohesion less soil. The diameter of the circular footing is same as that of the side of the square footing. The ratio of their ultimate bearing capacities is

- 3/4
- 4/3
- 1.0
- 1.3

41. The ordinate of the Instantaneous Unit Hydrograph (IUH) of a catchment at any time  $t$ , is

- The slope of the 1-hour unit hydrograph at that time
- The slope of the direct runoff unit hydrograph at that time
- Difference in the slope of the S-curve and 1-hour unit hydrograph
- **The slope of the S-curve with effective rainfall intensity of 1 cm/hr**

42. For the determination of earth pressure, Coulomb's wedge theory assumes that:

- the back of wall is smooth and vertical
- the soil is non-homogeneous and anisotropic
- the slip surface is circular
- **the wall surface is rough**

43. The two criteria for the determination of allowable bearing capacity of a foundation are

- tensile failure and compression failure.
- tensile failure and settlement.
- bond failure and shear failure.
- **shear failure and settlement.**

44. The unit weight of a soil at zero air voids depends on :

- specific gravity
- water content
- unit weight of water
- **all the above**

45. The shape of clay particle is usually

- angular
- **flaky**
- tubular
- round

46. A test plate 30 cm x 30 cm resting on a sand deposit settles by 10 mm under a certain loading intensity. A footing 150 cm x 200 cm resting on the same sand deposit and loaded to the same load intensity settles by

- 2.0 mm
- **27.8 mm**
- 3.02 mm
- 50.0 mm

47. At critical depth in open channels

- for a given specific energy, discharge is maximum
- **for a given discharge, specific energy is maximum**
- discharge is minimum for a given specific energy
- discharge is maximum for a given specific force

48. Group symbols assigned to silty sand and clayey sand are respectively

- SS and CS
- SM and CS
- **SM and SC**
- MS and CS

49. The maximum area of compression reinforcement in a beam of cross section  $B \times D$  is limited to

- 0.02 BD
- 0.03 BD
- **0.04 BD**
- 0.05 BD

50. A doubly reinforced concrete beam has effective cover  $d'$  to the centre of compression reinforcement.  $x_u$  is the depth of neutral axis, and  $d$  is the effective depth to the centre of tension reinforcement. What is the maximum strain in concrete at the level of compression reinforcement?

- $0.0035(1 - d'/d)$
- **$0.0035(1 - d'/x_u)$**
- $0.002(1 - d'/x_u)$
- $0.002(1 - d'/d)$

51. A continuous beam shall be deemed to be a deep beam if the ratio of its effective span to overall depth, is

- 2.0
- **2.5**

- less than 2
- less than 2.5

52. Pick up the correct statement regarding columns.

The cross sectional area of longitudinal reinforcement, should not be less than 0.8% nor more than 4% of its gross sectional area

- The minimum of longitudinal bars provided in rectangular and circular columns are 4 and 6 respectively
- In helical reinforced column, the minimum number of longitudinal reinforcement should be six
- If the effective length of a column is less than three times its lateral dimension, it is generally called a pedestal
- All the above.

53. If an element of a stressed body is in a state of pure shear with a magnitude of 80 N/mm<sup>2</sup>, the magnitude of maximum principal stress at that location is

- 80 N/mm<sup>2</sup>
- 113.14 N/mm<sup>2</sup>
- 120 N/mm<sup>2</sup>
- 56.57 N/mm<sup>2</sup>

54. For quality control of Portland cement, the test essentially done is

- setting time
- soundness
- tensile strength
- consistency
- all the above

55. If the effective plan area of a warehouse is 54 sq. m, and maximum height of piles permitted is 270 cm, the number of cement bags to be stored, is

- 2000 bags
- 2200 bags
- 2400 bags

- 2700 bags
- 3000 bags

56. Cross-staff is used for

- **setting out right angles**
- measuring contour gradient
- taking levels
- measuring distances
- none of these

57. The construction of optical square is based, on the principle of optical

- reflection
- refraction
- double refraction
- **double reflection.**

58. Hydration of cement is due to chemical action of water with

- Tricalcium silicate and dicalcium silicate
- Dicalcium silicate and tricalcium aluminate
- Tricalcium aluminate and tricalcium aluminoferrite
- **All the above.**

59. The process of proper and accurate measurement of concrete ingredients for uniformity of proportion, is known

- grading
- curing
- mixing
- **batching**
- none of these.

60. Internal friction between the ingredients of concrete, is decreased by using

- less water
- fine aggregates
- rich mix
- **more water and coarse aggregates**
- none of these.

61. Water required per bag of cement, is

- 7 kg
- 14 kg
- 21 kg
- 28 kg
- **35 kg**

62. The diameter of the Vicat plunger is 10 mm and its length varies from

- 20 mm to 30 mm
- 30 mm to 40 mm
- **40 mm to 50 mm**
- 50 mm to 60 mm
- none of these

63. If aggregates completely pass through a sieve of size 75 mm and are retained on a sieve of size 60 mm, the particular aggregate will be flaky if its minimum dimension is less than

- 20.5 mm
- 30.5 mm
- **40.5 mm**
- 50.5 mm
- none of these.

(Questions 64-67 are missing)

68. The bulk density of aggregates, depends upon

- shape
- grading
- compaction
- **all the above.**

69. Pick up the incorrect statement from the following :

- **Cement is added to lime mortar to increase its hydraulic properties only**
- Lime surkhi mortar is used for pointing the walls
- Lime should be slaked before preparing lime mortar
- High early strength concrete is generally used in cold weather.

70. Pick up the incorrect statement from the following:

- The bottom and top ends of slump mould are parallel to each other
- The axis of the mould is perpendicular to the end faces
- The internal surface of the mould is kept clean and free from set cement
- **The mould is in the form of a frustum of hexagonal pyramid**
- None of these.

71. The transitional middle portion of a logistic curve follows

- a geometric growth
- a logarithmic growth
- a first over curve
- **a constant rate.**

72. SAG CORRECTION IS NEGATIVE ERROR

73. 1:2:4 IS M20 Grade

74. Portion that transmits load to soil is foundation

75. For continuous transportation of concrete pumps are used

76. The aggregate containing moisture in pores and having its surface dry, is known as

- moist aggregates
- very dry aggregates
- dry aggregates
- **saturated surface dry aggregate**
- none of these

77. Imaginary tangential line through level

78. The fuselage includes

- passengers chamber
- pilot's cabin
- tail of aircraft
- **all the above**

79. Check lines (or proof lines) in Chain Surveying, are essentially required

- to plot the chain lines
- to plot the offsets
- **to indicate the accuracy of the survey work**
- to increase the out-turn

80. Magnetic Field runs from north to south

81. Dip at equator is zero

82. Unit of force in SI is Newton

83. The flow of water (mass density =  $1000 \text{ kg/m}^3$  and kinematic viscosity =  $10^{-6} \text{ m}^2/\text{s}$ ) in a commercial pipe, having equivalent roughness  $k_s$  as  $0.12 \text{ mm}$ , yields an average shear stress at the pipe boundary =  $600 \text{ N/m}^2$ . The value of  $k_s/\delta'$  ( $\delta'$  being the thickness of laminar sub-layer) for this pipe is



- 0.25
- 0.50
- 6.0
- 8.0

84. 1:6:1 is not a usual mix

85. Deflection for STEEL member is ???? L/325??

86. Slump Is measured in MM

87. The degree of workability of concrete and its slump values are given as follows:

- Very Low 0-25 mm slump.
- Low 25-50 mm slump.
- Medium 50-100 mm slump.
- High 100-150 mm slump.

88. Controlled Concrete grades are 2 I think

89. For 1 cumic of 1:2:4 , 5 to 6 bags are required