Multiple Choice Quesitons

1. For a good building stone how much is the required crushing strength?
   a. Less than 50 N/mm^2 b. Greater than 100 N/mm^2
   c. 155 N/mm^2 d. 10 N/mm^2
2. Which of the following is a good fire-resistant stone?
   a. Clay b. Granite c. Quartz d. Limestone
3. What is a freestone?
   a. Stone free from impurities b. Stone that doesn't require dressing
   c. Metamorphic stone d. Stone free from veins and planes of cleavage
4. Why are stones with lighter shades of colour preferred?
   a. Easy to clean b. Easily available
   c. Don't spoil the appearance d. Darker shades are heavier
5. Hardness is an important parameter considered in the construction of:
   a. Slabs b. Walls c. Bridges d. Arches
6. What is the required specific gravity for a good building stone?
   a. Greater than 2.7 b. Less than 3 c. Greater than 3 d. Less than 2.7
7. The percentage absorption by weight of a good stone, after how many hours should not exceed .6?
   a. 6 hrs b. 12 hrs c. 48 hrs d. 24 hrs
8. What texture should a building stone possess?
   a. Loose grains b. Crystalline structure
   c. Cavities d. Cracks
9. Toughness index of a good stone should be more than:
   a. 17 b. 18 c. 13 d. 19
10. Stones are obtained from rocks that are made up of:
    a. Ores b. Minerals c. Chemical compounds d. Crystals
11. Which one of the following is not a classification of stones?
    a. Physical Classification b. Mineralogical Classification
    c. Chemical Classification d. Practical Classification
12. The hot molten material occurring naturally below the surface of the Earth is called:
    a. Lava b. Slag c. Magma d. Tuff
13. What is a sedimentary deposit?
    a. Weathered product remains at site b. Weathered product carried away in solution
    c. Weathered product gets carried away agents
    d. Insoluble weathered product is carried away in suspension
14. Which factor disturbs the equilibrium of rocks, commencing metamorphism?
    a. Increase in temperature b. Decrease in temperature and pressure
    c. Increase in temperature and pressure d. Decrease in pressure
15. Which of the following is not a metamorphic change?
    a. Calcite to schist b. Limestone to marble c. Shale to slate d. Granite to gneisses
16. Which of the following rocks are hard and durable?
    a. Argillaceous rocks b. Siliceous rocks c. Calcareous rocks d. Carbonaceous rocks
17. Foliated structure is very common in case of:
    a. Sedimentary rocks b. Plutonic rocks c. Igneous rocks d. Metamorphic rocks
18. Granite is a type of:
    a. Plutonic rock b. Metamorphic rock
    c. Hypabyssal rock d. Volcanic rock

19. Which of the following is a hand tool used for quarrying?
    a. Plier b. Hammer c. Quarrying wire d. XSM
20. What is used to accelerate the process of rubbing in rubbed finish dressing?
    a. Water b. Water and sand c. Clay d. Pebbles
21. How many types of dressings are there with respect to the place of work?
    a. 4 b. 3 c. 2 d. None
22. Circular finished stones are generally used for:
    a. Pillar b. Tombstone c. Landscaping d. Column
23. Quarry faced finished stones are also called:
    a. Reticulated finish b. Hammer faced finished
    c. Rock faced stones d. Plain finish
24. How many constituents are there in the brick earth?
    a. 5 b. 4 c. 6 d. 8
25. Which one of the below is the most important ingredient in the brick earth?
    a. Alumina b. Lime c. Silica d. Magnesia
26. In what form should lime be present in the brick earth?
    a. Paste b. Lump c. Clinker d. Powder
27. Which one of the below is the first step in the preparation of brick earth process?
    a. Digging b. Site selection c. Cleaning d. Unsoiling
28. Why is the process of weathering performed?
    a. To remove organic matter b. To prepare for next process
    c. To improve plasticity d. To dry clay
29. The process of kneading brick earth is called:
    a. Pugging b. Blending c. Ramming d. Tamping
30. A good brick should not absorb more than what percent of water when soaked?
    a. 15% b. 20% c. 30% d. 10%
31. Which of the following bricks is not preferred?
    a. Sharp-edged b. Clamp burned c. Sound-proofed d. Kiln burned
32. Which of the below is used to sound proof bricks?
    a. Gypsum b. Terracotta c. Plastics d. Ceramic
33. The compressive strength of the brick should be:
    a. Minimum 3.5 kN/m^2 b. Maximum 3.5 kN/m^2
    c. Minimum 3.5 N/mm^2 d. Maximum 3.5 N/mm^2
34. A good brick when dropped from the height of 1 metre can:
    a. Shatter b. Not break c. Break into 2 halves d. Develop small cracks
35. What should be observed when a brick is broken?
    a. Parallel strata b. Homogeneous surface
    c. Pores d. Brown colour
36. Which of the following ranges of dimensions of a good quality brick is correct?
    a. Length: 180-210 cm b. Width: 180-210 cm
    c. Height: 180-210 cm d. Weight: 25-30 N
37. Unburnt bricks are also called:
    a. Dry bricks b. Clayey bricks c. Kucha bricks d. Clamp bricks
38. Burnt bricks can be further classified into how many types?
    a. 2 b. 4 c. 3 d. 5
39. First class bricks are used for:
    a. Brick ballast in R.C.C b. Boundary walls
    c. Low height walls d. Pavements
40. The minimum crushing strength of third class brick is:
    a. 3.5 N/mm^2 b. 7 N/mm^2 c. 10 N/mm^2 d. 20 N/mm^2
41. Which of the following is not a feature of second class bricks?
    a. Have small irregularities b. Water absorption is between 20-25%
    c. Rectangular in shape d. Free from cracks

42. What is the speciality of FALG bricks?
    a. Are composed of agricultural waste
    b. Round in shape
    c. Economic alternative to clay bricks
    d. Widely used in masonry work
43. Which of the following bricks types use the least amount of clay?
    a. Hollow bricks b. Coping bricks c. Channel bricks d. Perforated bricks
44. Which of the following type of bricks is made for jambs of doors and windows?
    a. Cant bricks b. Arch bricks c. Lintel bricks d. Hinged bricks
45. What is the problem with using flyash bricks?
    a. Efflorescence b. Costly c. Expand d. Not sound proof
46. In absorption test on brick, how many hours it has to be soaked in cold water?
    a. 19 hours b. 5 hours c. 6 hours d. 24 hours
47. What is the loading rate used in compressive strength test?
    a. 14 N/mm^2 per hour
    b. 14 N/mm^2 per minute
    c. 20 N/mm^2 per minute
    d. 40 N/mm^2 per hour
48. How is the hardness of brick tested?
    a. Using finger nail
    b. Using hardness apparatus
    c. Using hammer
    d. Using chisel
49. What is the maximum permissible tolerance for length and width respectively?
    a. ± 3mm and ± 6mm b. ± 6mm and ± 3mm c. ± 3cm and ± 6cm d. ± 6cm and ± 3cm
50. What does M1 indicate in the formula:
    % water absorption = M2 – M1/M2 × 100
    a. Oven dried mass of brick
    b. Oven dried and cooled mass of brick
    c. Mass of water absorbed brick
    d. Mass of water absorbed and dried brick
51. Quarry tile is also called:
    a. Granite tile b. Unglazed ceramic tile c. Stone tile d. Workshop tiles
52. Which tile is the most versatile?
    a. Porcelain b. Shale c. Slate d. Granite
53. _____ is used for skirting around bathtubs and mosaics?
    a. Sandstone b. Travertine c. Granite d. Onyx
54. Drain tiles are suitable for laying in waterlogged areas because:
    a. Porous nature b. Waterproof c. Economic d. Easy installation
55. Which type of tile is suitable for air-conditioned rooms, gymnasiums and skating rinks?
    a. Wood tiles b. Cork tiles c. Ceramic tiles d. Concrete tiles
56. How many layers is the encaustic tile made up of?
    a. 2 b. 4 c. 3 d. 1
57. What type of clay is selected for tile manufacture?
    a. Slightly wet b. Sticky c. Dry d. Rich
58. Secondary crushing of small lumps of clay to particles is carried out in:
    a. Jaw crusher b. Ball mill c. Muller mill d. Gyratory crusher
59. At what point is a glaze applied to a tile?
    a. Finished tile b. Drying c. Placing d. Firing
60. What is the meaning of slip?
    a. Dry mixture
    b. Impurities in mixture
    c. Water filled mixture
    d. Different sized mixture
61. How is water content in the slip or slurry removed?
    a. Filter pressing b. Spray drying c. Sun drying d. Vacuum pressing
62. Which method of forming is used for heavily profiled tiles?
    a. Dry pressing b. Ram pressing c. Pressure glazing d. Extrusion
63. Which of the following is not a method of drying?
    a. Impulse drying b. Infrared drying c. Kiln drying d. Tunnel driers
64. Which step removes volatiles from the material during firing?
    a. Glost firing b. Single firing c. Fly firing d. Bisque firing

65. Why is natural cement used very limitedly?
    a. Brown in Colour
    b. Standard consistency is not met with
    c. Sets too quickly
    d. Particle size is too fine
66. What is the average particle size of cement?
    a. 15 microns
    b. 45 microns
    c. 75 microns
    d. 100 microns
67. Time elapsed from the instance of adding water until paste ceases to behave as fluid is called:
    a. Initial setting time
    b. Final setting time
    c. Intermediate setting time
    d. Absolute setting time
68. Which of the below mentioned is not a result of field test performed on cement?
    a. There should not be any lumps
    b. It should feel cold when you put your hand in bag of cement
    c. The colour should be blackish grey
    d. It should not be gritty when rubbed with finger
69. Which equipment is used to test the setting time of cement?
    a. Core cutter
    b. Vibrator
    c. Universal testing machine (UTM)
    d. Vicat apparatus
70. What is the initial setting time of cement?
    a. 1 hour
    b. 30 minutes
    c. 15 minutes
    d. 30 hours
71. Use of coarser cement particles leads to:
    a. Low durability
    b. Higher strength
    c. Low consistency
    d. Higher soundness
72. What is the depth the needle in Vicat apparatus should penetrate into the cement paste in consistency test?
    a. 33-35 cm from bottom of the mould
    b. 33-35 mm from top of the mould
    c. 33-35 cm from top of the mould
    d. 33-35 mm from bottom of the mould
73. What is the most dominant constituent of cement?
    a. Silica
    b. Lime
    c. Magnesia
    d. Alumina
74. Deficiency of lime in cement leads to:
    a. Unsound cement
    b. Disintegration of cement
    c. Quick setting of cement
    d. Expansion of cement
75. What effect does calcium sulphate have on cement?
    a. Retards setting action
    b. Acts as flux
    c. Imparts colour
    d. Reduces strength
76. Which of the following adds a quick-setting property to cement?
    a. Magnesium oxide
    b. Silicon dioxide
    c. Iron oxide
    d. Aluminium oxide
77. Which of the following imparts greenish grey colour to cement?
    a. Calcium silicate
    b. Calcium aluminate
    c. Calcium aluminate ferrite
    d. Calcium carbonate
78. Excess of Alkali in cement results in:
    a. Dry cement paste
    b. Efflorescence
    c. Less plasticity
    d. Unsound cement
79. What function does iron oxide perform in cement?
    a. Increases strength
    b. Makes cement sound
    c. Increases setting time
    d. Acts as flux
80. How many major ingredients are present in the composition of cement?
    a. 8
    b. 5
    c. 10
    d. 6
81. Sulphur in cement is present in what amount?
    a. 0.5 – 6 g
    b. 1 – 2.5%
    c. 0.5 – 6%
    d. 1 – 2.5g
82. How is the argillaceous material used in the manufacture of cement stored?
    a. Silos
    b. Basins
    c. Bags
    d. Storage tanks
83. What is released during the production of clinker?
    a. $CaCO_3$
    b. CO_2
    c. $Ca(OH)_2$
    d. CO
84. Which one of the below is not a feature of cement Kiln?
    a. Employs alternate fuels
    b. Natural alkaline environment
    c. High temperature
    d. Portable

85. What is the abbreviation of PPC?
    a. Perfect Portland Cement
    b. Portland Produced Cement
    c. Portland Pozzolana Cement
    d. Productive Portland Cement
86. Which of the following is not an advantage of rapid hardening cement?
    a. Faster construction
    b. Short curing period
    c. Light in weight
    d. Higher final setting time
87. How many types of cement are there based on the ability to set in presence of water?
    a. 2 b. 3 c. 4 d. 5
88. What property does air-entraining cement provide?
    a. Workability b. Soundness c. Fineness d. Strength
89. Which of the following types of cement is used in marine structures?
    a. Expanding cement
    b. High alumina cement
    c. Blast furnace slag cement
    d. White cement
90. Which pair of the compound and coloured cement mentioned below is wrong?
    a. Iron oxide-yellow
    b. Cobalt-black
    c. Chromium oxide-green
    d. Manganese dioxide-brown
91. Which of the following is not a pozzolanic material?
    a. Fly ash b. Silica fume c. Cinder d. Slag
92. Water proof cement is prepared by mixing ordinary cement with:
    a. Resins
    b. Water repellent chemicals
    c. Sulpho-aminate
    d. Metal stearates
93. What does grade 33 cement indicate?
    a. Tensile strength of 33 kN/m^2
    b. Tensile strength of 33 N/mm^2
    c. Compressive strength of 33 kN/m^2
    d. Compressive strength of 33 N/mm^2
94. Ordinary Portland cement (OPC) has been classified into how many grades?
    a. 2 b. 3 c. 10 d. 5
95. Grade 43 OPC is used widely for:
    a. High rise buildings b. Plastering c. House construction d. Finishing works
96. After how many days is the strength of cement is tested and graded according to the result?
    a. 7 days b. 28 days c. 1 day d. 14 days
97. Grade 43 OPC shall be rejected if it remains in bulk storage in the factory for:
    a. More than 3 months b. More than 1 month c. More than 6 months d. More than 4 months
98. The ratio of percentage of alumina to iron oxide in OPC 43 grade is:
    a. 3.5 b. 0.66 c. 0.1 d. 0.05
99. What is the required minimum fineness for grade 53 OPC?
    a. 370 m2/kg b. 370 cm2/g c. 580 m2/kg d. 580 cm2/g
100. Which of the following cannot be added in 33 grade OPC after burning stage?
    a. Gypsum b. Water c. Colouring Agents d. Clay
101. How much maximum percentage by mass of performance improvers can be added in grade 33 OPC?
    a. 0.5 b. 1 c. 5 d. 0.1
102. By which of the following ways is lime obtained?
    a. Naturally limestone b. Quarrying c. Burning limestone d. Crushing
103. Which of the following pairs is matched properly?
    a. Class A – Concrete work
    b. Class B – Mortar
    c. Class C – Masonry work
    d. Class D – White washing
104. Lime has been conventionally classified into how many types?
    a. 4 b. 2 c. 5 d. 3
105. Which of the following is a property of Fat Lime?
    a. Shakes very slowly
    b. Contains clay
    c. High degree of plasticityd.
    Poor binding property

106. Lime obtained from calcination of Pure Limestone is called:
a. Quick Lime b. Pure Lime c. Lean Lime d. Rich Lime
107. What is the speciality of Hydraulic Lime?
a. Contains impurities b. Does not set under water
c. Contains clay d. Perfectly white in colour
108. Which of the following slakes after few minutes?
a. Moderately Hydraulic Lime b. Eminently Hydraulic Lime
c. Perfectly Hydraulic Lime d. Feebly Hydraulic Lime
109. Which of the following ions causes the cement to set quickly?
a. Sulphate b. Carbonate c. Chloride d. Nitrate
110. Lime is widely used for:
a. Waste water treatment b. Manufacturing tiles
c. Jewellery making d. As an aggregate
111. Which of the following methods yields quick, small supplies of Quick Lime?
a. Intermittent kiln b. Continuous kiln c. Clamp burning d. Kankar burning
112. How is the arrangement in a clamp, if the fuel used is coal?
a. Stacked in alternate layers b. Placed on a platform
c. Mixed and poured into a basin d. Heaped
113. How can one understand the completion of the burning of lime?
a. Blue flame at the top disappears b. Blue flame appears at the top
c. Smoke is released in huge quantity d. Red flame appears at the top
114. In which feed type kiln, limestone does not come in contact with fuel?
a. Single feed b. Isolated feed c. Separate feed d. Mixed feed
115. Which one of the following is an advantage of Kiln burning over clamp burning?
a. Burning is not complete b. Requires more fuel
c. No wastage of lime d. Time effective
116. How many brick lined tanks are used in tank slaking method?
a. 2 b. 1 c. 4 d. 3
117. In tank slaking, the second tank (60-75cm deep) is filled with:
a. Water b. Lime-milk c. Lime d. Limestone
118. The quantity of water to be added for hydrating 100kg of lime is:
a. 10 litres b. 1 litre c. 15 litres d. 32 litres
119. Rate of hydration (slaking) does not depend on:
a. Degree of burning of lime b. Degree of agitation
c. Atmospheric conditions d. Composition of lime
120. What is the life time of a moderately durable timber?
a. 10-20 years b. 1-5 years c. 10-15 years d. 5-10 years
121. Which of the following is an example of soft wood?
a. Sal b. Oak c. Deodar d. Mahogany
122. Which of the following is a type of non-refractory timber?
a. Semul b. Teak c. Sheesham d. Sal
123. Which of the below type of timber has Young's Modulus greater than 9800 N/mm^2, and less than 12600 N/mm^2?
a. Average timber b. Very good timber c. Good timber d. Light timber
124. What is the density of a light timber?
a. 5.5 kN/m^3 b. Less than 2.5 kN/m^3 c. 2.5 kN/m^3 d. Less than 5.5 kN/m^3
125. Which of the below is a property of soft wood?
a. Medullary rays are less distinct b. Annual rings are less distinct
c. Dark in colour d. Close grained structure
126. The surface of freshly cut timber should be:
a. Soft and shining b. Hard and shining c. Perfectly round d. Light in colour

127. The quality of timber does not depend upon:
a. Maturity of tree b. Time of felling c. Type of tree d. Size of tree
128. Where is the property of shock resistance an important parameter?
a. Furniture b. Utensils c. Tool handles d. Doors
129. Timbers with _____ annular rings are generally the strongest.
a. Narrow b. Wide c. Distinct d. Indistinct
130. How can the quality of timber be checked via sound?
a. Timber struck by hammer b. Timber tapped by hand
c. Timber knocked by chisel d. Two timber pieces struck together
131. What should be the colour of good quality timber?
a. Light b. Gradient c. Dark d. Brown
132. Which of the below is true about good timber?
a. Elastic b. Round fibres c. Less cost d. Less density
133. The water permeability of timber is greater:
a. Along centre b. Along Fibres c. Along annual rings d. Along bark
134. Seasoning of timber is the process of:
a. Burning timber b. Adding preservatives c. Removing water d. Adding glaze
135. Which of the below changes do not occur after seasoning?
a. Increase durability b. Decrease stiffness c. Workable timber d. Reduction in weight
136. How much time does natural seasoning takes for timber to be properly seasoned?
a. 1-4 years b. 6-12 months c. 5-10 months d. 5-7 years
137. Which of the below is a disadvantage of air seasoning?
a. Power requirement b. Skilled supervision
c. Elaborate equipment d. Uniformity of seasoning
138. How many methods of artificial seasoning are there?
a. 3 b. 4 c. 5 d. 8
139. Which method leaves the timber brittle after seasoning?
a. Water seasoning b. Kiln seasoning c. Electric seasoning d. Boiling
140. Which of the below chemicals is not used in chemical seasoning?
a. Sodium chloride b. Urea c. Sodium hypochlorite d. Sodium nitrate
141. Which is the most rapid and effective method of seasoning?
a. Chemical seasoning b. Electric seasoning
c. Kiln seasoning d. Natural seasoning
142. For how long is timber boiled in water in the seasoning method of boiling?
a. 3-4 hours b. 1-2 hours c. 5-6 hours d. 10-12 hours
143. Which of the below is a natural defect occurring in timber?
a. Twist b. Split c. Shakes d. Bow
144. How many types of shakes are there?
a. 3 b. 2 c. 6 d. 5
145. _____ defects is indicated by red/yellow tinge in wood.
a. Froxiness b. Druxiness c. Callus d. Burls
146. A crack which separates wood fibres is called:
a. Warp b. Check c. Collapse d. Split
147. Diagonal grain is a defect formed due to improper:
a. Sawing b. Felling c. Seasoning d. Handling
148. Which of the following is not a cause of the decay of timber?
a. Lack of ventilation b. Alternate dry and wet conditions
c. Absence of moisture d. Moisture accompanied by heat
149. What causes dry rot in timber?
a. Bacteria b. Beetle c. White ants d. Fungus
150. Ascue is a:
a. Defect by insects b. Preservative c. Natural defect d. Type of marine borer

151. Which of the following makes the timber look sound but might fail it without pre-warning?
a. Marine borers b. Wasps c. White ants d. Beetles
152. The defect indicated by curvature formed in a transverse direction is:
a. Bow b. Spring c. Twist d. Cup
153. The felling of the tree is usually carried out in:
a. Winter b. Summer c. Rainy season d. Spring
154. The thickness of veneers varies from:
a. 0.4-0.6 cm b. 0.1-0.4 cm c. 0.1-0.4 mm d. 0.4-0.6 mm
155. Debarking is done so as to:
a. Safeguard saws b. Improve seasoning
c. Expose surface of wood d. Reduce weight
156. How many types of rough sawing are there?
a. 4 b. 5 c. 2 d. 3
157. Before peeling in the production of plywood, what has to be carried out?
a. Conditioning b. Seasoning c. Debarking d. Sorting
158. What is a vehicle in paint used for?
a. To obscure surface b. To adhere to surface
c. To provide shine to surface d. To reduce crack on surface
159. The base in a paint does not serve the function of:
a. Durability b. Hard and elastic
c. Protection against UV rays d. Catalyst
160. Which of the below is the most commonly used base?
a. Red lead b. Zinc white c. White lead d. Oxide of iron
161. How does drier act as a catalyst?
a. Releasing oxygen b. Releasing water c. Absorbing oxygen d. Absorbing water
162. When should drier be added to the paint?
a. 12 hours before paint is used b. Immediately after opening it
c. 1 hour before paint is used d. When paint is ready to use
163. _____ base is generally used for priming coat to new wood work?
a. Antimony white b. Titanium dioxide
c. Aluminium powder d. Red lead
164. In how many layers is oil paint applied to a surface?
a. 3 b. 4 c. 2 d. 1
165. Emulsion Paints contain:
a. Nitro cotton b. Zinc white c. White lead d. Polyvinyl acetate
166. Anticorrosive paint is _____ in colour
a. Blue b. White c. Black d. Yellow
167. In which of the below, it is not necessary to remove existing paint to apply a new one?
a. Aluminium paints b. Cement paints c. Oil paints d. Enamel paints
168. Synthetic rubber paints are prepared from:
a. Resin b. Rubber c. Synthetic fibres d. Polyvinyl Chloride
169. What is used to make paints odourless to an extent?
a. Flat latex b. Celluloid sheets c. Acrylic compound d. Plioway resins
170. Which of the below has a sheen and is highly washable?
a. Acrylic flat b. Acrylic eggshell c. Acrylic satin d. Acrylic gloss
171. How many ingredients are varnish composed of?
a. 2 b. 3 c. 4 d. 5
172. Which of the below is not an artificial resin?
a. Vinyl b. Alkyl c. Phenolic d. Shellac
173. Driers in varnish are used as:
a. Reducers b. Retarders c. Accelerators d. Oxidisers

174. Wood naphtha, a cheap variety of resin, is also called:
a. Methyl alcohol b. Synthetic rubber c. Acetylene d. Ethanol
175. Which of the below is an oil based varnish?
a. Urethane b. Acrylic c. Polyurethane d. Urea
176. _____ Varnish is also called French varnish and used for furniture.
a. Oil b. Water c. Acrylic d. Spirit
177. What is the loading rate used in compressive strength test?
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178. How is the hardness of brick tested?
a. Using finger nail b. Using hardness apparatus
c. Using hammer d. Using chisel
179. What should be observed ideally when two bricks are struck together?
a. Dull sound b. Sides shatter
c. Clear ringing sound d. Brick breaks
180. When observed efflorescence is more than 10% but less than 50% of the exposed area, it is:
a. Moderate efflorescence b. Serious efflorescence
c. Heavy efflorescence d. Light efflorescence
181. How is the structure of brick tested?
a. Powdered and tested b. Immersed in water and dried.
c. Rubbed against another brick d. Broken and examined
182. Which of the following is not a feature of second class bricks?
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a. 370 m^2/kg b. 370 cm2/g c. 580 m^2/kg d. 580 cm^2/g
194. How many types of cement are there based on the ability to set in presence of water?
a. 2 b. 3 c. 4 d. 5

195. Fine Aggregates should pass through which IS sieve?
a. 2.35mm b. 45μ c. 4.75mm d. 75μ
196. How many types of fine aggregates are there based on source?
a. 3 b. 2 c. 4 d. 6
197. The specific gravity for sand is:
a. 2.6 b. 2.65 c. 2.8 d. 2.75
198. M-Sand has _____ type of particle shape.
a. Flaky b. Round c. Angular d. Cubical
199. Which of the below can be used as fine aggregates?
a. Lime b. Splinters c. Surkhi d. Rice Husk
200. Graded aggregate contains particles of size:
a. Single grade b. 4.75mm c. Multi grade d. <80mm
201. Flaky particles have:
a. Small thickness b. Elongated sides c. Sharp edges d. Rounded edges
202. Which size coarse aggregate is ideal for use in a concrete mix?
a. Smaller b. 4.75-10mm c. Larger d. 10-20mm
203. In crushing test on coarse aggregates, what size particle is taken as a sample?
a. Passing 12.5mm IS sieve b. Retained on 10mm IS sieve
c. Passing 10mm and retained on 4.75mm IS sieve d. Passing 12.5mm and retained on 10mm IS sieve
204. Gravel is a type of:
a. Rounded aggregate b. Angular aggregate
c. Flaky aggregate d. Irregular aggregate
205. The sieve sets for coarse aggregate ranges from:
a. 40-4.75mm b. 20-4.75mm c. 80-4.75mm d. 100-4.75mm
206. The aggregate sample for the sieve analysis is placed on:
a. Largest sieve b. Smallest sieve c. 40mm IS sieve d. 4.75mm IS sieve
207. What is a receiver in a sieve analyzer?
a. Round pan on top b. First sieve c. Last sieve d. Round pan at base
208. In how many ways can sieve analysis be carried out?
a. 5 b. 2 c. 3 d. 4
209. Under what circumstance is a wet sieve analysis carried out?
a. Sample is washed b. Moisture content is high in sample
c. Sample contains organic matter d. Very fine powdered sample
210. Which of the below is a limitation of performing sieve analysis?
a. Time consuming b. Costly c. Particle shape d. Particle size
211. A narrow gradation is also called:
a. Gap gradation b. Uniform gradation c. Rich gradation d. Open gradation
212. For how long is the mechanical vibrator shaked?
a. 15-20 minutes b. 5 minutes c. 10-15 minutes d. 30 minutes
213. For fine aggregates that is, sample passing through 4.75mm IS sieve, how much sample should be taken?
a. 5 kg b. 1 kg c. 2 kg d. 5 kg
214. The carbon content of steel is:
a. Less than 0.15% b. 2% – 4% c. 0.08% d. 0.002% – 2.1%
215. When carbon contents less than 0.1%, steel is called:
a. Mild steel b. Medium carbon steel c. Dead steel d. Hard steel
216. Very low carbon steel is used for:
a. Wires b. Wire nails c. Screw drivers d. Rods
217. What property does steel impart to an R.C.C. structure?
a. Compression and tension b. Tension
c. Shear d. Compression

218. What is the full form of TMT bars?
    a. Thermo Modified Treated
    b. Thermo Mechanically Treated
    c. Thermal Mechanic Twisted
    d. Thermo Mechanically Twisted
219. Corrugated sheets are also referred to as:
    a. CS Sheets b. CI Sheets c. GC Sheets d. GI Sheets
220. Flat iron bars are used generally for:
    a. R.C.C b. Grill work c. Roofing d. Truss
221. Which of the below is not a disadvantage of using ribbed-tor steel bars?
    a. High labour charge
    b. Not easily identifiable
    c. Weaker than plain round steel
    d. Arc welding is not possible
222. Steel plates are rarely used for:
    a. Connecting steel beams for extension
    b. Serving as tension members in the truss
    c. Forming built up sections of steel
    d. Providing support in R.C.C structures
223. Tar is no longer used as a binder in pavements because of its _____
    a. Durability
    b. Viscosity
    c. Temperature susceptibility
    d. color change
224. Which of the below is not a type of bitumen used in the construction of flexible pavements?
    a. Oxidized bitumen b. Cut-back bitumen c. Modified bitumen d. Bitumen emulsion
225. Bitumen is classified as hard and thin based on _____
    a. Application b. Source c. Viscosity d. Strength
226. What does PMB stand for?
    a. Polymer Modified Bitumen
    b. Polymer Mix Bitumen
    c. Penetration Modified Bitumen
    d. Penetration Mix Bitumen
227. The grades of bitumen used for non-road applications are called as _____ grade bitumen.
    a. Market b. Industrial c. Oxidation d. Commercial
228. Which of the below options represent the types of cut-back bitumen?
    a. Rapid, medium and slow setting
    b. Rapid and slow setting
    c. Rapid, medium and slow curing
    d. Rapid and slow curing
229. What does an 80/100 grade bitumen indicate?
    a. Viscosity b. Temperature c. Penetration d. Proportion
230. _____ is a mixture containing bitumen and sand.
    a. Binder b. Asphalt c. Tar d. Filler
231. For how long is the needle allowed to penetrate in the penetration test?
    a. 5 seconds b. 5 minutes c. 10 seconds d. 10 minutes
232. Ductility of bitumen is measured in terms of _____
    a. Time b. Distance c. Temperature d. Colour
233. At what rate is the temperature applied during the softening point test?
    a. 5° per minute b. 5° per hour c. 6° per minute d. 6° per hour
234. The spot test is used to determine if bitumen is _____ or not.
    a. Cracked b. Soluble c. Strong d. Deformed
235. Solubility test in bitumen is used to determine _____ of bitumen.
    a. Contamination b. Solubility c. Dispersion d. Composition
236. What is the speciality of an open-graded bituminous mix?
    a. Binder is missing
    b. Binder and filler are missing
    c. Fine aggregate is missing
    d. Coarse aggregate is missing
237. The ratio of the total floor area inclusive of all the floors to the area of the plot on which building stands is known as _____
    a. Groundage b. Plot area c. Floor area d. Built-up area
238. _____ is used to indicate the architectural effect produced by elevation in relation to width, height position of doors and windows, materials employed in the construction of external walls, etc.
    a. Furniture requirements
    b. Elegance
    c. Roominess
    d. Grouping

239. One of the important requirements of good planning is _____
    a. Privacy
    b. Furniture requirements
    c. Prospect
    d. Roominess
240. As a principle of planning, the term _____ is used to mean architectural hygiene.
    a. Sanitation
    b. Drainage
    c. Water supply
    d. Waste water
241. Due to improper ventilation, which gas gets stuck into house and develops dizziness to the occupants.
    a. Oxygen
    b. Nitrogen
    c. Carbon dioxide
    d. Hydrogen
242. _____ in a building means the free passage of clean air in a building.
    a. Habitation
    b. Protection
    c. Sanitation
    d. Ventilation
243. The termite, which are responsible for the destruction of wooden materials, are popularly known as _____
    a. Red ants
    b. White ants
    c. Black ants
    d. Big ants
244. The science which deals with the sound insulation in a building is known as _____
    a. Reverberation
    b. Transmission
    c. Acoustic
    d. Air borne
245. Fire extinguisher extinguishes the small fires in the house bye using _____
    a. Carbon dioxide
    b. Nitrogen gas
    c. Water
    d. Foam
246. The foundation in which the loading on the soil remains practically the same after the construction of the building is known as _____
    a. Step foundation
    b. Grillage foundation
    c. Raft foundation
    d. Inverted arch foundation
247. When the ground is sloping _____ foundations are used to correct the levels of the sloping ground on which the building is to be constructed.
    a. Shallow foundation
    b. Combined foundation
    c. Cantilever foundation
    d. Steeped foundation
248. Which type of foundation is used for the construction of building on black cotton soil?
    a. Inverted arch foundation
    b. Floating foundation
    c. Mat foundation
    d. Grillage foundation
249. _____ is applied to the process of laying down certain lines and marks on the ground before the excavation of foundation trenches.
    a. Ground tracing
    b. Surveying
    c. Dumpy level
    d. Digging
250. If the foundation of the structure is to be divided into two or more independent units _____ are provided to take care of unequal settlement.
    a. Construction joints
    b. Mechanical joints
    c. Slip joints
    d. Connecting joints
251. A common footing provided for two or more columns is known as _____
    a. Continues footing
    b. Combined footing
    c. Cantilever footing
    d. Eccentric footing
252. The part of the building above the ground level and up to the floor level immediately above the ground is known as _____
    a. Plinth area
    b. Formation level
    c. Ground level
    d. Plinth
253. What should be the average height of plinth?
    a. 300-500 m
    b. 1-2 m
    c. 300-450 mm
    d. 50-100 mm
254. The _____ provides support to the occupants, furniture, fixtures and equipment of a building.
    a. Plinth
    b. Ramp
    c. Floor
    d. Lifts
255. In order to secure superstructure from an earthquake _____ technique is most preferred and used worldwide.
    a. Reinforcement
    b. Base Isolation
    c. Energy Dissipation
    d. Seismic Dampers

256. _____ wall is constructed in order to support load other than its own.
a. Load supporting b. Load distributing c. Load bearing d. Load releasing

257. _____ is special material used to make sure that no moisture leaks in those areas of a roof that are particularly vulnerable to penetration.
a. Dampers b. Flashing c. Ceramic d. Wax

258. The maximum differential settlement should not exceed _____ mm in case of foundation on sandy soil.
a. 100 b. 40 c. 50 d. 25

259. The maximum differential settlement should not exceed _____ mm in case of foundation on clayey soil.
a. 40 b. 25 c. 100 d. 50

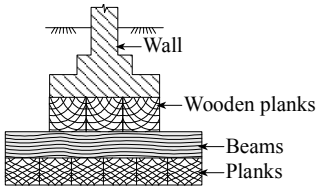
260. The maximum safe bearing capacity of hard rocks with defects and lamination such as granite, diorite and trap is _____ kN/m^2.
a. 1650 b. 3300 c. 250 d. 100

261. The maximum safe bearing capacity of very soft, wet, pasty or muddy clay is _____ kN/m^2.
a. 150 b. 100 c. 50 d. 25

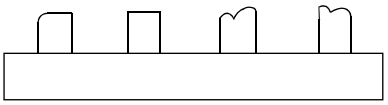
262. _____ foundation is provided for heavily loaded Timber column or masonry wall.
a. Steel grillage b. Timber grillage c. Raft d. Inverted arch

263. In the case of waterlogged area, the loading on the soil is limited to _____ KN/m^2.
a. 10-20 b. 160-200 c. 600-800 d. 50-60

264. Identify the given foundation below.
a. Timber grillage foundation
b. Steel grillage foundation
c. Raft foundation
d. Inverted arch foundation

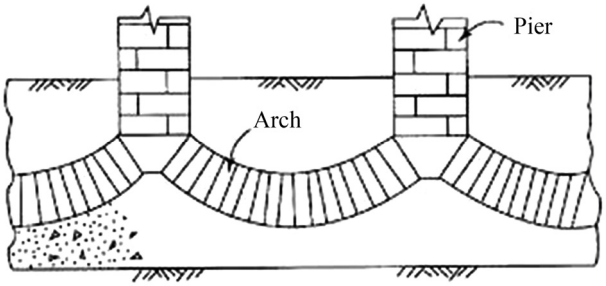


265. Identify the given Special foundation below.
a. Grillage Foundation
b. Mat foundation
c. Inverted arch foundation
d. Raft foundation



266. _____ consist of constructing the inverted arches between the piers.
a. Grillage foundation b. Raft foundation
c. Inverted arch foundationd. Combine foundation

267. Identify the special Foundation given below.



a. Grillage foundation b. Raft foundation
c. Inverted arch foundationd. Stepped foundation

268. The term _____ is used to indicate the art of building the structures in stones.
a. Masonry b. Mortar c. Brick d. Bond
269. _____ is an igneous rock used for rubble masonry, road metal, foundation work, etc.
a. Basalt b. Granite c. Laterite d. Kankar
270. _____ is a metamorphic rock which is used in street paving, rough stone masonry work, etc.
a. Granite b. Gneiss c. Marble d. Sandstone
271. _____ is a pure white limestone and which is soft and easy to form powder.
a. Chalk b. Sandstone c. Murum d. Slate
272. _____ is an Igneous rock with compressive strength varies from 75 to 127 Newton per mm square and its weight is about 26 to 27 kN per metre cube.
a. Basalt b. Granite c. Marble d. Slate
273. _____ is an impure limestone.
a. Sandstone b. Slate c. Laterite d. Karkar
274. _____ is a metamorphic rock with compressive strength varies from 1.8 to 3.1 Newton per mm square.
a. Gneiss b. Chalk c. Murum d. Laterite
275. _____ consist of carbonate of lime with specific gravity varies from 2 to 2.75 and compressive strength is 54 Newton per mm square.
a. Sandstone b. Marble c. Limestone d. Slate
276. _____ is a metamorphic rock with specific gravity about 2.65 and compressive strength is 71 Newton per mm square.
a. Marble b. Quartz c. Laterite d. Slate
277. _____ is a decomposed laterite which is deep brown or red in colour.
a. Quartzite b. Murum c. Slate d. Sandstone
278. _____ is a metamorphic rock which is hard, brother, crystalline and compact in nature.
a. Quartzite b. Sandstone c. Slate d. Kankar
279. A _____ is a mark of depth about 10 mm to 20 mm which is placed on the face of a brick to form a key for holding the mortar.
a. Tooting b. Cownose c. Frog d. Bullnose
280. The termination of a wall in such a fashion that each alternate course at the end projects is known as the _____
a. Racking back b. Tooting c. Frog d. Lap
281. The vertical joints separating the bricks in either length or cross direction is known as the _____
a. Perpends b. Closer c. Bed d. Arrises
282. In _____ type of bond, all the bricks are arranged in the stretcher courses.
a. English bond b. Header bond c. Stretcher bond d. Flemish bond
283. In _____ type of bond, all the bricks are arranged in header courses.
a. Header bond b. Flemish bond c. Dutc h bond d. Facing bond
284. a_____ bond is considered as the strongest Bond in brick work.
a. English bond b. Raking bond c. Garden-wall bond d. Dutch bond
285. In _____ type of bond, the headers are distributed evenly.
a. Stretcher bond b. Flemish bond c. Header bond d. English bond
286. In the _____ bond, one header course is provided after three or five stretcher courses.
a. English cross bond b. Facing bond c. Raking bond d. Garden-wall bond

287. The _____ bonds are used when was become weak in the longitudinal direction due to filling of thicker wall in the headers only.
a. Dutch bond b. Facing bond c. Raking bond d. English cross bond

288. a_____ is a modified form of English bond and by this bond, the corner of the walls is strengthened.
a. Dutch bond b. Brick-on-edge bond c. Facing bond d. Flemish bond

289. In _____ type of bond, the bricks are laid on edge instead of bed.
a. English cross bond b. Brick on-edge bond c. Raking bond d. Dutch bond

290. _____ is another modified form of the English bond and it is used to add beauty in the appearance on the wall.
a. Brick-on-edge b. Facing bond c. Garden wall bond d. English cross bond

291. In _____ type of bond, a header course place after several Stretcher courses.
a. Header bond b. Stretcher bond c. Flemish bond d. Facing bond

292. According to the recommendations laid by the Concrete Association of India, what should be the least strength of the blocks used in concrete masonry?
a. 3 N/mm2 b. 4 N/mm2 c. 2 N/mm2 d. 5 N/mm2

293. While manufacturing the concrete masonry bricks, the cement-aggregate ratio should not be thinner than _____
a. 1:6 b. 1:3 c. 3:4 d. 1:4

294. Which of the following surface finishes is used for decorative works?
a. Slumped finish b. Colored finish c. Specially faced finish d. Glazed finish

295. In concrete masonry, hollow concrete units are used for _____ walls.
a. Either load-bearing or non-load bearing b. Only load-bearing
c. Only non-load bearing d. Neither load-bearing nor non-load bearing

296. The cores in the blocks used in concrete masonry should be _____ shaped.
a. Oval b. Square c. Triangular d. Circular

297. Reinforced brickwork is used in which of the following circumstances?
a. When the brick wall is to carry light loads
b. When the brickwork has to bear some shear stress
c. When it is needed to decrease the longitudinal bond
d. When the brickwork does not have to bear any shear stress

298. In horizontal reinforcement, how many strips of hoop iron are used for one header brick?
a. One b. Two c. Three d. Four

299. Which of the following is used to embed the reinforcement?
a. Lime mortar b. Cement concrete c. Dense cement mortar d. Slaked lime

300. Corrosion of the reinforcement results in _____
a. Expansion of joints b. Contraction of joints c. Shrinkage d. Tightening of joints

301. The temporary framework is known as _____ and it is useful in construction demolition, maintenance or repair works.
a. Underpinning b. Shoring c. Scaffolding d. Grouting

302. A_____ is stronger than the single scaffolding and it is used in the construction of stone work.
a. Trestle scaffolding b. Steel scaffolding c. Patented scaffolding d. Double scaffolding

303. _____ type of scaffolding is used when the proper hard ground is not available for the standards to rest.
a. Steel scaffolding b. Trestle scaffolding
c. Bricklayers scaffolding d. Cantilever scaffolding

304. _____ type of scaffolding, the working platform is supported on movable contrivances such as Ladders, tripods, etc., mounted on wheels.
a. Trestle scaffolding b. Cantilever scaffolding
c. Mason's scaffolding d. Bricklayers scaffolding

305. _____ is a Board placed parallel to the Ledgers and supported between the Putlogs.
a. Toe board b. Guard rail c. Raker d. Bolts

306. Sometimes the structures are to be temporarily supported. This is achieved by what is known as the _____
a. Scaffolding b. Shoring c. Underpinning d. Grouting

307. In _____ shore arrangement, the inclined supports are given to the external walls from the ground.
a. Raking shore b. Flying shore c. Dead shore d. Patented shore

308. The placing of new Foundation below and the existing foundation of the process of strengthening the existing Foundation is known as the _____ of foundation.
a. Shoring b. Underpinning c. Grouting d. Scaffolding

309. In _____ method of underpinning, the existing wall is divided into suitable sections of width about 1.20 metre to 1.50 metre.
a. Pit Method b. Pile Method c. Miscellaneous Method d. Chemical Method

310. In _____ method, the underpinning is carried out by vibrating the sand.
a. Cement grouting b. Vibroflotation
c. Chemical consolidation d. Freezing

311. When one building is higher than the other _____ may be provided on the horizontal shores.
a. Raking shore b. Pile Underpinning c. Flying shore d. Pit Underpinning

312. A large factor of safety should be adopted in the design of _____ as it is difficult to assess the actual loads.
a. Vertical shores b. Pit method c. Horizontal shore d. Pile method

313. In order to prevent the entry of damp into a building, the course are provided are known as the _____ course.
a. Termites proofing b. Water proofing c. Corrosion proofing d. Damp proofing

314. Due to _____ the dampness finds its way to the floors through the substructure.
a. Action of rain b. Exposed tops of walls
c. Raising of moisture from ground d. Condensation

315. Due to _____ the external faces of wall become the sources of entry of dampness in a structure.
a. Exposed tops of walls b. Miscellaneous causes
c. Action of rain d. Condensation

316. _____ is a flexible material and it is easy to lay & is available in rolls of normal wall width.
a. Hot bitumen b. Metal sheets c. Mastic asphalt d. Bituminous felts

317. _____ is a semi-rigid material and it forms an excellent impervious layer of damp proofing.
a. Hot bitumen b. Mastic asphalt c. Bituminous felts d. Metal sheets

318. _____ is a flexible material and is placed on the bedding of concrete or mortar.
a. Mastic asphalt b. Hot bitumen c. Bituminous felts d. Metal sheets

319. The _____ of lead, Copper and Aluminium can be used as the membrane of damp proofing.
a. Metal sheets b. Bituminous felts c. Mastic asphalt d. Hot bitumen

320. _____ material is made of black polythene having a thickness of about. 50 mm to 1 mm.
a. Brick b. Stone c. Plastic sheet d. Cement concrete

321. A _____ layer is in proportion 1:2:4 is generally provided at the plinth level to work as a damp proofing course.
a. Mortar b. Cement concrete c. Stone d. Brick

322. _____ absorbing water less than 4.50% of their weight can be used for Damp proofing.
a. Bricks b. Mortar c. Stones d. Cement concrete

323. Sometimes, the _____ can be fixed as in case of roof surfaces, on the exposed face of the wall, etc.
a. Mortar b. Plastic sheet c. Felts d. Stones

324. The term _____ includes such forms of construction which have to resist is due to loads coming up on them.
a. Carpenter b. Joinery c. Carpentry d. Joints

325. The term _____ is used to indicate the art of preparing internal fittings and finishing of timber.
a. Joints b. Joinery c. Carpenter d. Carpentry

326. _____ is a semi-circular projection which is formed on the edges of surfaces of wood.
a. Chamfering b. Bead c. Batten d. Groove

327. _____ term is used to indicate the taking off the edge of corner or arris of a wooden piece.
a. Groove b. Studding c. Planning d. Chamfering

328. _____ is a term which is used to indicate a recess formed in a piece of timber.
a. Groove b. Veneering c. Sawing d. Nosing

329. _____ are wooden blocks which are fixed previously to a wall to act as additional support for wide architrave, ornamental moulds, etc.
a. Housing b. Grounds c. Scribing d. Moulding

330. . _____ is a term which is used to indicate the sinking of edge of one piece of timber into another.
a. Mitring b. Scribing c. Housing d. Nosing

331. _____ is a term which is used to indicate the process of formation of moulded sections.
a. Nosing b. Moulding c. Planning d. Sawing

332. The edge of portion overhanging a vertical surface is known as the _____
a. Rebating b. Studding c. Veneering d. Nosing

333. _____ is a term which is used to indicate the covering of entire or part of the exposed surface of timber by means of Veneers.
a. Rebating b. Studding c. Wainscot d. Veneering

334. _____ indicates the lining of panelling of wood on the lower part of masonry walls say for height of about 600 mm from the floor level.
a. Rebating b. Wainscot c. Studding d. Planing

335. Which of the following is not a marking tool?
a. Chisel b. Bevel c. Square d. Scribing knife

336. Which of the following is not a cutting tool?
a. Compass saw b. Firmer chisel c. Plier d. Coping saw

337. Which of the following cutting tools is used for cutting wood?
a. Coping saw b. Cross-cut saw c. Compass saw d. Tenon saw

338. Dovetail saw is used to cut _____
a. Timber b. Wood c. Hardwood d. Plywood

339. _____ is used for sharpening various tools.
a. Claw hammer b. Oil stone c. Pincer d. Ratchet brace

340. Cut nails are _____ in section.
a. Rectangular b. Square c. Trapezoidal d. Circular

341. The exposed term surfaces of floors are termed as the _____
a. Roofs b. Floors c. Flooring d. Roofing

342. _____ floors consists of single joist which are placed below the floor boards.
a. Single joint timber floor b. Single joist timber floor
c. Single timber floor d. Joist Floor

343. In _____ floors, intermediate supports, known as the girders, provided for the binders.
a. Single Joist timber floor b. Double joists timber floor
c. Triple Joist timber floor d. Tetra Joist timber floor

344. In _____ floors, the small sections of rolled Steel joists are placed in concrete.
a. Jack arch floors b. RCC floor c. Rib floor d. Filler joists

345. With the development of _____ construction technique, it is possible to prepare the precast unit for the floor.
a. Pre cast b. On site c. Factory made d. In situ

346. Formerly, the _____ flooring was not favourite because of bad smell and ugly colour of the Asphalt.
a. Asphalt b. Brick c. Concrete d. Cork

347. _____ material is used for cheap construction and for places where heavy articles are to be stacked as in case of godowns, Sheds, stores, etc.
a. Concrete b. Cork c. Brick d. Rubber

348. _____ flooring is available in two forms, namely, tiles and carpet.
a. Marble b. Plastic c. Rubble d. Cork

349. _____ flooring material is used when it is desired to transmit light to the floor below or to admit light to the basement from the upper floor.
a. Linoleum b. Magnesite c. Glass d. Marble

350. _____ flooring is known as the composition flooring or jointless flooring.
a. Moorum b. Rubber c. Magnesite d. Stone

351. The _____ is the cheapest flooring material and can be only adopted for ground floor.
a. Rubber b. Plastic c. Stone d. Moorum

352. _____ flooring is just similar to Moorum flooring except that mud is used in place of Moorum.
a. Mud b. Moorum c. Stone d. Plastic

353. _____ flooring material called polyvinyl Chloride and it is fabricated in the form of tiles, all different sizes and various colours shades.
a. Rubble b. Plastic c. Rubber d. Stone

354. . The flooring of _____ material consists of square or rectangular slab of stones.
a. Stone b. Marble c. Glass d. Cork

355. A _____ is defined at the upper most part of the building which is constructed in the form of a framework to give protection to the building against rain, heat, snow, wind, etc.
a. Roof b. Truss c. Chajja d. Lintels

356. When two roof surface meet together and form an internal angle, a _____ is formed.
a. Rafter b. ValleyBarge c. Gable d. Pitch

357. _____ are the inclined members of a Truss.
a. Principle rafters b. Cleats c. Dragon beam d. Gable

358. A wooden piece provided at the Ridge line of a sloping roof is known as the _____
a. Truss b. Verge c. Ridge d. Wall plate

359. The Framework, usually of triangles and design to support the roof covering for ceiling over rooms is known as a _____
a. Roof truss b. Roof valley c. Roof covering d. Template

360. Any rafter which is shorter than a common rafter is known as a _____
a. Principle rafters b. Jack Rafter c. Hip rafters d. Common rafters

361. The wooden piece which are placed horizontally on the principal rafter to carry the common rafter are known as _____
a. Pitch b. Purlins c. Eaves d. Gable
362. The triangular upper part of a wall formed at the end of pitched roof is known as a _____
a. Hip b. Eaves c. Cleats d. Gable
363. _____ are the strips of wood which are fixed on the rafter or ceiling.
a. Barge boards b. Battens c. Wall plates d. Eaves
364. _____ are the pieces of timber which extends from the eves to the ridge.
a. Battens b. Purlins c. Eaves d. Rafters
365. The term _____ is used to describe the thin plastic covering that is applied on the surface of walls and ceilings.
a. Plastering b. Pointing c. Grunting d. Grouting
366. The _____ consists of an equal volume of lime and sand, and these two materials are carefully ground in a mortar mill.
a. Lime Mortar b. Cement Mortar c. Water proof mortar d. Special mortar
367. The plan expanded _____ is most commonly used and it is under patent names are available in the market.
a. Wooden lath b. Metal lath c. Latex lath d. Rubber lath
368. The _____ are not useful for fire resistant construction.
a. Rubber laths b. Latex laths c. Wooden laths d. Metal laths
369. _____ is the Plastering defect which is particularly seen in case of plastered surfaces inside the building.
a. Softness b. Cracks c. Peeling d. Blistering
370. The development of fine hair cracks is known as _____
a. Popping b. Crazing c. Flaking d. Efflorescence
371. The formation of very small lose mass on the Plastered surface is known as the _____
a. Peeling b. Flaking c. Popping d. Uneven surface
372. The Plaster from some portion of the surface comes off and forming a patch is due to _____
a. Popping b. Flaking c. Peeling d. Softness
373. A conical hole in plastered surface is formed due to _____
a. Popping b. Rust stains c. Softness d. Uneven surface
374. The excessive dampness at certain points on the Plastered surface due to _____
a. Uneven surface b. Softness c. Rust stains d. Popping
375. _____ are sometimes seen on the plastered surface, especially when the Plaster is applied on the metal lath.
a. Rust stains b. Uneven surface c. Popping d. Peeling
376. _____ surface is prepared when it is desired to give acoustical treatment to the hall or room.
a. Acoustic Plaster b. Marble plaster c. Barium plaster d. Gypsum plaster
377. _____ is used as a final coat for surfaces of X-Ray rooms.
a. Gypsum plaster b. Barium plaster c. Granite plaster d. Marble plaster
378. The resulting product is hemihydrate of calcium sulphate and it is known as first settle plaster or _____
a. Plaster of Paris b. Latex c. Potassium sulphate d. Parian cement
379. _____ is a fire resistant material and it does not allow heat to pass easily.
a. Gypsum plaster b. Snowcrete c. Sirapite d. Scagliola
380. The mortar used for the smooth cast finish has cement and sand in the ratio of _____
a. 1:2 b. 2:3 c. 1:3 d. 1:4

381. In sand faced finish, the second coat of plaster is applied after curing the first coat for _____ days.
a. 7 b. 15 c. 21 d. 27
382. The first coat in sand faced finish is applied in _____ cement sand mortar.
a. 1:2 b. 1:3 c. 1:1 d. 1:4
383. In sand faced finish, the thickness of the second coat is _____
a. 4 mm b. 8 mm c. 12 mm d. 15 mm
384. Rough cast finish is also known as _____
a. Dry dash finish b. Pebble dash c. Spatter dash finish d. Textured finish
385. In rough cast finish, the mortar for the final coat has the ratio _____ (cement: sand: aggregate).
a. 1 : 3/2 : 3 b. 3/2 : 1 : 3 c. 1 : 3/2 : 4 d. 1 : 1/2 : 3
386. Pebble dash is also known as _____
a. Dry dash finish b. Rough cast finish c. Wet dash finish d. Spatter dash finish
387. In pebble dash, the size of pebbles used generally varies from _____
a. 2-5 mm b. 10-20 mm c. 20-35 mm d. 30-50 mm
388. The _____ are coatings of fluid materials and they are applied over the surfaces of timber and metals.
a. Varnishes b. Paints c. Distemper d. Oil
389. _____ is a carbonate of lead and it forms the base of lead Paints.
a. Lithopone b. Titanium white c. White lead d. Red lead
390. _____ is an oxide of lead and it forms the base of lead Paints.
a. Red Lead b. White lead c. Antimony white d. Titanium white
391. _____ forms the base of all iron Paints.
a. Titanium white b. Zinc white c. Antimony white d. Iron oxide
392. . _____ forms the bulk of aluminium Paints.
a. Titanium white b. Antimony white c. Aluminium powder d. Lithopone
393. . _____ is most common material used as a vehicle of a paint.
a. Nut oil b. Poppy oil c. Linseed oil d. Tung oil
394. _____ substances accelerate the process of drying.
a. Solvent b. Distemper c. Drier d. Base
395. The function of _____ is to make the paint thin so that it can be easily applied on the surface.
a. Pigment b. Solvent c. Carrier d. Base
396. The _____ is inflammable, evaporates rapidly and dries the oil consequently.
a. Distemper b. Turpentine c. Linseed oil d. Litharge
397. _____ is suspended in either quick drying spirit varnish or slow drying oil varnish as per requirement.
a. Aluminium paint b. Anti-corrosive paint c. Asbestos paint d. Cellulose paint
398. _____ essentially consist of oil and stronger drier.
a. Asbestos paint b. Cellulose paint c. Cement paint d. Anti-corrosive paint
399. _____ is prepared from nitro cotton, celluloid sheets, photographic films, etc.
a. Colloidal paint b. Emulsion paint c. Cellulose paint d. Enamel paint
400. _____ contains binding material such as polyvinyl Acetate, synthetic resins, etc.
a. Colloidal paint b. Emulsion paint c. Enamel paint d. Graphite paint
401. _____ contains the necessary variety of plastic and it is available in the market under different trade names.
a. Oil paint b. Plastic paint c. Luminous paint d. Inodorous paint

402. _____ defects is caused by the water vapour which is trapped behind the painted surface.
a. Flaking b. Fading c. Blistering d. Flashing

403. In _____ defect, the formation of dull patches occurs on the finished polished surface.
a. Flaking b. Bloom c. Fading d. Flashing

404. The formation of soap patches on the painted surface is termed as the _____
a. Wrinkling b. Running c. Sagging d. Saponification

405. The appearance of clear background due to insufficient opacity is known as _____
a. Running b. Sagging c. Wrinkling d. Grinning

406. _____ defect occurs when surface to be painted is too smooth.
a. Sagging b. Running c. Grinning d. Wrinkling

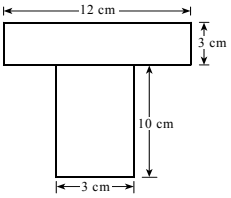
407. The _____ is a hard substance and is available from the Earth at the place where pine trees exist in past.
a. Lac b. Copal c. Shellac d. Rosin

408. Boiled linseed oil is used as a solvent for _____ resin.
a. Amber b. Mastic c. Gum d. Rosin

409. The _____ varnishes dry slowly, but they form hard and durable surface.
a. Oil b. Spirit c. Water d. Turpentine

410. Where the center of gravity of a circle lies?
a. At its centre b. Anywhere on its radius
c. Anywhere on its circumference d. Anywhere on its diameter

411. Where will be the centre of gravity of the T section shown in the figure?
a. At 8.545cm
b. At 6.5cm
c. At 5cm
d. At 9.25cm



412. Where will be the center of gravity of an I section will be if the dimension of upper web is 2x10cm, lower web is 2×20 and that of flange is 2x15cm If the y-axis will pass through the center of the section?
a. 7.611cm b. 9.51cm c. 9.31cm d. 11.5cm

413. The axis about which moment of area is taken is known as _____
a. Axis of area b. Axis of moment c. Axis of reference d. Axis of rotation

414. Point, where the total volume of the body is assumed to be concentrated is _____
a. Center of area b. Centroid of volume c. Centroid of mass d. All of the mentioned

415. What is MOI?
a. ml^2 b. mal c. ar^2 d. None of the mentioned

416. What is the formula of theorem of perpendicular axis?
a. Izz = Ixx – Iyy b. Izz = Ixx + Ah2 c. Izz – Ixx = Iyy d. None of the mentioned

417. What is the formula of theorem of parallel axis?
a. $I_{AB} = IG + Ah$ b. $I_{AB} = Ah^2 + IG$ c. $I_{AB} = IG – Ah2$ d. $I_{AB} = IG + Ixx$

418. What will be the radius of gyration of a circular plate of diameter 10cm?
a. 1.5cm b. 2.0cm c. 2.5cm d. 3cm

419. What is the moment of inertia of a circular section?
a. $\pi D^4/64$ b. $\pi D^3/32$ c. $\pi D^3/64$ d. $\pi D^4/32$

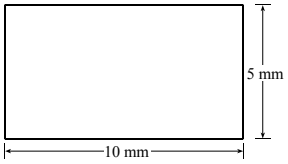
420. What is the moment of inertia of a rectangular section about an horizontal axis through C.G?
a. $bd^3/6$ b. $bd^2/12$ c. $b2d^2/12$ d. $bd^3/12$

421. What is the moment of inertia of a rectangular section about an horizontal axis passing through base?
a. $bd^3/12$ b. $bd^3/6$ c. $bd^3/3$ d. $bd^2/3$

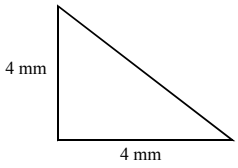
422. What is the moment of inertia of a triangular section about the base?
a. $bh^2/12$ b. $bh^3/12$ c. $bh^3/6$ d. $bh^2/6$

423. What is the moment of inertia of a triangular section about an axis passing through C.G. and parallel to the base?
a. $bh^3/12$ b. $bh^3/24$ c. $bh^3/36$ d. $bh^3/6$

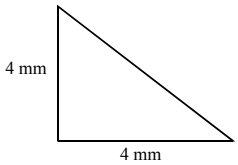
424. What will be the moment of inertia of the given rectangle about horizontal axis passing through the base?
a. 1500 mm^4 b. 1650 mm^4
c. 1666 mm^4 d. 1782 mm^4



425. What will be the moment of inertia of the given triangle about the base?
a. 20.33 mm^4 b. 21.33 mm^4
c. 24.33 mm^4 d. 22.33 mm^4



426. What will be the moment of inertia of the given triangle about an axis passing through C.G and parallel to base?
a. 6.1 mm^4 b. 7.1 mm^4
c. 8.1 mm^4 d. 7.56 mm^4



427. What will be the difference between MOI of two triangle sections is in 1st, MOI is taken about its base and in 2nd MOI is taken about its centroid?
a. $bh^3/12$ b. $bh^3/18$ c. $bh^3/36$ d. $bh^3/24$

428. What is mass moment of inertia of circular plate?
a. $Md^2/3$ b. $Md^2/12$ c. $Mr^2/4$ d. $Mr^2/3$

429. What is the mass MOI of right circular cone of radius R and height H about its axis?
a. $4MR^2/10$ b. $MR^2/10$ c. $3MR^2/10$ d. $MR^2/12$

430. The product of inertia at the principal axes is _____
a. Minimum b. Unit c. Zero d. Maximum

431. What is the unit of product of inertia?
a. mm^4 b. mm^2 c. mm d. mm^3

432. What is the product of inertia of a circle of diameter 10mm?
a. $1862mm^4$ b. $1945mm^4$ c. $1963mm^4$ d. $2014mm^4$

433. Determining the relative positions of points on above or beneath the surface of the earth by means of direct or indirect measurements of distance and direction and elevation is called as _____
a. Surveying b. Levelling c. Measuring d. Contouring

434. Finding the elevations of a point with respect to a given or assumed and establish points given elevation or at different elevations with respect to given or assumed datum is _____
a. Surveying b. Levelling c. Bearing d. Contouring

435. Type of surveying in which the mean surface of the earth is considered as a plane and the spheroidal shape is neglected called as _____
a. Topographic Surveying b. Hydrographic Surveying
c. Geodetic Surveying d. Plane Surveying

436. Type of surveying in which the shape of the earth taken into account is
a. Topographic Surveying b. Hydrographic Surveying
c. Geodetic Surveying d. Plane Surveying

437. Horizontal projection of an area and shows only horizontal distances of the points is
a. Contour lines b. Levelling c. Surveying d. Plan
438. What type of surveys needs to fix the boundaries of municipalities and of state and federal jurisdictions?
a. Topographic Surveying b. Hydrographic Surveying
c. Cadastral Surveying d. City Surveying
439. Determining the absolute location of any point or the absolute location and direction of any line on the surface of the earth is called
a. Topographic Surveying b. Astronomical Surveying
c. Cadastral Surveying d. Hydrographic Surveying
440. In which surveying, shape of earth is taken into consideration?
a. Plane surveying b. Geodic surveying
c. Topographic surveying d. Geological surveying
441. Representing large scale on the surface of the earth is
a. Plan b. Map c. Scale d. Area
442. The ratio of map distance to corresponding ground distance is called as
a. Representative factor b. Representation factor
c. Reciprocating factor d. Recurring factor
443. Which among the following scales is used to determine the original scale when the plan on the drawing sheet shrinks due to atmospheric conditions?
a. Vernier scale b. Plane scale c. Shrunk scale d. Diagonal scale
444. Design a vernier for a theodolite circle divided into degrees and one fourth degrees to read to 20□□.
a. 55 b. 45 c. 65 d. 35
445. Horizontal angle measured clockwise from geographic meridian to the direction of progress of a line is known as _____
a. Horizontal meridian b. Vertical meridian c. Azimuth d. Horizontal bearing
446. The formula for shrunk scale can be given as
a. Original scale × shrinking factor b. Shrunk scale × shrinking factor
c. Vernier scale × shrinking factor d. Diagonal scale × shrinking factor
447. Which of the following is not among the methods of linear measurements?
a. Direct measurements b. Measurements by optical means
c. Indirect measurements d. Electromagnetic methods or EDM
448. Which of the following is not a method of measuring the distances directly?
a. Pacing b. Measurement with passometer
c. Measurement with pedometer d. Measurement with theodolite
449. Which of the following measurements varies with an individual before computing the length of line?
a. Chaining b. Pacing c. Levelling d. Contouring
450. Pacing is difficult in
a. Smooth surfaces b. Plain areas c. Rough ground d. Plateaus
451. Instrument for registering the number of revolutions of a wheel is
a. Odometer b. Pedometer c. Pedometer d. Chaining
452. Which of the following is not under direct measurement?
a. Pacing b. Chaining c. Taping d. Triangulation
453. What is used for measuring offsets, but it is often used by building surveyors or architects?
a. Plum bob b. Butt rod c. Pegs d. Laths
454. Horizontal angle with the Magnetic Meridian through one of the extremities of the line is called _____
a. True bearing b. Magnetic Bearing c. Arbitrary bearing d. Magnetic Declination
455. The Magnetic Bearing of a line is 48°24′. Calculate the true bearing if the magnetic declination is 5°38′ East.
a. 54°02′ b. 44°02′ c. 54°22′ d. 45°02′
456. What is the lateral distance of an object or ground feature measured from a survey line?
a. Offset b. Perpendicular distance c. Side distance d. Perpendicular offset

457. An offset is laid out 6° from its true direction on the field. Find the resulting displacement of the plotted point on the paper in a direction parallel to the chain line? (Given the length of offset is 10 m and scale is 5 m to 1 cm)
a. 0.209 cm b. 0.260 cm c. 0.0109 cm d. 0.910 cm

458. What is the direction of line relative to a given meridian?
a. Bearing of a line b. Length of a line
c. Slope of a line d. Reciprocal of slope of a line

459. Which of the following classification in surveying is based on the instrument used?
a. Traverse surveying b. Cadastral surveying
c. Topographic surveying d. Hydrographic surveying

460. In which of the following areas does compass surveying is not recommended?
a. Large areas b. Undulating areas
c. Crowded with many details d. Local attraction suspected areas

461. In which of the following cases compass surveying is recommended?
a. When area is small, undulating and not details are crowded
b. When area is large, undulating and crowded with many details
c. When area is small, even and crowded with many details
d. When area is large, even and crowded with many details

462. Which of the following cannot be done with the help of theodolite in surveying?
a. Measuring horizontal distances b. Prolonging survey lines
c. Laying off horizontal angles d. Locating points on lines

463. Which of the following doesn't involve the method of traversing?
a. Plane Table surveying b. Tacheometric surveying
c. Chain surveying d. Theodolite surveying

464. Which of the following is not a method of plane table surveying?
a. Trisection b. Intersection c. Resection d. Radiation

465. While taking Observations for the height and distances, which of the following method of surveying is used?
a. Plane surveying b. Geodic surveying c. Chain surveying d. Compass surveying

466. Which of the following type of surveying can be employed in a magnetic area?
a. Compass surveying b. Traverse surveying
c. Plane table surveying d. Theodolite surveying

467. Which of the following will not come under the marine surveying category?
a. Water survey b. Yacht survey c. Machinery survey d. Cargo survey

468. Which of the following is having the same principle as that of photo-theodolite?
a. Theodolite surveying b. Plane-table surveying
c. Traverse surveying d. Compass surveying

469. In which of the following cases the method of deflection distances is used?
a. Land surveys b. Road survey c. Town survey d. Railway planning survey

470. _____ is defined as a curved surface which at each point is perpendicular to the direction of gravity at the point.
a. Level surface b. Level line c. Horizontal plane d. Datum

471. Which of the following methods of levelling makes use of the phenomenon that difference in elevation between two points is proportional to the difference in atmospheric pressures at these points?
a. Barometric levelling b. Trigonometric levelling
c. Spirit levelling d. Traverse levelling

472. When an instrument is at P the staff readings on P is 2.748 and on Q is 1.824 when instrument at Q the staff readings on P is 1.606 and Q is 0.928. Distance between P and Q is 1010 mts. R.L. of P is 126.386. Find the angular error in collimation adjustment of the instrument?
a. 39″ b. 49″ c. 59″ d. 69″

473. Which of the following is not an instrumental error?
a. error due to imperfect adjustment b. error due to sluggish bubble
c. error due to movement of objective slide d. settlement of tripod or turning points

474. Which of the following is a personal error?
   a. mistakes in manipulation
   b. atmospheric refraction
   c. settlement of tripod or turning points
   d. wind vibrations
475. Which of the following is not a personal error?
   a. mistake in rod handling
   b. errors in sighting
   c. mistake in reading the rod
   d. error due to defective joint
476. Which of the following is not a principle source of error in levelling?
   a. instrumental error b. natural error c. personal error d. Systematic error
477. While doing construction work, which among the following is more suitable?
   a. Rise and Fall method
   b. Traversing
   c. Height of the Instrument method(H.I)
   d. Compass Surveying
478. The formula for calculating R.L can be given as _____
   a. H.I+F.S b. H.I-F.S c. H.I-B.S d. H.I+B.S
479. If the R.L of a B.M is 100m and back sight is 1.225m, find the H.I at the station?
   a. 101.225m b. -101.225m c. 98.775m d. -98.775m
480. Find the value of R.L, if B.M = 400 m, B.S = 1.142 m, F.S = 2.121 by using rise and fall method?
   a. 400.79 m b. 400.97 m c. 409.79 m d. 399.02 m
481. If d = 2.94 km, what would be the combined correction for curvature and refraction?
   a. 1.85 km b. 0.85 km c. 0.58 km d. 1.58 km
482. To measure the horizontal angle which of the following is the first step?
   a. Releasing all clamps
   b. Levelling instrument
   c. Turning plates
   d. Clamping the plates
483. After levelling of an instrument is done what is the next up?
   a. Releasing all clamps
   b. Loosing the lower clamp
   c. Turning plates
   d. Clamping the plates
484. If one of the vernier is at 0° then another vernier reading shows / also shows _____
   a. 90° b. 0° c. 180° d. 45°
485. In first method of taking single set, after keeping the telescope normal throughout we measure the angle clockwise by 6 repetitions. We obtain the first value of the angle by dividing the final reading by _____
   a. 2 b. 3 c. 4 d. 6
486. In angular method of setting a curve, which of the following is used?
   a. Compass b. Tape c. Chain d. Theodolite
487. Find the value of radius if the value of D is given as 23.76m.
   a. 214.98m b. 241.61m c. 214.16m d. 241.16m
488. Using the degree of curvature, find the value of radius of curve if the distance is given as 24.65 m.
   a. 64.49m b. 46.49m c. 46.94m d. 64.94m
489. Which of the following indicates the correct set of M's used in the case of GIS?
   a. Manipulating, monitoring, mapping, modeling
   b. Measuring, manipulating, mapping, modeling
   c. Measuring, monitoring, marketing, modeling
   d. Measuring, monitoring, mapping, modeling
490. Mapping involves which of the following?
   a. Soil details b. Boundary details c. Cadastral details d. Population details
491. Which of the following software can be used in case of property tax assessment?
   a. STAAD Pro b. Revit c. Remote sensing d. GIS
492. Which of the following represents the correct set of coordinate classification in GIS?
   a. Spherical, projected systems
   b. Geographic, projected systems
   c. Geographic, spherical systems
   d. Geographic, geometric systems
493. Longitudes are used to represent which of the following directions?
   a. North–East b. South c. North d. East
494. IS uses the information from which of the following sources?
   a. Non- spatial information system
   b. Spatial information system
   c. Global information system
   d. Position information system
495. Which of the following formats can be used for GIS output?
   a. DXF b. PDF c. GIF d. HTML
496. Which among the following is not related to GIS software's?
   a. CAD b. Arc GIS c. Arc View d. STAAD Pro

497. Among the following, which do not come under the components of GIS?
a. Hardware b. Software c. Compiler d. Data
498. Which of the following doesn't determine the capability of GIS?
a. Defining a map b. Representing cartographic feature
c. Retrieving data d. Transferring data
499. Which type of data set is not used in GIS related software's?
a. Vertex b. Point c. Poly line d. polygon
500. Which of the following justifies the usage of topology?
a. Terrain of the area b. Geometry of the model
c. Climatic conditions d. Atmospheric conditions
501. Which feature of GIS can share the boundary of the polygon?
a. Polygons b. Poly lines c. Dongle nodes d. Silver polygons
502. Which of the following acts as a source of inaccuracy?
a. Format of data b. Silver polygon c. Unclosed polygon d. Dongle nodes
503. Which is the main parameter used in pseudo ranging?
a. Time b. Distance c. Velocity d. Frequency
504. GPS user solution depends on which of the following?
a. Absolute positioning b. Satellite vehicle c. Space vehicle d. Relative positioning
505. Which of the following can indicate the correct set of GPS segments?
a. Navigation, space b. User, navigation c. Control, user d. Control, navigation
506. Which of the following indicate the functioning of the Space segment?
a. Navigational signals b. Space signals
c. User signals d. Control signals
507. GPS can also be known as
a. GOS b. Arc GIS c. GIS d. NavStar
508. Accuracy of the position through can be influenced by
a. Refraction b. Reflection c. Signal strength d. Position of satellite
509. Which of the following can be affected by atmospheric path disturbances?
a. Modern GPS surveying b. Conventional GPS
c. Absolute positioning d. Resection method
510. Which of the following error occurs due to atmospheric conditions?
a. Natural error b. User error
c. Propagation error d. Signal multipath error
511. Which of the following is considered as modern GPS technology?
a. GIS b. GPS mode
c. Instantaneous mode d. Kinematic positioning technique
512. Which among the following is more accurate in its output?
a. Absolute positioning b. Resection method
c. Modern GPS surveying d. Conventional GPS method
513. Which of the following data is not required to prepare an estimate?
a. Amplitude b. Drawings c. Specifications d. Rates
514. The process of working out the cost per unit of each item is known as _____
a. Work b. Sheet c. Data d. Analysis
515. While fixing rate per unit of an item, the quantity of materials and labour needed for one unit of an item are strictly per _____
a. Special Data Book b. Standard Data Book c. Special Data Record d. Specific Data Record
516. In the case of works which require some special types of equipment, an amount of _____ percent of the estimated cost is given.
a. 1-2 b. 5-9 c. 12-18 d. 16-20
517. Which of the following is not a method used for preparing approximate estimates?
a. Cubical contents method b. Unit base method
c. Plinth area method d. Cylindrical base method

518. In the plinth area method, the cost of construction is computed by the multiplication of _____
    a. Plinth length and rate
    b. Plinth breadth and rate
    c. Plinth area and plinth area rate
    d. Plinth volume and plinth length rate
519. Which of the following is not a method of working out quantities like earthwork and brickwork in plinth?
    a. Long wall-short wall method
    b. Centre line method
    c. Thick wall – thin wall method
    d. Partly centre line and short wall method
520. To get the quantities, the lengths found using the long wall-short wall method are multiplied with _____
    a. Width b. Weight c. Thickness d. Breadth and depth
521. In long wall-short wall method, the length of the long wall is calculated after the addition of _____ to its centre line length at each end.
    a. Breadth b. Half breadth c. Height d. Half-height
522. The centre line method is suitable for walls having _____
    a. Different cross-sections
    b. Similar cross-sections
    c. Same weights
    d. Same materials
523. In partly centre line and partly cross wall method, the centre line method is applied to _____
    a. External walls b. Internal walls c. Thick walls d. Thin walls
524. In earthwork calculations, the average horizontal distance between the centre of deposition and the centre of excavation is known as _____
    a. Lift b. Flooring c. Lead d. Embankment
525. In earthwork calculations, how many lifts are to be paid to the contractor when the earth is to be lifted for 4.5 meters?
    a. Four b. Eight c. Twelve d. Sixteen
526. Which of the following is not a lump sum item in the estimate?
    a. Architectural features
    b. Water supply and sanitary arrangements
    c. Masonry items
    d. Electrical installations
527. Single units work such as doors and windows are expressed in _____
    a. numbers b. metres c. m^2 d. m^3
528. Work consisting of linear measurements like fencing which involve lengths is measured in _____
    a. Kilograms b. Running metres c. m^2 d. m^3
529. Works like whitewashing and plastering are measured in _____
    a. m^2 b. Meters c. Liters d. m3
530. The concrete used for cement concrete roads is of grade _____
    a. M 10 b. M 15 c. M 20 d. M 35
531. The quantity of coarse aggregate required for RCC (1:3:6) for 20 cubic meters of work is _____
    a. 18.24 m^3 b. 15.23 m^3 c. 24.87 m^3 d. 32.45 m^3
532. Which of the following is not a classification of labour?
    a. Skilled first class b. Skilled second class c. Unskilled d. Unskilled fourth class
533. Which of the following is the correct order of stages of estimation of concrete roads?
    a. Earthwork excavations, cement concrete for the base course (1:4:8) and cement concrete for wearing course (1:2:8)
    b. Earthwork excavations, cement concrete for wearing course (1:4:8) and cement concrete for the base course (1:2:8)
    c. Earthwork excavations, cement concrete for the base course (1:6:9) and cement concrete for wearing course (1:7:9)
    d. Cement concrete for the base course (1:2:3), cement concrete for wearing course (2:7:9) and earthwork excavations
534. Calculate the number of cement bags required for 2500 kg of cement.
    a. 50 b. 100 c. 500 d. 200
535. The quantity of sand required for RCC (1:2:4) for 15 cubic metres of work is _____
    a. 4.76 m3 b. 10.32 m3 c. 8.43 m3 d. 6.51 m3
536. Calculate the number of cement bags required for RCC (1:2:4) for 15 m^3 of work.
    a. 24.6 b. 38.9 c. 56.7 d. 93.8

537. The unit of payment of cement concrete in lintels is _____
a. Per sqm b. Per cum c. Quintal d. Kilograms

538. A pumping set with a motor has been installed in a building at a cost of Rs.2500.00. Assuming the life of the pump as 15 years, work out the amount of annual instalment of sinking fund required to be deposited to accumulate the whole amount of 4% compound interest.
a. rs.355 b. rs.125 c. rs.185 d. rs.1950

539. In this method, it is assumed that the property will lose its value by a constant percentage of its value at the beginning of every year. This method is called?
a. sinking fund method b. constant percentage method
c. straight line method d. quantity survey method

540. In this method approx. total length of walls is found in running metre and this total length multiplied by the rate per running metre of wall gives a fairly accurate cost.
a. annual repair b. item rate estimate
c. approximate quantity method estimate d. cubical content estimate

Answer Sheet

1.b	2.a	3.d	4.c	5.c	6.a	7.d	8.b	9.d	10.b	11.b	12.c	13.d	14.c	15.a
16.b	17.d	18.a	19.b	20.b	21.c	22.d	23.c	24.a	25.c	26.d	27.d	28.c	29.a	30.a
31.b	32.b	33.c	34.b	35.b	36.a	37.c	38.b	39.d	40.a	41.b	42.c	43.d	44.a	45.c
46.d	47.b	48.a	49.b	50.b	51.b	52.c	53.d	54.a	55.a	56.c	57.a	58.c	59.d	60.c
61.a	62.b	63.c	64.d	65.c	66.a	67.a	68.c	69.d	70.b	71.a	72.b	73.b	74.c	75.a
76.d	77.c	78.b	79.d	80.a	81.b	82.b	83.b	84.d	85.c	86.d	87.a	88.a	89.c	90.b
91.c	a 92.d	93.d	94.b	95.c	96.b	97.c	98.b	99.a	100.d	101.c	102.c	103.b	104.d	105.c
106.a	107.c	108.d	109.a	110.a	111.c	112.d	113.a	114.c	115.d	116.a	117.b	118.d	119.c	120.d
121.c	122.a	123.c	124.d	125.a	126.b	127.d	128.c	129.a	130.d	131.c	132.a	133.b	134.c	135.b
136.b	137.d	138.c	139.a	140.c	141.b	142.a	143.c	144.d	145.a	146.b	147.a	148.c	149.d	150.b
151.c	152.d	153.a	154.d	155.a	156.c	157.a	158.b	159.d	160.c	161.c	162.d	163.d	164.a	165.d
166.c	167.b	168.a	169.d	170.c	171.b	172.d	173.c	174.a	175.c	176.d	177.b	178.a	179.c	180.a
181.d	182.b	183.a	184.b	185.c	186.b	187.a	188.d	189.b	190.c	191.b	192.b	193.a	194.a	195.c
196.a	197.a	198.d	199.c	200.c	201.a	202.c	203.d	204.d	205.c	206.a	207.d	208.a	209.d	210.c
211.b	212.a	213.b	214.d	215.c	216.b	217.a	218.b	219.d	220.b	221.a	222.d	223.c	224.a	225.a
226.a	227.b	228.c	229.c	230.b	231.a	232.b	233.a	234.a	235.a	236.c	237.d	238.b	239.a	240.a
241.c	242.d	243.b	244.c	245.a	246.b	247.d	248.c	249.a	250.c	251.b	252.d	253.c	254.c	255.b
256.c	257.b	258.d	259.a	260.b	261.c	262.b	263.d	264.a	265.d	266.c	267.c	268.a	269.a	270.b
271.a	272.b	273.d	274.d	275.c	276.a	277.b	278.a	279.c	280.b	281.a	282.c	283.a	284.a	285.b
286.d	287.c	288.a	289.b	290.d	291.d	292.a	293.a	294.d	295.a	296.a	297.b	298.b	299.c	300.a
301.c	302.d	303.d	304.a	305.a	306.b	307.a	308.b	309.a	310.b	311.a	312.c	313.d	314.c	315.c
316.d	317.b	318.c	319.a	320.c	321.b	322.a	323.d	324.c	325.b	326.b	327.d	328.a	329.b	330.c
331.b	332.d	333.d	334.b	335.a	336.c	337.c	338.a	339.b	340.c	341.c	342.b	343.c	344.d	345.a
346.a	347.c	348.d	349.c	350.c	351.d	352.a	353.b	354.a	355.a	356.b	357.a	358.c	359.a	360.b
361.b	362.d	363.b	364.d	365.a	366.a	367.b	368.c	369.d	370.b	371.b	372.c	373.a	374.b	375.a
376.a	377.b	378.a	379.a	380.c	381.a	382.d	383.b	384.c	385.a	386.a	387.b	388.b	389.c	390.a
391.d	392.c	393.c	394.c	395.b	396.b	397.a	398.d	399.c	400.b	401.b	402.c	403.b	404.d	405.d
406.b	407.b	408.a	409.a	410.a	411.a	412.b	413.c	414.b	415.c	416.c	417.b	418.c	419.a	420.d
421.c	422.b	423.c	424.c	425.b	426.b	427.b	428.c	429.c	430.c	431.a	432.c	433.a	434.b	435.d
436.c	437.d	438.c	439.b	440.b	441.a	442.a	443.c	444.b	445.c	446.a	447.c	448.d	449.b	450.c
451.a	452.d	453.b	454.b	455.a	456.a	457.a	458.a	459.a	460.d	461.b	462.a	463.b	464.a	465.b
466.c	467.a	468.b	469.b	470.a	471.a	472.a	473.d	474.a	475.d	476.d	477.c	478.b	479.a	480.d
481.c	482.b	483.a	484.c	485.d	486.d	487.d	488.b	489.d	490.c	491.d	492.b	493.d	494.b	495.c
496.d	497.c	498.d	499.a	500.b	501.a	502.a	503.a	504.c	505.c	506.a	507.d	508.d	509.a	510.d
511.d	512.d	513.a	514.c	515.b	516.a	517.d	518.c	519.d	520.d	521.b	522.b	523.a	524.c	525.a
526.c	527.a	528.b	529.a	530.b	531.a	532.d	533.a	534.a	535.d	536.d	537.b	538.b	539.c	540.c

Explanation Hint

6.	**Hint:**	As per IS standards. Heavy stones are used in the construction of abutments, dams, docks. Lighter ones are used in building construction.
29.	**Hint:**	Pugging or tempering is done by adding water to brick earth and kneading until a homogenous mass and required plasticity is attained
37.	**Hint:**	Unburnt bricks are the one dried in the sun, after moulding. They are kept for a long time until they dry. Sometimes due to a large number of bricks, limited time, improper workman skills, the bricks are not completely dried and hence are called Kucha bricks.
53.	**Hint:**	Onyx has a creamy, pearl like look. It is not commonly used for flooring but can be employed for skirting around bathtubs and mosaics.
85.	**Hint:**	Pozzolana is a material containing silica. PPC is formed by intergrinding ordinary Portland cement, clinker, gypsum and pozzolanic material.
93.	**Hint:**	The grades of cement are specified by IS 1489-1991. Cements are usually graded based on their compressive strength.
95.	**Hint:**	Grade 43 OPC has higher strength than grade 33 and lower than grade 53. Grade 33 used for finishing works under normal condition. Grade 53 is used for high rise building.
97.	**Hint:**	Cement stored in the factory of more than 6 months has to be retested and rejected if it does not meet requirements. Time period of more than 3 months is for cement bags with vendors.
165.	**Hint:**	Nitro cotton is an element contained in cellulose paints, zinc white and white lead are components of enamel paints.
172.	**Hint:**	Shellac is a natural resin obtained from the secretion of the female lac bug. All other options are artificially obtained.
177.	**Hint:**	As per IS codes, the loading on brick specimen in a CTM should be uniform at rate of 14 N/mm^2 per minute.
185.	**Hint:**	As per IS codes, number of bricks are tested in CTM and average is taken. It should be a minimum of 3.5 N/mm^2.
193.	**Hint:**	The value is in accordance with the IS code 12269 for 53 grade OPC. Table 3 gives physical requirements and fineness is one of them.
196.	**Hint:**	Three types are natural sand (river banks), crushed stone sand (hard stone) and crushed gravel sand (gravel).
205.	**Hint:**	According to IS 565, the sieve sets are 80mm, 40mm, 20mm, 10mm, 4.75mm for coarse aggregates.
208.	**Hint:**	The 5 methods are throw-action, horizontal, tapping, wet and air circular jet.
213.	**Hint:**	IS 2720 gives the specifications. It requires using sample weighing 5 kg for coarse aggregates and 1 kg for fine aggregates.
214.	**Hint:**	Cast iron contains 2-4% of carbon, wrought iron contains less than 0.15% of carbon and stainless steel contains maximum 0.08% carbon.
218.	**Hint:**	TMT bars are produced by sudden quenching of red hot steel bars by spraying water. Hence it is called Thermo Mechanically Treated bar.
226.	**Hint:**	PMB stands for Polymer Modified Bitumen. These are produced by adding polymers like styrene-butadiene-styrene (SBS), SBR, polyethylene, etc. The polymers help in modifying the properties of bitumen.
229.	**Hint:**	Bitumen is graded in terms of penetration and viscosity. According to penetration grading, the 80/100 grading indicates that the penetration of bitumen is between 8 to 10 mm. Viscosity grading is represented by VG 10, which has penetration value in the range 8 to 10 mm.
234.	**Hint:**	Spot test is a type of chromatographic test which determines if the bitumen is cracked or not. It is used to check if bitumen has been damaged by overheating.

243.	**Hint:**	There are over 2300 species of termites but only about 4% of the termite spaces are responsible for the damage of the buildings. The termites live in a colony and they are very fast in eating wooden and other cellulosic materials as food.
247.	**Hint:**	Stepped foundation is adopted when the construction becomes uneconomical to provide foundations at the same level. In this, minimum depth of 800 mm should be provided at all the points.
253.	**Hint:**	Generally the plinth level is provided at about 300 to 400 mm above finished ground level. It is suggested that plinth level should be decided by considering the top level of the ground and hence considering the level.
258.	**Hint:**	The total amount of settlement should be generally limited between 40 mm and 100 mm. The term differential settlement indicates the relative settlement of the adjacent portion of the structure.
262.	**Hint:**	Timber Grillage Foundation uses Timber planks and Timber beams in the place of Steel joists. This Foundation is especially useful in waterlogged areas where the bearing power of soil is very low.
286.	**Hint:**	As the name suggests, the Garden-wall bond is used for the construction of the boundary walls, compound walls, Garden walls, etc. The wall is one brick wall and its height does not exceed 2 metres. The wall my may be constructed either in English bond or Flemish bond.
294.	**Hint:**	Glazed finish is used to give a very pleasing and shiny appearance to the surfaces. Hence, this type of surface finish is widely used for decorative works.
298.	**Hint:**	In horizontal reinforcement, wrought iron flat bars called hoop iron is extensively used. The number of strips of hoop iron used for one header brick is generally two.
310.	**Hint:**	Vibroflotation increases the density of soil which ultimately results in the increase of bearing capacity of soil. This method is useful for granular or sandy soil and before the processing of underpinning start, the building or any of its structure components is shored carefully.
318.	**Hint:**	Hot bitumen is a flexible material and is placed on the bedding of concrete or mortar. This material should be applied with a minimum thickness of 3 mm.
327.	**Hint:**	Chamfering forms an angle of 45° and a V joint will be formed when two chamfered pieces are placed together. If the angle of chamfer is other than 45°, it is known as the Bevel. If the chamfer does not continue for the full length of timber, it is called as Stopped Chamfer.
342.	**Hint:**	The joists are usually placed at the centre to Centre distance of 300 mm to 450 mm. The joists are supported on the wall plates at their ends. The space of about 50 mm is kept for the circulation of the air.
344.	**Hint:**	The joists may be either rest on wall or on Steel beam. The joists act as reinforcement and are spaced at a centre to Centre distance of 600 mm to 900 mm.
351.	**Hint:**	The moorum is a form of disintegrated rock with the binding material. It is laid in layers of 80 mm to 150 mm thickness over a prepaid subgrade and it is well consolidated and well water every time. Finally, layer of 25 mm thickness of powdered or fine moorum is spread and water is sprinkled over it.
367.	**Hint:**	Metal lath is prepared from sheets of mild steel which are machine cut and drawn out or expanded. A diamond mesh appearance is thus formed throughout the whole area of the sheet. The hybrid which is steel lath can also be used for this purpose
371.	**Hint:**	The Flaking is mainly due to Bond failure between successive coats of plaster. Uneven surfaces becomes prominent only due to poor workmanship of the work.

379.	**Hint:**	Hence, Gypsum plaster is used as an insulating material to protect wood or metal columns and beams from high temperatures. It is light in weight. To decrease the weight, the fillers such as saw dust, wood shaving, etc. may be added to it.
383.	**Hint:**	In sand faced finish, the thickness of the first coat is 12 mm while the thickness of the second coat is 8 mm. The sand in the mortar mix for the second coat should be perfectly screened in order to obtain a uniform size resulting in the surface having sand grains of uniform density.
385.	**Hint:**	In rough cast finish, the mortar for the final coat has the ratio 1 : 3/2 : 3 (cement : sand : aggregate). Here, the size of the coarse aggregate varies from 3mm to 12 mm. A large trowel is used to dash the mortar against the prepared plastered surface.
411.	**Hint:**	The center of gravity is given by, $y = (a_1y_1 + a_2y_2) / (a_1 + a_2) = (36 \times 11.5 + 30 \times 5) / (36 + 30) = 8.545$cm.
412.	**Hint:**	The center of gravity is given by, $y = (a_1y_1 + a_2y_2 + a_3y_3) / (a_1 + a_2 + a_3) = (20 \times 18 + 30 \times 9.5 + 40 \times 1 / (20 + 30 + 40) = 1.611$cm.
414.	**Hint:**	The centroid of the volume is the point where total volume is assumed to be concentrated. It is the geometric centre of a body. If the density is uniform throughout the body, then the center of mass and center of gravity correspond to the centroid of volume. The definition of the centroid of volume is written in terms of ratios of integrals over the volume of the body.
417.	**Hint:**	The theorem of parallel axis states that if the moment of inertia of a plane area about an axis in the plane of area through the C.G. of the plane area be represented by IG, then the moment of the inertia of the given plane area about a parallel axis AB in the plane of area at a distance h from the C.G. is given by the formula $IAB = Ah^2 + IG$.
418.	**Hint:**	The moment of inertia of a circle, $I = \pi D^4/64 = 491.07$ cm^4
		The area of circle = 78.57 cm,
		Radius of gyration = (I/A.1/2 = 2.5 cm.
424.	**Hint:**	The moment of inertia of a rectangular section about an horizontal axis passing through base = bd3/3 = 5x10x10x10/3 = 1666.66 mm^4.
425.	**Hint:**	The moment of inertia of a triangular section about the base = $bh^3/12 = 4 \times 4 \times 4 \times 4/12 = 21.33$ mm^4.
426.	**Hint:**	The moment of inertia of a triangular section about an axis passing through C.G. and parallel to the base = $bh^3/36 = 4 \times 4 \times 4 \times 4/36 = 7.11$ mm^4.
427.	**Hint:**	The moment of inertia of a triangular section about the base is $bh^3/12$. The moment of inertia of a triangular section about an axis passing through C.G. is $bh^3/36$. So the difference = $bh^3/12 – bh^3/36 = bh^3/18$.
430.	**Hint:**	The moment of inertia about x-axis and about y-axis, on the axis they are zero. So the product of inertia will be zero in the principal axis.
432.	**Hint:**	The product of inertia = Area × C.G = $\pi \times 10 \times 10 / 4 \times 5 \times 5 = 1963$mm^2.
444.	**Hint:**	W.K.T, L.C = s/n, S = (1/4)° = 15□ and L.C = 20□□ = 20/60 min. So, 20/60 = 15/n, n = 45.
449.	**Hint:**	Length of a line is computed by knowing the average length of pace. Pacing is a rough surveying. Chaining gives almost accurate readings. Taping gives accurate readings.
455.	**Hint:**	Magnetic Declination is the horizontal angle between true meridian and magnetic meridian. Declination = +5°38’, magnetic bearing = 48°24’, then here, true bearing is sum of both i.e 48″24′ + 5°38′ = 54°02′.
457.	**Hint:**	Distance parallel to the chain = l sinΔ/ s = 10 sin 6°/ 5 = 0.209 cm.

465.	**Hint:**	Geodic surveying is used because it is assumed that the distances between the points observed are not large so that either the effect of curvature and refraction may be neglected or proper corrections may be applied linearly.
472.	**Hint:**	When observations are taken from P the apparent difference in elevation between P and Q is 2.748 – 1.824 = 0.924. When observations are taken from Q the apparent difference in elevation between P and Q is 1.606 – 0.928 = 0.678. Hence true difference in elevation is (0.924 +0.678)/2 = 0.801 mts. Error in observation = 0.924 – 0.801= 0.123 m. Error due to curvature and refraction is 0.069 mts. Therefore error in collimation is 0.123 + 0.069 = 0.192 m. If Δ is the inclination of line of the site then $\tan\Delta = 0.192/1010 = 0.000190$. Therefore $\Delta = 39''$.
480.	**Hint:**	In the rise and fall method, first we must calculate the difference between B.S and F.S. We get 1.142 – 2.121 = -0.979 m, which is negative. It means we have to subtract it from the given B.M for obtaining R.L i.e., R.L = 400 – 0.979 = 399.021 m.
481.	**Hint:**	We know that combined correction for curvature can be given as $C = \frac{6d^2}{14R}$. On substituting the value the of d in the above equation we get, $C = \frac{6d^2}{14R} = \frac{6 \times 2.94^2}{14 \times 6370} = 0.5814$
487.	**Hint:**	The value of radius with respect to only radius can be given as, R = 5730/D. On substitution, we get R = 5730 / 23.76 R = 241.16 m.
488.	**Hint:**	In degree of curvature, the value of radius can be designated by using 20m arc length. The formula is given as R = 1146 / D. On substitution, we get R = 1146 / 24.65 = 46.49 m.
502.	**Hint:**	Difference in scale, age of data, format of the data, qualitative and quantitative errors act as a source of inaccuracy. Inaccuracy develops due to lack of technique in the work which is being done.
520.	**Hint:**	To get the quantities, the lengths found using the long wall-short wall method are multiplied with breadth and depth. In this method, the centre line lengths of the individual walls are calculated first to get the length of the short wall and the long wall.
531.	**Hint:**	The ratio 1:3:6 is for cement, sand and coarse aggregate. Therefore, the quantity of coarse aggregate required for RCC (1:3:6) for 20 cubic metres of work is $[6/(1 + 3 + 6)] \times 1.52 \times 20$ m^3 i.e. 18.24 m^3.
534.	**Hint:**	The weight of one cement bag is 50 kg. Therefore, the number of cement bags required for 2500 kg of cement is 2500/50 i.e. 50 bags.
535.	**Hint:**	Approximately 1.52 m^3 of dry concrete is required for 1 m^3 of wet concrete. The quantity of sand required for RCC (1:2:4) for 15 cubic metres of work is $[2/(1 + 2 + 4)] \times 1.52 \times 15$ m^3 i.e. 6.51 m^3.
536.	**Hint:**	The quantity of cement required is $[1/(1 + 2 + 4)] \times 1.52 \times 15$ m3 i.e. 3.257 m^3. SP weight of concrete is 1440 kg/m^3 and the weight of one cement bag is 50 kg. Therefore, the number of cement bags required for RCC (1:2:4) for 15 m^3 of work is $3.257 \times 1440/50 = 93.8$ bags.

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