\*\*\*Sub Engineer\*\*\*

1. The ganesh of a staff
2. is maximum if the staff is held truly normal to the line of sight.
3. decreases if the staff is tilted away from normal
4. **is minimum if the staff is held truly normal to the line of sight.**
5. increases if the staff is tilted towards normal.
6. The radius of curvature of the arc of the bubble tube is generally kept
7. 10 m
8. **100 m**
9. 50 m
10. 25 m.
11. If *S* is the length of a subchord and *R* is the radius of simple curve, the angle of deflection between its tangent and sub-chord, in minutes, is equal to
12. 573 *S*/*R*
13. 171.9 *S*/*R*
14. **1718.9 *S*/*R*.**
15. 573 *R*/*S*.
16. The real image of a object formed by the objective must lie
17. **in the plane of cross hairs**
18. at the center of the telescope
19. at the optical center of the eye-piece
20. anywhere inside the telescope.
21. Pick up the correct statement from the following :
22. For thin structures subjected to wetting and drying, the water cement ratio should be 0.45
23. For mass concrete structures subjected to wetting and drying, the water ratio should be 0.55
24. For thin structures which remain continuously under water, the water-cement ratio by weight should be 0.55
25. **all the above.**
26. Ultimate strength of cement is provided by:
27. Tricalcium silicate
28. **Di-calcium silicate**
29. Tri-calcium aluminate
30. Tetra calcium alumino ferrite.
31. Elastomers can extend upto:
32. seven times their original dimensions
33. five times their original dimensions
34. three times their original dimensions.
35. **ten times their original dimensions**
36. Bitumen felt
37. is used as water proofing material
38. is made from bitumen and hessian fibres
39. is used as damp proofing material
40. **all the above.**
41. As compared to uniaxial tension or compression, the strain energy stored in bending is only
42. 1/8
43. **1/3**
44. 1/4
45. 1/2.
46. The weakest section of a diamond riveting, is the section which passes through
47. **first row**
48. second row
49. central raw
50. one rivet hole of end row.
51. The minimum number of rivets for the connection of a gusset plate, is
52. 1
53. **2**
54. 3
55. 4
56. The slenderness ratio of a vertical column of a square cross-section of 2.5 cm sides and 300 cm length, is
57. **416**
58. 200
59. 240
60. 360
61. If the atmospheric pressure on the surface of an oil tank(sp .gr. 0.8) is 0.1 kg/cm2 , the pressure at a depth of 2.5 m is:
62. 1 metre of water
63. **3 metres of water**
64. 2 metres of water
65. 3.5 metres of water
66. The total pressure force on a plane area is equal to the area multiplied by the intensity of pressure at its centroid, if
67. area is horizontal
68. area is vertical
69. area is inclined
70. **all the above.**
71. If the volume of a liquid weighing 3000 kg is 4 cubic metres, 0.75 is its
72. specific weight
73. **specific gravity**
74. specific mass
75. none of these.
76. Bernoulli's equation assumes that
77. fluid is non-viscous
78. fluid is homogeneous
79. flow is steady
80. **all the above.**
81. Which of the following statement is true?
82. Clays are more porous than sands
83. Pressure of organic matter in a soil decreases the bearing capacity of the soil
84. Aluminous cement is used for foundations in soils with chemical deposits
85. **All the above.**
86. The lateral earth pressure on a retaining wall
87. is equal to mass of the soil retained
88. **proportional to the internal friction of the soil**
89. proportional to the square of the depth of the soil
90. proportional to the depth of the soil
91. The internal molecular attraction of a soil, the cohesion
92. **is more in well compacted clays**
93. decreases as the moisture content increases
94. increases as the moisture content decreases
95. depends upon the external applied load.
96. The quantity of seepage of water through soils is proportional to
97. coefficient of permeability of soil
98. total head loss through the soil
99. neither (a) nor (b)
100. **both (a) and (b).**
101. The depth '*d*' of webs without horizontal stiffeners and consisting of tongue plates is taken lesser than the depth of the girder between the flanges less the sum of the depth of the tongue plates, and
102. six times the sum of the thickness of tongue plates
103. four times the sum of the thickness of tongue plates
104. two times the sum of the thickness of tongue plates
105. **eight times the sum of the thickness of tongue plates**
106. For design of a column the eccentricity of loading shall be taken as the distance from the assumed point of application of the load to the centroid of the column, subject to a minimum of
107. 10 mm
108. 20 mm
109. 30 mm
110. **50 mm**
111. If l is the effective span in meters and D is overall depth of the section in mm, the structure may be accepted after 24 hour load test, provided the maximum deflection in mm less than:
112. 10l2/D
113. 30l2/D
114. 20l2/D
115. **40l2/D**
116. The approximate value of torsion constant *k* for a box of depth *d*, width *b*, and having uniform thickness *t*, is
117. 2dbt/d+b
118. **2d2b2t/d+b**
119. 2dbt2/d2+b
120. 2dbt/d+b2
121. The foundations are placed below ground level, to increase
122. strength
123. stability of structure
124. **in header course next to first brick**
125. all the above.
126. Stud(s) of a common wooden partition:
127. **are vertical wooden members**
128. is the upper horizontal wooden member
129. is the lower horizontal wooden member
130. are the intermediate horizontal wooden members.
131. Pick up the correct statement from the following :
132. inclined borings are made for taking samples under existing structures
133. inclined borings are occasionally used instead of vertical holes.
134. the spacing of inclined borings is kept such that one bore hole is vertically above the bottom of an adjacent bore hole.
135. **all the above..**
136. Pick up the commonly adopted geophysical method in civil engineering from the following
137. the seisomic method
138. electrical resistivity method
139. magnetic method
140. **both (a) and (b) of the above.**
141. In slow sland filters, the turbidity of raw water can be removed only up to
142. **60 mg/litre**
143. 70 mg/litre
144. 90 mg/litre
145. 100 mg/litre
146. Biochemical Oxygen Demand(B.O.D) of safe drinking water must be:
147. **nil**
148. 5
149. 10
150. 15
151. The rate of accumulation of sludge in septic tanks is recommended as
152. 10 litres/person/year
153. **30 litres/person/year**
154. 25 litres/person/year
155. 20 litres/person/year
156. If 2% solution of a sewage sample is incubated for 5 days at 20°C and depletion of oxygen was found to be 5 ppm, B.O.D. of the sewage is
157. 200 ppm
158. 225 ppm
159. **225 ppm**
160. none of these
161. The difference in level between the top of a bank and supply level in a canal, is called
162. berm
163. **free board**
164. height of bank
165. none of these.
166. F.S.L. of a canal at its head with respect to parent channel is kept
167. at the same level
168. **15 cm lower**
169. 15 cm higher
170. none of these.
171. The measure to remove water logging of land, is
172. to reduce percolation from canals and water courses
173. to increase outflow from the ground water reservoir
174. **both (a) and (b)**
175. neither (a) nor (b)
176. Attracting groynes are built:
177. perpendicular to the bank
178. **inclined down stream**
179. inclined up stream
180. none of these.
181. The total length of a valley formed by two gradients - 3% and + 2% curve between the two tangent points to provide a rate of change of centrifugal acceleration 0.6 m/sec2, for a design speed 100 km ph, is
182. 16.0 m
183. 42.3 m
184. **84.6 m**
185. none of these.
186. Traffic engineering only includes
187. planning of regulatory measures
188. design and application of control devices
189. analysis of traffic characteristics
190. **all the above.**
191. For the movement of vehicles at an intersection of two roads, without any interference, the type of grade separator generally preferred to, is
192. delta
193. trumpet
194. diamond interchange
195. **clover leaf.**
196. If the ruling gradient on any highway is 3%, the gradient provided on the curve of 300 metre radius, is
197. 2.00%
198. 2.25%
199. 2.50%
200. **2.75%**
201. The order of booking dimensions is
202. **Length, breadth, height**
203. Breadth, length, height
204. Height, breadth, length
205. None of these.
206. Pick up the item of work not included in the plinith area estimate
207. Wall thickness
208. Verandah area
209. W.C. area
210. **Courtyard area.**
211. Pick up the correct statement:
212. The bent up bars at a support resist the negative bending moment
213. The bent up bars at a support resist the sharing force
214. The bending of bars near supports is generally at 45°
215. **All the above.**
216. The brick work is measured in sq metre, in case of
217. Honey comb brick work
218. Brick flat soling
219. Half brick walls or the partition
220. **All the above.**
221. Frederick W. Taylor introduced a system of working known as of a project, is known
222. line organisation
223. line and staff organisation
224. **functional organisation**
225. effective organisation.
226. Pick up the PERT event from the following
227. Digging of foundation started
228. Digging of foundation completed
229. Laying of concrete started
230. **All the above.**
231. If D is the duration, ES and EF are the earliest start and finish, LS and LF are latest start and latest finish time, then the following relation holds good
232. *EF* = *ES* + *D*
233. *LS* = *LF* - *D*
234. *LF* = *LS* + *D*
235. **all the above.**
236. Final technical authority of a project lies with
237. Assistant Engineer
238. Executive Engineer
239. Superintending Engineer
240. **Chief Engineer.**
241. For the purposed runway stated in if the areodrome reference temperature is 17.2 celcius , then net designed length of the runway is:
242. 2716 m
243. **2816 m**
244. 2916 m
245. 3016 m
246. Pick up the correct statement from the following:
247. Landing speed is directly proportional to the wing loading
248. Wing loading remaining constant, the take off distance is directly proportional to the powder loading
249. Neither (*a*) nor (*b*)
250. **Both (*a*) and (*b*)**