

## **List of Design Problems in Civil Engineering**

### **SUBJECT: DESIGNING ENGINEERING**

#### **SUBJECT CODE: 2130005**

1. Water logging prevention
2. Wetland identification and prevention
3. Salinity prevention
4. Ground water pollution
5. Seepage failure in earthen dam as well as gravity dam and its prevention
6. Inadequate rainfall in arid & semi arid region and finalize its prevention
7. Identification for economically crop water requirement in especially arid and semi arid regions.
8. Storm water pipe line designing.
9. Rainwater harvesting.
10. Measurement of flow device and detection of most suitable out of them.
11. Idealize of infiltration rate for any regions.
12. Detection of best irrigation methods.
13. Flood routing problem.
14. Flood control warning at dam side.
15. Water distribution system in drought.
16. Landslides.
17. Prevention of silt and grit from canal system.
18. Watershed management.
19. Environmental problems related to infrastructure development.
20. Problems in collection and disposal of solid waste.
21. Problems in collection and disposal of hazardous waste.
22. Problems in controlling land pollution.
23. Problems in controlling air pollution.
24. Problems in controlling water pollution.
25. Problems in controlling noise pollution.
26. Problems in industrial safety and risk assessment.
27. Problems in collection and disposal of e-waste.
28. Problems in water purification systems.
29. Problems in waste water purification systems.

30. Problem in coal mining operations in nature.
31. Problem in variations hydrological cycle and its impact on Environment.
32. Problems in using conventional energy sources.
33. Problem in water quality assessment.
34. Problem in air quality assessment.
35. Problem due to human overpopulation in environment.
36. Problems due to climate change in nature.
37. Problems due to environmental disaster.
38. Problems due to resources depletion.
39. A case study of a proposed construction project for its Environmental Impact Assessment.
40. A case study on Environmental Audit of any existing industry.
41. Green Building – A case study.
42. Study of concept of Green Building – Justification of various parameters considered in the concept.
43. Study of Eco friendly Building materials.
44. Eco friendly alternatives of conventional bricks as a basic building material.
45. Management of biomedical waste – A case study
46. Development of dumping sites (Landfill sites)
47. Recycling of construction waste.
48. Management of E- Waste.
49. Air pollution monitoring – a case study using exhaust gas analyzer
50. Land pollution – A case study of an industry waste.
51. Hazardous solid waste management.
52. Study of Environmental By Laws.
53. Unconventional Energy resources – solar, wind, Water.
54. Carbon Foot print – A conceptual study.
55. Soil remediation methods.
56. Study of water quality – A case study of a particular region.
57. Study based on development of Effluent Treatment Plant.
58. Noise pollution monitoring.
59. Environmental effects due to use of pesticides.
60. Pollution of a river. –A case study

61. Green House gases Generation Problems Effects Preventions solutions and Remedies.
62. Concept of SMART CITY...How far eco friendly?
63. Parking study on urban road.
64. Site characterization and monitoring for highway engineering problems.
65. Improvement of signalized intersection.
66. Improve condition of unsignalized intersection.
67. Accident study on urban road.
68. Accident study on highway.
69. Problems in public transport system.
70. Problems in city wise transport plan.
71. Comparative study between BRTS and AMTS.
72. Effect of traffic problem on environment.
73. Groundwater problems in highway engineering.
74. Signal coordination between urban intersections.
75. Use of waste materials for road pavement.
76. Road safety current scenario.
77. Obstructions and road works on roads and highways.
78. Survey and analysis of road pavement failure.
79. Problem on road side drains and its improvement.
80. Providing truck terminals on urban area.
81. Congestion study on urban area.
82. Problems on using mixing of traffic.
83. Effectiveness of road signs on highway.
84. Effect of land use on transportation system.
85. Impact of land use after implementation of BRTS.
86. To provide safe pass over or walkway at Andhjan mandal during peak hour
87. Traffic congestion solution at AEC crossroad, Naranpura, Ahmedabad
88. Traffic congestion solution at AEC crossroad at shivranjani, shyamal upto jivrajpark on 132 feet Ring Road, Ahmedabad.
89. Solving AEC to sattadhar traffic problem due to provision of BRTS Route at Ahmedabad
90. Sky walk/ Under pass on 132 feet ring road at Ahmedabad
91. Feasibility to use crum rubber in flexible pavement

92. Feasibility study of BRTS route of various stretches ( Any one stretch can be selected from urban area)
93. Traffic congestion solution at Akhbarnagar circle, Ahmedabad
94. Feasibility study of providing signalized intersection at Akhbarnagar Rotary intersection
95. (Any rotary intersection can be selected as study area)
96. Feasible solution for rain water accumulation in Underpass
97. Traffic lane management and implementation ( Can be selected any main street of any Urban area)
98. Parking management system at heterogeneous intersection
99. Traffic diversion network during construction activity for long duration (e.g. construction of metro route or any other) Problem in increasing seismic strength of building in long time.
100. Problem in increasing seismic strength of building in long time.
101. Problem in increasing strength of building (RCC and STEEL) under cyclic loading.
102. Problems arising in substructure due to sudden increase in ground water table.
103. Problems arising for piling process in under sea.
104. Problems in structure if foundation is constructed on black cotton soil.
105. Problems in constructing a building with height 1000m (high rise) compared to 15m (low rise).
106. Problems to minimize the construction cost of housing considering earthquake and wind effects and structural design and construction materials.
107. Problems caused in manufacturing and use of following in construction industry:
108. Light weight concrete
109. Transparent concrete
110. Problems arising in superstructure due to sudden increase in ground water table.
111. Problems caused by casualties on river over bridge.
112. Problem to find possibilities of replacing structural steel by composite plastic sections in low rise roof construction.
113. Problem regarding design and construction of road over Water Bridge.
114. Special consideration for designing a nuclear power plant.
115. Problem to develop a foldable / collapsible type shuttering system/scaffolding system for bridge.

116. Problem to identify economical method to restrengthen a small bridge culvert.
117. Problem to identify possibility of replacement of aggregate by combined product of plastic waste, digital waste and high strength rubber.
118. Problem to develop a portable or foldable small house for rescue operation at the time of causalities.
119. Problem to develop portable bridge to cross river up to 25 m length for rescue operation.
120. Problem to identify various uses of glass in structural purpose for various environments.
121. Problem faced in use of cement in concrete, concrete precast unit, plaster.
122. Problem due to improper ingredients of concrete.
123. Problems due to improper grading of concrete.
124. Problems of micro cracking in concrete.
125. Problems found in fresh concrete.
126. Problems found in concreting near seashore.
127. Problems found in mixing, transporting and laying of concrete in rural and urban area.
128. Problems occurring during curing and hardening of concrete.
129. Problems found in concrete in aggressive environment.
130. Problems found in mass concreting.
131. Problems of hardened concrete improper planning.
132. Problems due to improper mix design of concrete.
133. Problems of construction site of civil engg structures without proper site investigation of topography.
134. Problems of pre/post construction of foundation of structures.
135. Problems in earth retaining structures.
136. Problems occurred in maintenance of earth structures.(Farm ponds, lakes, canals, earth dams)
137. Correction of soil from different sites for construction from different area.
138. Solving problems of drainage during heavy rainfall in city area.
139. Problems of suddenly sliding of sloping land during rain come up flood due to melting of snow.
140. Seepage problems of reservoir on upstream side near village of city.
141. Settlement problems of highways in rural & urban area.
142. Problems of construction in absence of proper site investigation.

143. To find out solution of underground water without proper geological investigation.
144. Problems in design & construction of storage reservoir in rural & urban area.
145. Problems phase in planning of surface reservoir without study of permeability & seepage.
146. Problem arising in concealed conduit below ground level followed by failure, eventually damage.
147. Problem arising while excavation in urban area followed by damage electric line.
148. Compaction problem (refilling) of excavated soil when it is compacted.
149. Case study: Failure of earthen dam, due to human mistake.
150. Problem arising in construction due to wrong assessment of bearing of soil below the foundation level.
151. Piping phenomena of soil & liquefaction of soil.
152. Failure in selection of site for collection of underground water from upstream side of hilly area.
153. Uneven settlement in the ground level of society.
154. Sudden deep cracks on land in residential zone.
155. Settlement due to earth-quake.
156. Problems in filling earth in low level areas of construction site.
157. Problems of stability of earth rock.
158. Problems in landslides in hilly areas.
159. Problems faced during and after pile driving.
160. Village sanitation system
161. Low cost roofing tiles
162. A laboratory study on the utilisation of red mud in pavements and as building material
163. Planning and designing of low cost school buildings
164. Labour optimisation in earth work
165. Low cost light weight roofing tiles
166. Fly ash concrete door shutters
167. Fly ash mosaic flooring tiles
168. A case study of occupational hazards of asbestos industries
169. Design of eco-friendly home for conservation of energy development of masonry mortar using limestone polished slurry and cement
170. Development of b.c soil stabilised building blocks using lime fly ash
171. Brick masonry building model with seismic bands under the action of base motion
172. Waste plastic fibre reinforced concrete with polymers-turning pollution to solution

173. Low cost bricks making
174. Appropriate technology to manufacture common building burnt brick
175. Quality study of sewage in davangere district
176. Suitability of beach sand as fine aggregate for concrete
177. Development of insulation bricks using fly ash & waste materials from silica mines
178. Resistance of waste plastic fibre reinforced concrete under acid and alkali test
179. Domestic water treatment plant
180. Stabilization of soft soils using industrial wastes
181. Design of economical formworks and scaffolding for concrete structures
182. Behaviour of filler slab in low cost housing
183. Strength and elastic property characterisation of concrete block masonry
184. Cost effective technology on masonry arch lintel using concrete bricks of ceramic wastes
185. A comprehensive approach for analysis and design of an multi-storeyed building
186. Improving the strength of sub grade using building debris
187. Better management practices (bmps) of shrimp farming in coastal region
188. Design of conveyance system for construction materials
189. Studies on rat trap bond masonry using stabilized mud blocks
190. Load carrying capacity of masonry vaults- experimental investigation on scaled masonry
191. Study on strength behaviour of concrete using foundry dust in fine aggregate
192. Geopolymer mortar
193. Geopolymer concrete
194. Rice husk ash concrete blocks
195. Master planning for developing an underdeveloped area for Ahmedabad district.
196. Mix design and strength characteristics of reactive powder concrete
197. Composite r.c.c and brick slabs with shear reinforcement
198. Water proof course
199. Composite r.c.c and brick slabs with shear reinforcement
200. Plasting material
201. Analysis of textile mill for renovation of market at Raipur (Ahmedabad).
202. Problems for study of old heritage at old city in Ahmedabad.

203. Problems for study of increase service life of old heritage at old city in Ahmedabad.
204. Study of all Ahmedabad gates with material & technology.
205. Study of Old residential area convert in commercial market at old city with problem
206. Study of renovation of old theatre into commercial market at old city
207. Study of low cost school building for rural area.
208. Study of renovation of all municipal schools.
209. Problem for civil hospital building at asarva municipal hospital
210. Extension of old production plant at arvind mill to new denim department.
211. Redevelopment of land after completion of brick for agriculture purpose.
212. J. K. White cements putty material used for cladding tiles.
213. Settlement of foundation in load bearing structure.
214. Settlement of foundation in frame structure.
215. Cracks in walls of both type of structure.
216. Settlement of surrounding pavement and ground.
217. Water proofing to slab.
218. Water proofing to wall
219. Problems of roof in rural area.
220. Problems of one storey building for market offices.
221. Problems in use of cement.