



**MBX-8193**

Seat No. \_\_\_\_\_

**B. Architecture (Sem. VI) (ATKT) Examination**

**December – 2016**

**Environmental Science & Service-IV**

Time : 3 Hours]

[Total Marks : 160

**SECTION - I**

*(Landscape Architecture)*

- 1 Explain your understanding of landscape elements in detail like land, water, vegetation, etc. 15

**OR**

- 1 Explain behavior of land, water, vegetation in following natural settings : (any **three**) 15

- (a) Desert
- (b) Ravine Land
- (c) Lakes
- (d) Mangroves
- (e) Scrub Land.

- 2 Explain the following topics in terms of design values with supporting description and sketches (any **four**) 20

- (i) Lighting
- (ii) Water
- (iii) Seasonal Variations
- (iv) Site Planning
- (v) Existing Site Conditions

- 3 Explain the following terms graphically. (any **five**) 15

- (i) Spot Elevation and Benchmark
- (ii) Angle of repose
- (iii) Ridge and Valley
- (iv) Confined Aquifer and Unconfined Aquifer
- (v) Swale
- (vi) Drainage Pattern

- 4 Calculate annual surface runoff water quantity for an institutional building of around 1000 sq.mts. Hard surface area of 500 sq.mts, Semi soft surface area of 200 sq.mts and Soft surface area of 300 sq.mts. Design a rainwater harvesting tank with 10% liters storage capacity. Annual rainfall of Rajkot is 800 mm. 15
- Runoff co-efficient for various surfaces :
- Hard paved (RCC / tiles) -0.9
  - Soft paved (Brick paving / Mangalore tiles / compacted earth) - 0.7
  - Soil (Lawn/ Open soil)- 0.5
- 5 How Plant material works in the following conditions 05
- Sketches : (any **five**)
- (i) for Screening
  - (ii) in Avenues
  - (iii) as a Physical Barrier
  - (iv) as a Visual Barrier
  - (v) as a Focal point
  - (vi) for Softening built forms
- 6 Match the following : 10
- |                       |                 |
|-----------------------|-----------------|
| (i) Foliage           | (a) Lotus       |
| (ii) Grasses          | (b) Lawn        |
| (iii) Palm            | (c) Garmado     |
| (iv) Succulents       | (d) Money Plant |
| (v) Flowering Tree    | (e) Peepal tree |
| (vi) Sculptures plant | (f) Bamboo      |
| (vii) Bulbous plant   | (g) Alovera     |
| (viii) Climber        | (h) Champa      |
| (ix) Creeper          | (i) Areca       |
| (x) Aquatic           | (j) Spider Lily |

**SECTION - II**  
**(H.V.S.C.)**

**Instruction :** Attempt any **four** questions

1. What is Psychometric Chart? Explain the term Dry bulb temperature, Wet bulb temperature, Dew Point temperature, humidification and sensible heating by figures of the Chart. **20**
  2. Enumerate various components of Window air conditioner and explain in detail the functioning of each of them. **20**
  3. Discuss various materials, shapes and construction of duct for air conditioning applications. **20**
  4. Give the various classification of air conditioning system. **20**
  5. Explain the method for calculation of heat load for a small residential building. **20**
  6. Explain the term : **20**
    - (1) Cooling tower
    - (2) Wet-bulb temperature
    - (3) Air Handling Unit (AHU)
    - (4) Refrigerant
    - (5) Return air duct.
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