



DAS-161001010406

Seat No. _____

B. Arch. (Sem. IV) Examination

May - 2022

Environmental Sciences & Services - II

Time : 2 Hours]

[Total Marks : 50

- Instructions :**
- (1) Critical understanding of subject is the criterion of assessment
 - (2) Support your statement with examples/sketches wherever necessary.
 - (3) Assume appropriate data wherever necessary.
 - (4) Attend all Five (05) questions, each having equal weightage of Ten (10) Marks

1 Attend any Ten (10), each having equal weightage of one (01) Mark.

- (1) 'South Direction' is considered to be the 'Best direction' for receiving 'Constant & Uniform Daylight' in Rajkot - True or False.
- (2) Overcast / Cloudy Sky' will offer best 'Daylight' -True or False.
- (3) Daylight coming from the 'Wider Opening' will penetrate more, in compare of 'Longer Opening' -True or False.
- (4) Which lighting fixture has comparatively longer life span - CFL or LED?
- (5) Which type of Switchboard, Bathroom should have: Low-board @ 1.00 Mt. height or High-board @ 1.50 Mt. heights?
- (6) What ampere supply, Air-Conditioner must have - 5 Amp or 15 Amp ?
- (7) Water consumption 'Per Person per Day' in normal condition is _____ liters.
- (8) For Residence, Dia. for 'End-point supply' is usually _____ mm.

- (9) Slope for Bathroom floor usually should be 1 :_____.
- (10) Discontinuing the Oxygen supply can stop the active fire
- True or False.
- (11) For 'Fire-Detection', Smoke detectors are known as - 'Electric
Nose' or 'Electric Eye'?
- (12) Minimum width for 'Main Stair' for 70 Mts. tall
building, must be _____ Mts.

2 Daylight & Natural Lighting : Attend any One (01)

- (1) Discuss the 'Importance of Orientation' with respect to
'Daylight & Natural Lighting' and explain the same for
Residential building.
- (2) Discuss the importance of 'Daylighting' for Museum building
and elaborate different strategies for admitting & controlling
the same.
- (3) Discuss the merits & demerits of 'Long/Vertical openings'
v/s 'Wide/horizontal openings' for Living room, with respect
of Daylight.

3 Artificial Lighting & Electrification : Attend any One (01)

- (1) Discuss the 'Importance of Artificial Lighting' for Mall
building and elaborate different types of 'Lighting Fixtures
& Methods' for the same.
- (2) Discuss the 'Functional Lighting' v/s 'Aesthetical Lighting'
for Residential building, with respect of Artificial Lighting.
- (3) Discuss the 'Components of Electrification System' for
functional & aesthetical lighting, for Residential building.

4 Plumbing & Drainage : Attend any One (01)

- (1) Discuss the 'Criteria of Good Bathroom Design' for :
 - Bathroom (having 2.40 Mts. width, 3.00 Mts. depth,
3.00 Mts. height), having sunken slab, located on
intermediate floor of Residential building

- Bathroom must have Wash-basin, European W.C., Bath-tub or showercubical, along with other essential-supportive 'Dry Fixtures', as required
 - Assume other relevant data as suitable i.e. masonry, opening, ventilation, pipe inlets & outlets, etc.
 - Illustrate your design with neat & appropriate drawings/sketches
- (2) Discuss the relevance of using 'PVC Fittings & Fixtures' for Plumbing & Drainage system and explain any Three (03) elements in detail.
 - (3) Discuss 'Water-tank, Septic-tank, and Soak-pit', as a Cast-In-Situ element in Plumbing & Drainage system for Residential building.

5 Fire-fighting & Protection : Attend any One (01)

- (1) Discuss the 'Importance of Passive Safety Aspects' with respect to 'FireFighting & Protection' and explain the same for Public Institute building.
- (2) Discuss the importance of 'Active Safety Aspects' for Auditorium building and elaborate different method & systems for the same.
- (3) Discuss the 'Components of Automatic, Fixed, Water-based Fire-Fighting System' for 70 Mts. tall Commercial building.
