



**AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)**

**Department of CSE**

**Computer-Aided Design and Drafting**

**Section: L**

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**1.**

1. Lux to Watt Conversion :-

Here,  
Illumination for Bedrooms (General),  $E_v = 70 \text{ lx}$   
Surface area,  $A = 81 \text{ ft}^2$   
Luminous efficacy in lumens per watt,  $\eta = 90 \text{ lm/w}$

Lux to Watt conversion formula :-

$$P_{(W)} = 0.09290304 \times E_v (\text{lx}) \times A (\text{ft}^2) / \eta (\text{lm/w})$$
$$\therefore P_{(W)} = 0.09290304 \times 70 \times 81 / 90$$
$$= 5.85280152 \text{ W}$$

Ans:-

Handwritten notes and calculations are visible in the background of the paper, including formulas for luminous flux and efficacy.

2.

Table-8.1.18 : Minimum Number of 13 A flat pin socket outlets

Location	No. of Switch Socket Outlets
Bed room	2
Living room	3
Drawing room	3
Dinning room	1
Toaster/Snack toaster	1
Kitchen	1
Bathroom	1
Vercandah	0
Refrigerator	1
Air-conditioner	1
	One for each room

Table - 8.1.20 : Recommended Fan Sizes in Rooms

Room Area( $m^2$ )	Fan Sweep
Up to 6	915 mm
Over 6 to 9	1220 mm
Over 9 to 12	1442 mm

3.

Table-8.1.24° Recommended Area for Standby Generator Room

Capacity (kW)	Area (m²)
1×25	20
1×48	24
1×100	30
1×150	36
1×300	48
1×500	56

AC calculation (Walton Website) :

- Condition :
1. Room Size — 58.6 sf
  2. Number of Wall Exposed to sunlight - 1
  3. Wall Type — Facebrick
  4. Room Position — Top Floor
  5. Number of Window — 1
  6. Number of Door — 1
  7. Number of People — 1

Result : Recommended Air Conditioner Capacity.  
1 Ton .