Bangladesh University of Engineering and Technology

Department of Electrical and Electronic Engineering

Course Number: EEE 414

Course Title: Electrical Services Design

Project Submission

Group: 08

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Light Fan Calculations:

2nd Floor:(All Values are Equal for Both Apartments) :

Formula for Light Bulbs:

$E=\frac{n*N*F*LLF*UF}{A}$ $where\ A\ in\ m^2$

One 56" diameter fan is needed every 100 sqft.

Number of Fans= $\frac{A}{100}$ $(A\ in\ sqft)$

Drawing Room:

Area= 90.83 sqft = 8.44 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.965

So, 1 Light Bulb and 1 Tube Light are needed(Two Lights are added considering Drawing Room)

No of Fans= 0.91

So, 1 Fan is Needed.

Dining Space:

Area= 173.42 sqft= 16.11 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.84

So, 2 Light Bulb and 1 Tube Light are needed.

No of Fans= 1.732

So, 2 Fans are Needed.

Living Space:

Area=119.17 sqft=11.071 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.27

So, 1 Light Bulb and 1 Tube Light are needed.

No of Fans= 1.1917

So, 1 Fan is Needed.

Master Bedroom:

Area=163.48 sqft= 15.188 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.74

So, 2 Light Bulbs and 1 Tube Light are needed.

No of Fans= 1.52

So, 2 Fans are Needed.

Bedroom 1:

Area= 87.88 sqft = 8.16 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.93

So, 1 Light Bulb and 1 Tube Light are needed.

No of Fans= 0.816

So, 1 Fan is Needed.

Toilet 1:

Area= 27.29 sqft = 2.54 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.29

So, 1 Light Bulb is needed.

Toilet 2:

Area=12.82 sqft=1.19 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.136

So, 1 Light Bulb is needed.

Toilet 3:

Area= 35.09 sqft = 3.26 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.373

So, 1 Light Bulb is needed.

Toilet 4:

Area=18.3 sqft=1.70 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.194

So, 1 Light Bulb is needed.

Kitchen:

Area=55.45 sqft= 5.15 m^2

Illuminance, E= 200 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.17

So, 1 Light Bulb is needed.

1 Exhaust Fan is needed.

Corridor and Staircase:

Area= 44.33 sqft+ 96.75 sqft=

141.08 sqft=13.11 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.1

So, 2 Ceiling mounted Lights are needed to cover such a long space and stairs.

Staircase:

1 Ceiling mounted Lightbulb is needed.

Balcony 1:

Area= 35.83 sqft= 3.33 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.27

So, 1 Light Bulb is needed.

Balcony 2:

Area= 33.3 sqft=3.09 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.25

So, 1 Light Bulb is needed.

Lift:

Area=35.07 sqft = 3.26 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N=0.373

So, 1 Light Bulb is needed.

1st Floor

Drawing Room:

Area= 90.83 sqft = 8.44 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.965

So, 1 Light Bulb and 1 Tube Light are needed(Two Lights are added considering Drawing Room)

No of Fans= 0.91

So, 1 Fan is Needed.

Dining Space: (Right Apartment)

Area= 239.1 sqft= 22.213 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 2.53

So, 2 Light Bulb and 1 Tube Light are needed(On Average)

No of Fans= 2.22

So, 2 Fans are Needed(On Average).

Dining Space: (Left Apartment)

Area=106.08 sqft=9.86 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.13

So, 1 Light Bulb and 1 Tube Light are needed(On Average)

No of Fans= 0.986

So, 1 Fan is Needed(On Average).

Living Space: (Right Apartment)

Area=119.17 sqft=11.071 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.27

So, 1 Light Bulb and 1 Tube Light are needed.

No of Fans= 1.1917

So, 1 Fan is Needed.

Living space: (Left Apartment):

Area=119.17-12.82 sqft=106.35 sqft= 9.88 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.13

So, 1 Light Bulb and 1 Tube Light are needed(On Average)

No of Fans= 0.988

So, 1 Fan is Needed(On Average).

Master Bedroom: (Both Apartment)

Area=163.48 sqft= 15.188 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.74

So, 2 Light Bulbs and 1 Tube Light are needed.

No of Fans= 1.52

So, 2 Fans are Needed.

Bedroom 1:(Right Apartment Only)

Area= 87.88 sqft = 8.16 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.93

So, 1 Light Bulb and 1 Tube Light are needed.

No of Fans= 0.816

So, 1 Fan is Needed.

Bedroom 2: (Right Apartment Only):

Area= 91.47 sqft = 8.5 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.97

So, 1 Light Bulb and 1 Tube Light are needed.

No of Fans=. 85

So, 1 Fan is Needed(On Average).

Toilets for Right Apartment :

Toilet 1:

Area= 27.29 sqft = 2.54 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.29

So, 1 Light Bulb is needed.

Toilet 2:

Area=12.82 sqft=1.19 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.136

So, 1 Light Bulb is needed.

Toilet 3:

Area= 35.09 sqft = 3.26 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.373

So, 1 Light Bulb is needed.

Toilet 4:

Area=18.3 sqft=1.70 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.194

So, 1 Light Bulb is needed.

Toilet 5:

Area=17.42 sqft= 1.62 m^2

Illuminance, E=100 Lumen/m^2

Light Loss Factor and Utilization Factor, LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.185

So, 1 Light Bulb is needed.

Toilets for Left Apartment:

Toilet 1:

Area= 27.29 sqft = 2.54 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.29

So, 1 Light Bulb is needed.

Toilet 2:

Area=11.52 sqft=1.07 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.13

So, 1 Light Bulb is needed.

Toilet 3:

Area=12.82 sqft=1.19 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.136

So, 1 Light Bulb is needed.

Toilet 4:

Area=18.3 sqft=1.70 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.194

So, 1 Light Bulb is needed.

Kitchen:(Both Apartment)

Area=55.45 sqft= 5.15 m^2

Illuminance, E= 200 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.17

So, 1 Light Bulb is needed.

1 Exhaust Fan is needed.

Corridor and Staircase:

Area= 44.33 sqft+ 96.75 sqft=

141.08 sqft=13.11 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.1

So, 2 Ceiling mounted Lights are needed to cover such a long space and stairs.

Staircase:

1 Ceiling mounted Lightbulb is needed.

Balcony 1: (Both Apartment)

Area= 35.83 sqft= 3.33 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.27

So, 1 Light Bulb is needed.

Balcony 2: (Right Apartment Only)

Area= 33.3 sqft=3.09 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.25

So, 1 Light Bulb is needed.

Balcony 3:(Right apartment only)

Area= 34.56 sqft=3.21 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.2568

So, 1 Light Bulb is needed.

Lift:

Area=35.07 sqft = 3.26 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N=0.373

So, 1 Light Bulb is needed.

Ground Floor:

APARTMENT PART:

Drawing Room:

Area=90.83 sqft= 8.44 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.965

So, 1 Light Bulb and 1 Tube Light are needed.

No of fans=0.844

So, 1 fan is needed.

Master Bedroom :

Area=163.48 sqft= 15.19 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.736

So, 2 Light Bulbs and 1 Tube Light are needed.

No of fans=1.51

So, 2 fans are needed.

Dining Space:

Area=173.43 sqft= 16.11 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.84

So, 2 Light Bulbs and 1 Tube Light are needed.

No of fans=1.611

So, 2 fans are needed.

Living Space:

Area= 115.47 sqft= 10.73 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.23

So, 1 Light Bulb and 1 Tube Light are needed.

No of fans=1.073

So, 1 fan is needed.

Balcony 1:

Area= 35. 84 sqft= 3.329 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.266

So, 1 Light Bulb is needed.

Toilet 1:

Area=27.29 sqft = 2.535 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.289

So, 1 Light Bulb is needed.

Toilet 2:

Area=12.82 sqft = 1.19 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.136

So, 1 Light Bulb is needed.

Toilet 3:

Area= 35.09 sqft = 3.259 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.372

So, 1 Light Bulb is needed.

Kitchen:

Area=55.45 sqft= 5.15 m^2

Illuminance, E= 200 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.17

So, 1 Light Bulb is needed.

1 Exhaust Fan is needed.

Corridor and Staircase:

Area= 44.33 sqft+ 96.75 sqft=

141.08 sqft=13.11 m^2

Illuminance, E= 70 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.1

So, 2 Ceiling mounted Lights are needed to cover such a long space and stairs.

Staircase:

1 Ceiling mounted Lightbulb is needed.

Lift:

Area=35.07 sqft = 3.26 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N=0.373

So, 1 Light Bulb is needed.

Garage part

Guard Bedroom :

Area=24.406 sqft=2.267 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.259

So, 1 Light Bulb is needed.

No of fans=0.2267

So, 1 fan is needed.

Toilet 1:

Area=21.2014 sqft = 1.967 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 0.226

So, 1 Light Bulb is needed.

Generator Room:

Area= 103.508 sqft= 9.62 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 1.099

So, 1 Light Bulb is needed.

No of fans=0.962

So, 1 fan is needed.

Garage(Car Parking):

Area= 730.79 sqft = 67.89 m^2

Illuminance, E= 100 Lumen/m^2

Light Loss Factor and Utilization Factor,

LLF*UF=0.7

Number of Lights per illuminaire, n=1

Flux= 1250 Lumen (20 W Energy Saving Bulb and Fluorescent Tubelight)

Number of Lights, N=?

Calculating from the above formula, N= 7.758

So, 8 Light Bulbs and 1 Tube Light are needed.