American International University-Bangladesh (AIUB)
Faculty of Engineering

Course Name:	COMPUTER AIDED DESIGN AND DRAFTING	**Course Code:**	BAE 2101
Semester:	Summer 2019-2020	**Section:**	F
Faculty:	Fakhruzzaman Arif	**Assignment No:**	2
Assignment Name:	**OBE Assignment (CO2 & CO4)**		
Submission Date:	**08-09-2020, Tuesday (till 10:00 pm)**		

Category	Excellent	Good	Acceptable	Secured Marks
Civil Plan	The civil plan is unique and drawn as per requirements with proper dimensions [7-10]	The civil plan is drawn partially as per requirement with minor errors [4-6]	The civil is either copied or very poor with major errors. [1-3]	
Electric Fittings	The fittings are placed rationally and maintaining BNBC [4-5]	The fittings are placed rationally but not maintaining BNBC [2-3]	The fittings are placed randomly and not maintaining BNBC [1]	
Conduit Layout	The conduit layout is done properly maintaining color code and standard connection practices. [4-5]	The conduit layout is done maintaining color code but not maintaining standard connection practices [2-3]	The conduit layout is not done maintaining color code and standard connection practices. [1]	
Load Calculation	The load calculation is done correctly according to BNBC. [4-5]	The load calculation is done according to BNBC but with minor errors [2-3]	The load calculation is done not according to BNBC with major errors [1]	
Generator Capacity and Generator Room	The generator is chosen properly, and the generator room is designed according to BNBC [4-5]	The generator is chosen properly but the generator room is not designed according to BNBC [2-3]	The capacity of the generator chosen is wrong and also the generator room is not designed according to BNBC [1]	
Comments			Total Marks: (Out of 30 Marks)	

SL #	ID	Student Name	Department	Marks
1.				
2.				
3.				
4.				
5.				

*** *You can follow the attached sample but don't take it as reference. Less than 5 % (approx.) of total sft is acceptable.*

Question # Mr. X & Mrs. Y have purchased a land of 4 Kathas from **Navana Housing Ltd.** which is located at Bashundhara R/A, Dhaka. Now they want to construct a 5 Storied building (**Ground + 5 Floors**) of having 3 units – A, B & C in each floor. You are asked to design for only A unit flat of having **1250 sq-ft** (approx.) based on the following specifications:

- *3 Bed Room (size: Bed-1 (master Bed) is 12' x 12'6", Bed-2 is 12' x 10', Bed-3 is 10' x 10'6")*
- *3 bath (Size: Attached bath of Bed-2 is 5'6" x 5', bath of Bed-1 is 6' x 5', Common Bath is 6' x 4')*
- *Living/Drawing (Size: 14' x 10')*
- *Dining*
- *Kitchen (Size: 8' x 8')*
- *2 Veranda (Size: Ver_Bed-1 is 6'6" x 3', Ver_Bed-2 is 5'6" x 3')*
- *Door for kitchen / bathroom / veranda - 2'6", Door for Bed Room - 3' and Main Door 4' (interior to interior)*

Considering the abovementioned specifications do the following using AutoCAD 2007 Software:

i) **Draw the Civil Plan** of the flat along with **stair, lift** and **lobby (Space: 20*′ x 14′*, *which is excluded from the flat size*)**.** [*Hints: Brick to interior/exterior Offset distance = 5″, Stair Offset distance = 5″]. **10 points**

ii) **Draw** the **proper Electric Fittings (applying BNBC)** **5 points**

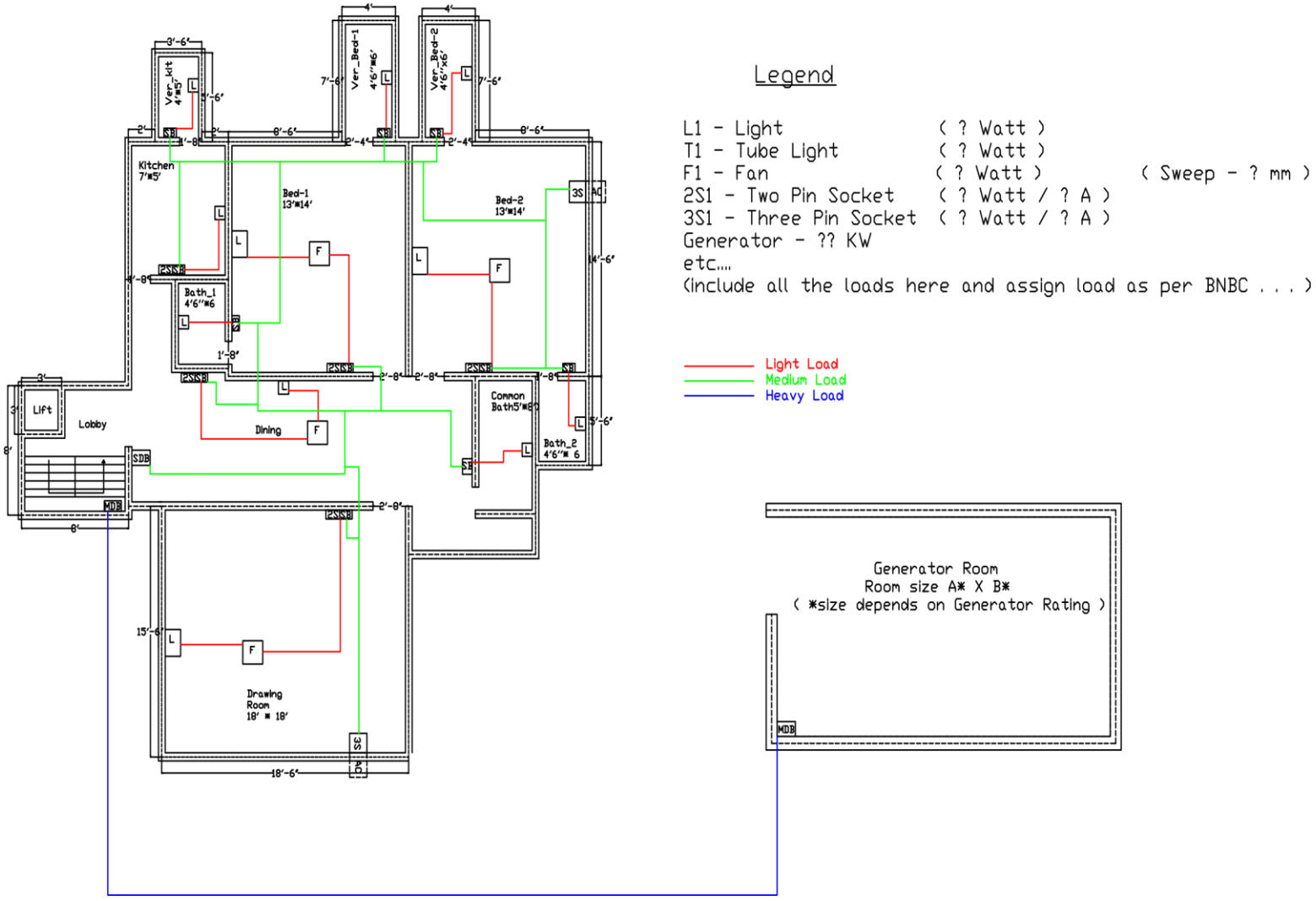
iii) **Draw** the **electric conduit layout (Wiring – applying BNBC)** where **Red, Blue & Yellow color** represents **light load, medium load & heavy load** respectively. **5 points**

iv) **Calculate** the **load** for **Unit A** only. Also **Calculate** the **load** for each **floor** and **load for the building** considering all the flat types are same and same types of load. **5 points**

v) **Calculate** the **capacity** of the **Generator** based on the load calculation. **Draw** a separate **Generator room** and **show** the connection with distribution board. **5 points**

*** *You can follow the attached sample but don't take it as reference. Less than 5 % (approx.) of total sft is acceptable.*

Sample Drawing



Load Calculation:

Suppose there are total 5 lights of 40 Watt and 3 Fan of 80 Watt, so total load should be (5 x 40) + (3 x 80) or, 440 Watt. Similarly, include all the loads and calculate the **load** for **one unit**. Then, calculate the **load** for **a floor** just multiplying total loads of one unit with number of units in each floor and calculate **total load** for the **building** just multiplying the number of floors (ignoring ground floor).

**** You can follow the attached sample but don't take it as reference. Less than 5 % (approx.) of total sft is acceptable.*