EEE/ECE 207 (Electronic Devices & Circuits II)
Department of EEE, Brac University

Summer 2020 **Date Due: 21.07.20 (by 8:00 PM)**

Term Project - 1

Design a Dimmer Circuit for a 12V 18W DC lamp using an op amp in open loop connection. Design the dimmer circuit so that it is able to vary the intensity of the lamp from 10% to 90% of its full intensity.

Provide complete design with all the design steps for each of the stages of the Dimmer Circuit including that for the variable dc supply.

Assume the input voltage to the non-inverting terminal of the op amp, $v_2 = 10\ V_{p\text{-}p}$ ac sinusoid.

Modify your design so that it can be used to control the intensity of a 220V 100W ac lamp.

Provide minimum specifications (current, voltage, power) required for each of the components used in your design.

[Guidelines:

The project should be done in a group of three.

The Report must include the following sections:

1. Objective
2. Design Methodology
3. Design and Analysis
4. Comments and Conclusions

The report will be graded out of 100 with each of the above mentioned points having their allocated marks. Clarity of presentation will carry 20% of total marks.

Provide clear justifications for all the assumptions made in the design process.

Report should contain a **cover page**, mentioning *Course Name & Code*, *Semester & Year*, *Section No.*, *Students name*, *ID*, *Instructor's name*, and *Date of submission*.

Reports should be written in ***a clear hand writing*** or should be ***typed***.

Reports must be submitted by **July 21, 2020 by 8:00PM**.

Failure to follow the above mentioned guidelines will result in reduction in marks.

Late submission: 20% deduction in marks for each day.