

**Electronics II (EEE 232)****Assignment # 04, BS (EE) - IV, Fall 2014**

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**Total Marks: 25****Deadline: 1130 Hours, Monday, December 21, 2014.****Instructions:**

- The solved assignment should be submitted by due date to the class representative and no assignment will be accepted individually and after the specified deadline. Failure to submit the assignment by due date will lead to the assignment score of 0 points.
- This assignment has to be done individually and marks will be awarded accordingly.
- Copying & plagiarism is prohibited and will be dealt strictly. In case of copying, the assignment will be cancelled and awarded 0 marks. **Submit a hand written assignment.**
- All the explanatory answers must be in your own words. Do not copy/ paste the exact text from the source. **Provide references where necessary.**

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- a) What changes are required to make the duty cycle of an astable multi-vibrator below 50 %? **(5)**
  - b) What is the piezoelectric effect? Explain this effect in connection with the crystal oscillator. Draw a crystal oscillator using an Op-amp and identify its salient features. **(10)**
  - c) Explain why a *class C* amplifier is not used as a power amplifier. **(5)**
  - d) What is harmonic distortion? Explain it with reference to the power amplifiers. Give a mathematical expression for % nth harmonic distortion. **(5)**