

NAME: _____

**AEM 4550: ECONOMICS OF ADVERTISING
CORNELL UNIVERSITY
PROFESSOR JURA LIAUKONYTE**

Show all work. Write legibly.

Calculators permitted.

No computers.

Points:	Possible	Obtained
Total	100	

1. (Total 22 points) Search Engine Optimization

Campusfood.com is an online ordering system that allows students to place meal orders online from several local restaurants. Campusfood.com charges a certain percentage fee from the restaurants for every order placed through its website. Campusfood.com advertises with online search engines. Suppose that you were given the information in **Table 1** about the two keywords that Campusfood.com has purchased.

Table 1

Publisher	Keyword	Click Charges	Number of Impressions	Number of Clicks	Number of Transactions	Total Revenue
Google	"order pizza online Ithaca"	\$0.90	448	13	1	\$4.29
Bing	"food delivery Ithaca "	\$1.75	722	42	2	\$8.44

a) **(17 points)** Calculate the following key metrics of an advertising campaign and fill in the **Table 2** on the next page. You have to either (1) show all work so I can see where you got your reported numbers or (2) give formulas for the following metrics (which will be a function of the metrics in **Table 1**).

- Cost-per-Click (CPC)
- Click-Through Rate (CTR)
- Transaction Conversion Rate (TCR)
- Net Revenue
- Return on Ad \$ Spent (ROA)
- Average Revenue per Transaction
- Probability of Transaction
- Cost per Transaction

b) **(5 Points)** Which metric(s) indicate the relative efficiency of the publisher? What would you recommend to Campusfood.com in terms of their advertising strategy and why?

2. **(Total 25 points)** *Brand Equity*

a) **(18 points)** Calculate the brand equity of the “OAKLEY” brand keeping in mind the following simplifications and assumptions:

- Financial forecast for the next three years is sufficient for the brand equity analysis
- Discount rate = 11%
- RBI (Brand Earnings) = 50% of Economic Value Added (EVA)
- Weighted Average Cost of Capital = 8%
- Growth rate = 3%

Fill in the empty cells in the table on the next page (show work for full credit):

OAKLEY FINANCIALS			
	2016 Forecast	2017 Forecast	2018 Forecast
Total assets	\$27,000,000	\$25,000,000	\$30,000,000
WACC			
Net income	\$6,000,000	\$5,000,000	\$7,000,000
Economic Value Added (EVA)			
RBI (Brand Earnings)			
Discount Factor			
Discounted Brand Earnings			
Value until the year 2018			
Terminal value			
Net present value of "OAKLEY" Brand			

b) **(7 points)** Explain what the Role of Brand Index is and what factors influence the RBI.

3. **(Total 13 points)** *Digital Advertising*

a) **(6 points)** List and briefly explain the two main challenges facing traditional digital display advertising industry these days (discussed by our guest speaker).

b) **(7 points)** What is Real Time Bidding? Briefly explain how RTB works.

4. **(Total 24 points)** *Media Planning*

a) **(6 points)** What are the stages of selling network advertising time called? What are the relative prices of ads purchased in each of these stages (highest, medium, lowest).

b) **(10 points)** Networks are incentivized to give a slightly inflated estimate of the expected size of the TV program audience to advertisers. (i) Why? (ii) What happens if networks do not deliver the guaranteed viewership? (iii) What is the process in (ii) called?

c) **(8 points)** According to 2014 data, broadcast network TV channels commanded the following average CPMs by the time of day:

Early AM – \$23.78

Early News – \$25.75

Prime time – \$50.24

Late Night – \$37.19

(i) What is a CPM? (ii) Provide a possible explanation for the different values of CPMs across different day parts.

5. **(Total 10 points)** *Advertising Content*

a) **(5 points)** What does the empirical research say about the effectiveness of humor in ads?

b) **(5 points)** What does empirical research say about a celebrity endorsement effect?

6. **(6 points)** List and *briefly* describe at least 3 examples of advertising strategies that utilize insights from behavioral economics discussed in the Freakonomics Podcast “The Maddest Men of All”.

EXTRA SHEET