



**United International University**  
**Department of Computer Science and Engineering**  
SOC 2101: Soc., Tech. and Engg. Ethics      Final Exam. : Summer 2021  
Total Marks: 20      Time: 1 hour 15 minutes

Any examinee found adopting unfair means will be expelled from  
the trimester / program as per UIU disciplinary rules.

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*Answer all the 5 questions. Numbers to the right of the questions denote their marks.*

1. Tamim is a young engineer working for a cellular phone manufacturing company. When doing a bit of off the job research he read the latest report about the susceptibility of the brain to radiation. IEEE has proposed a standard of how much radiation could safely be dissipated into the human body as a whole. This standard is 0.4 watts/kg. This is an average for the entire body, but recent research shows that the tissue of the brain is much more susceptible to radiation. This means that the standard for the brain should be significantly lower than the IEEE standard. The next day he reviewed the calculations of the radiation given off by the antenna of his company's hottest selling cellular phone. He found that the S.A.R. (Specific Absorption Rate to determine the amount of radiation a human brain can absorb) to the brain was 0.35 Watts/kg. Later that afternoon he visited his boss with a suggestion to modify the antennas on the phones and perhaps doing a recall on the ones already sold. "Tamim," screamed Faiza, the head engineer, "what you're suggesting would cost us hundreds of thousands of dollars! You can't possibly be serious. That's our fastest seller. Recalling them would be a disaster and there are more important things to be done. You don't even know that this is dangerous!"

Tamim: "But what about our obligation to the public?"

Faiza: "What about your obligation to the company? Look, I don't want to make a big issue out of this. We're within IEEE standards and unless we have further word from them then we're in the clear."

According to Engineering Ethics what are the major violation, please point those according to the IEEE code of ethics. [4]

2. Miss Roy is a data scientist. She has been requested to create an AI to automatically assign CGPAs to students in HSC exam, as the HSC exam could not take place due to Corona. The dataset she was provided contains data of previous 10 years' students who attended HSC before Corona period. It contains Student name, Gender, School name, College name, SSC GPA and Test Result. What are the concerns you have about this system and what cautions Miss Roy should take? [4]

3. OkCupid, the popular and free dating site, has been manipulating users' compatibility in order to study and monitor dating behavior. They manipulated users' compatibility data to make users think they're a better match than they really are – and vice versa. In one experiment, the website told pairs who scored a 30 percent match that they were 90 percent compatible. OkCupid claims the ploy worked: "When we tell people they are a good match, they act as if they are, even when they should be wrong for each other."

The site also flipped the experiment, fooling strong matches into thinking they weren't right for each other. As a result only a tenth of pairs moved past a single message to each other.

In another experiment, the site hid the profile text of a group of users to see how people would rate them based on their looks and photos alone. "Essentially, the text is less than 10 percent of what people think of you," says Christian Rudder, the President of the company. "So, your picture is worth that fabled thousand words, but your actual words are worth almost nothing," he added.

Despite surrounding all the controversies the dating site has so far offered no apologies for tweaking those compatibility ratings. "If you use the Internet, you're the subject of hundreds of experiments at any given time," says Rudder. "That's how websites work."

What aspects of social media research ethics were violated in this case? [4]

4. Consider a small clothing store owner, Mr. Zarif. Since the start of the pandemic, his profits are plummeting due to lockdown and limited movements of people. So, he eyes into online business. But due to budget constraints, he could not partner with popular e-commerce websites due to losing a huge share of the profit. Now, he gets an android app developed for his shop and continue his business via this app. He accepts payment from customers via the MFS like bKash, Rocket, Nagad etc.

Ms. Jenny is another person who has just found out the app of his clothing store and plans to order some for herself. Now, what are the major impacts of this mobile app based online business in our society for people like both Mr. Zarif and Ms. Jenny in the long run in the context of Bangladesh? [4]

5. According to BBC UK, globally, we are throwing away 20-50 billion of electronic waste every year. But while e-waste is currently a massive threat to our environment, it could also be viewed as a massive opportunity via recycling. Do you agree? Explain how this will offer us both environmental and economic benefits? [4]