[1] Below is an example of a webpage on a recipe website, where a user wishes to find out how to make oat pancakes.

Oat Pancakes

*perfect to start your day…*

Ingredients

* 1 egg
* 1 packet of instant oatmeal
* *optional:* banana for topping

Instructions

1. Whisk egg and stir in packet of oatmeal
2. Spread mixture onto hot, oiled pan
3. Flip when the first side has set

Using the CRAP principle to analyze graphical designs, discuss each component of CRAP and how it relates to the webpage shown above. Your discussion should give a very brief description of each component as well as an analysis of how well or poorly the example shown above follows that component. Also, explain the squint test along with how the squint test would help to critique the design shown in the webpage above. Be sure to include any changes you would make when designing the webpage.

[2] Briefly describe what a prototype is, the goal of prototyping, and give three reasons for why we prototype.

[3] What is the general rule regarding prototyping?

[A] you should always make low-fidelity prototypes when possible as opposed to high-fidelity ones

[B] you should progress from low-fidelity to high-fidelity designs throughout the design process

[C] you should progress from high-fidelity to low-fidelity designs throughout the design process

[D] you should always make high-fidelity prototypes when possible as opposed to low-fidelity ones

[4] Suppose you are designing an application in which users can locate less-crowded and vacant study spaces to work in. Your app works similar to a search engine, where users are able to specify the location (E-School, on-grounds, corner, etc.), the vacancy (crowded, average number of people, empty), and the noise level (loud, average, silent). Create a storyboard with an appropriate number of panels to show a user’s interaction with the app and actions in real-life.

[5] Briefly explain the difference between low- and high-fidelity prototypes, and give two advantages and disadvantages of using each.

[6] Which is more important during the design process: quantity (producing as many prototypes as possible) or quality (producing more usable, high-fidelity prototypes)? Argue which one you think is more important and give an explicit example that supports your claim.

[7] Suppose you are creating a mobile application called “Jennie the Pocket TA” that aims to help students be more successful in their classes. “Jennie,” is able to answer a large majority of the questions posed by students regarding information found in the syllabus, in lecture, and in the textbook. Your goal is to learn how to most effectively use natural language processing, so that Jennie can understand text input from a user and respond appropriately. Which prototyping technique would you use to simulate this interaction between “Jennie” and the user? Describe how you would set up this prototype and test it on users.

[8] Briefly explain the phenomenon of functional fixation along with how you, as a designer, can try to overcome it.

[9] After we create prototypes, what is the purpose we have in testing them?

[10] Explain why you should *never* ask “Do you like my interface?” when having users evaluate a prototype. Give examples of two other questions that you should ask instead.

[11] What is the difference between internal and external validity, and in which situations should each be used?

[12] Briefly explain what the “think aloud” method is and how it is used in the context of evaluating prototypes. Give two advantages and two disadvantages of this method.

[13] A designer decides to test their prototype on a number of users. The designer asks users to rate the app’s overall intuitiveness and ease-of-use on a Likert scale from 1 to 5 (1 – not at all intuitive, 2 – somewhat difficult to use, 3 – neutral, 4 – easy to use, 5 – very intuitive). Some other information is recorded when the user takes the survey like the outside temperature and the time of day. The designer ends up with the graph shown below.

The designer concludes that the outside temperature has an effect on the ratings that users give the application. The designer recommends that the app be used in the mid-afternoon when the temperature is the highest, so that more people will find the app easy to use. What is wrong with this conclusion? Name and briefly describe a statistical test that could be used to verify the hypothesis that there is a correlation in the data.