

INFORMATION TECHNOLOGY BRANCH

SEVENTH SEMESTER

IT9028 – USER INTERFACE DESIGN
(REGULATIONS 2008)

Time: 3 hr

Max Mark : 100

Answer ALL Questions

Part – A (10 X 2 = 20 Marks)

- 1) Name a few affordances you come across in daily life?
- 2) List any two characteristics of design in terms of visibility and feedback.
- 3) What are the steps in Design process? Illustrate with an example
- 4) What are the goals of requirement analysis?
- 5) Name a few direct manipulation techniques along with their short comings.
- 6) What are the eight golden rules of interface design?
- 7) Indicate a few tools where Fitt's law could be applied and explain the behavior of the tool with the help of this law.
- 8) Name a few tools that aid in the interface design of portable devices. In what way, these tools are different from the one you use for PCs.
- 9) What are the factors which affect the evaluation of an interface?
- 10) With an example, illustrate the usability testing in the laboratory.

Part-B (5 X 16 = 80 Marks)

- 11) i) For an ATM machine, think about how the user interacts with the machine and answer the following questions. Use diagrams where ever necessary. (8)
 - a) How does the machine present capabilities to the user?
 - b) What affordances does the machine present?
 - c) How does the user know what to do first?
 - d) What kind of feedback does the machine give to tell the user about its state?
 - ii) You are given the task of creating an interface for tracing route inside Anna University, guiding first time visitors and students. Assume you have the following things located in every corner of the University.
 1. 40" diagonal (plasma or LCD).
 2. resolution of 1024 X 768.
 3. Portrait or landscape mode.
 4. It has bluetooth/802.11 to talk to other devices the user might have on-hand.The goal is that this instrument should be interactive and inform the person about the route, he/she has to reach. How will you consider using the 8 different-golden rules for this design of the user interface (8)
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- 12) a) i) With examples, explain the obstacles in designing a user interface for portable devices (6)

ii) What are the various human characteristics that should be taken into account while designing an interface. Explain? (10)

(or)

b) i) You are asked to design a UI for a software that monitors lab examination. The objective of this software is to prevent malpractice among students. Elaborate on the four pillars of successful user-interface development for this software (8)

ii) With an example, explain the different modes of interaction styles along with its advantages and disadvantages (8)

13) a) i) Explain the various categories of single menu with examples (8)

ii) Explain the significance of Fitts law. You have a palette of tools in a graphics application that consists of a matrix of 16 X 16 pixel icons laid out as a 2X8 array that lies along the left-hand edge of the screen. Without moving the array from the left-hand side of the screen or changing the size of the icons, what steps can you take to decrease the time necessary to access the average tool? (8)

(or)

b) i) As a programmer, name a few instances where windows, icons, dialogue boxes and menus are used? From the user perspective analyse these instances and state the fault both quantitatively and qualitatively. (8)

ii) What are the factors influencing response time of the user. Explain with examples (8)

14) a) i) For a word processing tool of your choice, explain the localization and accessibility features (8)

ii) Name a few scenarios where command line interface is more effective than other interaction styles. Give examples and explain (8)

(or)

b) i) List the different types of icons that help in easy visualizing capabilities. Explain with an example. (8)

ii) Explain user productivity. Give a measure quantitatively and illustrate with an example (8)

15) a) i) Design an interface for an onscreen keyboard which helps a person with disability to type. Incorporate the guidelines suggested in this course for your design (10)

ii) Explain the different methods of evaluating an interface (6)

(or)

b) i) List a few tools which has shadow response time and longer response time. Explain the reasons behind these. (8)

ii) Explain the need for proper documentation for tools. List a few cases where documentation is substituted with images and other visual representation techniques. (8)