RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

BSc (General) Degree in Information and Communication Technology

Third Year Semester II Examination, April/May 2016

ICT 3301 – Human Computer Interaction

Time allowed: 3 hours

Instructions for candidate

- This is a closed book examination.
- The paper contains 3 pages.
- Time allowed will be 3 hours.
- The question paper consists of FOUR (5) questions.
- **ANSWER ALL QUESTIONS.**
- All main questions carry equal marks.
- This exam accounts for 70% of the subject assessment.

Q1.

I. What are the factors that affect Human perception other than physical reception of stimuli in relation to vision? **(3 marks)**

II. How could you improve the readability of the texts included in your system interface? **(4 marks)**

III. Describe what Fitt's Law is and how it influence better interactive system design. **(6 marks)**

IV. Explain "Repetitive Strain Injury (RSI)". If you have been asked to design a mouse or a key board which help in avoidance of RSI, explain your approach. **(7 marks)**

Total: 20 marks

Q2.

I. What are the 2 major categories of errors that a human being can make when interacting with a system? Explain in brief how you could improve a system in order to avoid such errors. **(3 marks)**

II. If you have been given to design and develop a health care system to interact with a doctor remotely through the Internet for diagnosing diseases and making treatments, explain which type of interaction styles you would apply within that system. Mention the reasons for your decisions. **(8 marks)**

V. Describe the importance of 'Agent Based Interfaces'. **(4 marks)**

VI. 'Context aware Computing' has become more popular in the world. Explain how this approach affects the improvement of interactivity in a computer system. **(5 marks)**

Total: 20 marks

Q3.

I. Golden rule of HCI is: 'Know the user first'. Explain the importance of it when designing interactive systems. **(4 marks)**

II. What are the good and bad points you see in the use of prototyping in iterative design of interactive systems? **(4 marks)**

III. Suppose you have to measure the attribute 'backward recoverability' of a system which supports word processing. Mention how you are going to measure it with a suitable Usability Engineering method. Mention all the other parameters needed in that process. **(6 marks)**

VII.   Dialog initiation by the system is important at interface level. Do you agree with this? Further, mention some examples where you could see such system initiated dialogs and give the advantages and dis advantages of having them. **(6 marks)**

Total: 20 marks

Q4.

I.   Mention the importance of having bread crumbs in a web site. **(3 marks)**

II.   What do you understand by universal design? What are the factors you have to consider in universal design? **(3 marks)**

III.   How could you apply multi model interaction techniques in universal design? **(4 marks)**

IV.   Mention the characteristics of better user supportive tools given with a system. **(5 marks)**

V.   Describes 2 knowledge representation techniques in user modeling when designing adaptive help systems. **(5 marks)**

Total: 20 marks

Q5.

I.   What is meant as **robustness** with respect to computer systems? Explain how you could improve the robustness of a system through the interface design. **(5 marks)**

II.   What are the advantages and dis advantages you see in evaluating a system using field studies. **(4 marks)**

III.   Compare and contrast cognitive walk through and heuristic evaluation techniques. **(4 marks)**

IV.   Suppose in a graphic package, you are trying to include key board short cuts or icons for tools. To evaluate what is more effective, you are required to design an experiment. Explain how you would arrange it by emphasizing suitable hypothesis, subject and variables. **(7 marks)**

Total: 20 marks

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