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**University Examinations 2015/2016**

FOURTH YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

**CCS 3430: USER INTERFACE ARCHITECTURE**

**DATE: NOVEMBER 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Explain **four** measures of usability (4 Marks)
2. Explain **FOUR** reasons, **TWO** based on Business view and **two** based on human factors view to justify the relevance of studies in User Interface Architecture. (4 Marks)
3. Discuss the main characteristics of the following user interfaces interaction techniques (6 Marks)
4. Command line interface
5. Menu
6. Natural Language
7. Describe the main characteristics of the following user analysis techniques in user interface design. (6 Marks)
8. Questionnaires
9. Ethnography
10. Role play
11. Long-term memory works by semantics and by association. Additionally information can be grouped into chunks so that we can increase our short-term memory. Explain **FIVE** design features of MS word user interface that take consideration of these human aspects. (5 Marks)
12. Ideally, an interface should be evaluated against a usability specification. However, it is rare for such specifications to be produced. Outline **five** evaluation techniques that can be used to evaluate a user interface. (5 Marks)

**QUESTION TWO (20 MARKS)**

1. Usability evaluation helps designer recognize that there is a problem, understand the problem and its underlying cause, and plan changes to correct the problem. Discuss Empirical evaluation and Analytical evaluation as techniques or user interface evaluation, highlighting their key characteristics and the differences between them. (10 Marks)
2. Usability metrics is used to identify the features that will be measured. Identify some metrics and use them to evaluate the Graphical User interface of WINDORS OS (10 Marks)

**QUESTION THREE (20 MARKS)**

1. Many disciplines contribute to Human computer interaction. Discuss four disciplines and show how UIA has benefited from each. (8 Marks)
2. The goal of model-based task analysis is to use established theories to build predictive mode. Explain four such models applied in User Interface Architecture. (12 Marks)

**QUESTION FOUR (20 MARKS)**

1. The aim of prototyping is to allow users to gain direct experience with the interface. Without such direct experience, it is impossible to judge the usability of an interface. Develop a presentation detailing the role of prototype in interface architecture, the design process and the prototype automated techniques one can apply. (10 Marks)
2. According to the Moores theorem the number of transistors in a component will double after every 18 months. Discuss the implications of this theorem in UIA and suggest if UIA will require a professional body to regulate the user interface design standards. (10 Marks)

**QUESTION FIVE (20 MARKS)**

You have been contracted to design a User Interactive System for a mobile phone interface. Order adult competencies and limitations are not usually accounted for in the earliest stages of design and engineering.

1. Using human processor model discuss the major parameters the designers should take into account to help develop a usability interface. (6 Marks)
2. Explain GOMS as a technique of task analysis and how you can apply it in this scenario

(6 Marks)

1. Explain the tools you will use to involve the users and what stage in the development process. (8 Marks)