United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Final Exam Trimester: Spring 2021 Marks: 40 Time: 1 Hour 30 mins

Code: CSI 311 Course Title: System Analysis & Design

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

Answer ALL of the following questions:

QUESTION 1 [CO3] 20

Suppose you are asked to do the design for a software module within UCAM named - **UIU Online Exam System (UOES)**. In a trimester, the registered students and respective teachers' will automatically receive the invitation (including userID and password) through email from UOES for a particular section of respective course. After accepting the invitation both teachers/students will be allowed to create/participate into the online exams. UOES has the option to create the online exams by the teachers using MCQ questions and respective answers entry. In addition to text entry, teachers can enter different pictures/audio files as a part of questions. Teachers can create a customized schedule for different exams and can take attendance and calculate marks of the examinees automatically. Students can participate the exams and receive the results immediately after their exams. At the end of each exam, UOES automatically save the exams related data/info into UIU's cloud server. UOES Admin resets/refreshes all the exam info for serving for the coming trimester – this process is termed as **Refresh**. Consider necessary required files as per your convenience.

a) Draw USE CASE diagram for the above scenario (show at least one include and extend connections). Mention the reasons for selecting those as Use Cases. [5]
b) Write down the rules of DFD. Draw the DFD for the above scenario. [5]
c) Draw Sequence diagram for the about scenario. [5]
d) Show the classes required for the above scenario and mention the reason of their selection and structure. [5]

QUESTION 2 10

a) Describe in brief: Functional Requirements and Non-functional requirements of any software project. **[CO2]** [2]
b) Mention the general guidelines for designing a good User Interface (UI). **[CO3]** [3]
c) Suppose you have found a great **IT startup** idea to implement. To implement the idea, you are supposed to invest $5000, $4000, $3000 and $2000 at present, after 1 year, after 2 years and after 4 years respectively. In return you will receive the revenue $3000, $5000 and $8000 after 3, 4 and 5 years respectively. Consider rate of interest is 10%. **[CO4]**

   Determine the **profit or loss** by: NPV method and Cash Flow Method. Mention the causes of different results, if happens. [5]

QUESTION 3 [completed in class] [**CO3**] **10**

Collect Requirements, Analysis, Feature list fixation, System Design, UI design, SWOT analysis.

a) Develop an SRS on a Software Project with presentation.