

University of Asia Pacific
Department of Computer Science & Engineering
Mid-Semester Examination Spring -2020
Program: B. Sc Engineering 3rd Year 1st Semester

Course Title: System Analysis and Design Course No: CSE 305 Credit: 3.00
Time: 1.00 Hours. Full Mark: 60

There are **Three** Questions. You must answer all **Three**. There are two options for Question 3, you can answer either one of them. All questions are of equal value. Figures in the right margin indicate marks.

1. Suppose you are going to develop a ride sharing service like “Uber”. **20**
Riders will share ride with customers and customers will pay for the ride. A portion of fare will be paid to you. Also, there are options for food and goods delivery. You have decided to use SDLC approach for your system development. We know, there are seven phases for SDLC approach:

0. Identifying Problems, Opportunities, and Objectives
1. Determining Human Information Requirements
2. Analyzing System Needs
3. Designing the Recommended System
4. Developing and Documenting Software
5. Testing and Maintaining the System
6. Implementing and Evaluating the System

Describe why do you need phases x and y in your system? (give 3 reasons). How would you perform phases x and y in your system? (write 3 ways)

Here, $x = (\text{Last 3 digits of your student id}) \% 7$

$y = (\text{Last 3 digits of your student id} + 1) \% 7$

For example, if your student id is 18101028, $x = 028 \% 7 = 0$ and $y = (028 + 1) \% 7 = 1$. So, you need to describe phase 0 and phase 1.

You can perform modulo (%) operation from the following link:

<https://planetcalc.com/8326/>

2. (a) Consider the ride sharing service (Uber) of Question 1. Suppose Uber is opening for the first time in Bangladesh. Though Uber is an established multinational company and it has branches in many developed countries, it needs to do the requirement analysis again to conduct business in a developing country like Bangladesh. Because, many road conditions, traffic jam, economy, and many other factors are different in Bangladesh. We know there are seven fact finding methods of requirement analysis: **10**
0. Background Research
 1. Sampling of existing documentation, forms, and databases

2. Observation of the work environment
3. Questionnaires
4. Interviews
5. Prototyping
6. Joint requirements planning (JRP)

Describe how would you apply method x in your system (write 3 ways).
Write 2 advantages and 2 disadvantages of applying methods x in your system.

Here, $x = (\text{Day of your birthdate}) \% 7$

For example, if your birthdate is 23 September, $x = 23 \% 7 = 2$. So, you need to describe method 2.

You can perform modulo (%) operation from the following link:

<https://planetcalc.com/8326/>

- (b) Suppose you need to develop system for the scenario of Question 2(a) **10**
(Uber in Bangladesh). **If your student id is even (for example 18101028) answer question I. If your student id is odd (for example 18101029) answer question II.**

- I. Give 3 advantages and 3 disadvantages of using Agile Method in this scenario.
- II. Give 3 advantages and 3 disadvantages of using Object Oriented Method in this scenario.

3. Suppose you are going to develop an online medical application to fight **20**
against this COVID-19 pandemic situation. There will be account for doctors and patients. They both need to register and login. After login, a patient can see a list of doctors and their personal and degree information. Patient can schedule an appointment with a doctor. A doctor analyses a patient's situation by using documents provided by patient, voice call, and video call. Then, doctor provides an appropriate prescription for the patient. Patients can also buy medicine from your app. System provides a list of available medicines and patients selects the required ones. Patients can pay all bills by bkaash, rocket, or credit card. **Draw the use case diagram for your system.**

Or,

3. Or Suppose you are going to develop an online police service management **20**
application. There will be account for police and normal people. They both need to register and login. After login, a person can see list of different services. There are different kind of services like formal case, general diary, and formal complaint. A User can choose any of them. Police analyses a service by using documents provided by the person, picture/video evidence, and voice call. Then, Police takes appropriate action. A user is notified when a service is completed. User can also get emergency help from your app. System provides an emergency option and user can get emergency service by selecting that option. **Draw the use case diagram for your system.**

