Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Examination, Spring 2021 @ DIU Blended Learning Center

Course Code: CSE333 (Day), Course Title: Software Engineering

Level: 3 Term: 3 Section: All

Date: Tuesday 09 March, 2021 Time: 01:30-04:00pm

Two and Half hours (2:30) to support online open/case study based assessment Marks: 25

Answer all the following questions

"**Amar Sheba**" is renowned private clinic in a Gazipur district where a doctors' surgery consists of five doctors a receptionist and a manager. They need an information system to help them to run the facility.

A patient may ring the surgery to make an appointment with a doctor. Each patient nominally has a doctor associated with him or her but they may often opt to see any doctor in the surgery that is available. The receptionist sees which doctors are on duty on which days and offers appointment alternatives from which the patient may choose. If an appointment is not available within a short time and the patient must be seen quickly they are asked to attend an emergency surgery that takes place every evening between 5 and 6 p.m. The appointment can be 5, 10 or 20 minutes long, dependent on the reported reason for seeing the doctor. This reason is recorded on the system. Sometimes patients ring to cancel appointments. Appointments may be made for up to six weeks in advance. Appointments that are more than 3 weeks old are automatically deleted from the system. Some appointments are for a doctor to go and visit a patient at home when the patient cannot come to the surgery. Every day one of the doctors is available for home visits in the afternoon.

A record is kept of each patient and the treatments they have received for any ailments they may have had. Here are recorded many details such as allergies, details of which drugs patients have been administered in which quantities and when. Also relevant personal details of each patient are recorded. Typically the doctor who sees a patient will want access to this information before deciding on the relevant treatment to give. When the doctor prescribes treatment, details will be recorded in the patient's record.

Repeat prescriptions are automatically produced by the system and are available for collection at the surgery by the patient. At any time a doctor may suspend or cancel the prescriptions. Patients may register with the surgery providing the number registered to each doctor is not above a certain maximum. Sometimes patients die or leave the area. In this case the patient is removed from the system and their details are archived. The manager is responsible for dealing with this aspect.

1. Which software **development model** will be suited best for the above scenario and why? Write down the **functional and Non-functional requirements** for given scenario. [5]

2. Draw the Use Case diagram of the case study described by you. [5]

3. Provide Use Case description for "**Patients Record**" and "**Patients Appointments**" process. [5]

4. Draw the activity diagram for the ""**Patients Record**" and "**Patients Appointments**" process. [5]

5. Draw the Sequence diagram and for "**Patients Appointments**" process and GUI for "**Patients Record**" process. [5]