BRAC UNIVERSITY
Department of Computer Science and Engineering

Examination: Midterm **Duration: 1 Hour 15 Min**
Semester: Spring 2024 **Full Marks: 25**

CSE 470: Software Engineering
SET A

Name: **ID:** **Section:**

Q1. Hardy, Manu, and Buggu planned to visit London after poor ILETS scores. Unable to obtain visas due to poor results, they decided on an illegal route to London via the Dunki route. They met with an agent who provided them with instructions on how to reach England. After discussing the plan, they prioritized the route, their route initiated with Pakistan, leading to Afghanistan. They then opted for a truck through Iran, a train across Turkey, and finally a ship to England. They documented this plan in their to-do list. Starting in Pakistan, they crafted a new checklist to anticipate potential obstacles. Each evening, they briefly discussed progress, estimated travel times, and anticipated challenges for the next day of their journey. They tracked progress with a map and celebrated reaching each destination with a party to share achievements. This continued until they reached England.
Developing an app for adventurous travelers on the Dunki route, inspired by Hardy, Manu, and Buggu's journey. The app contains a map for route visualization and shortest path guidance. An AI tracks journey progress and alerts users of potential dangers. Ensuring smooth performance under all conditions, the app is encrypted to safeguard plans from adversaries. Above all, it prioritizes user-friendly design for ease of use. For the development of this application they decided to follow the methodology used by Hardy, Manu and Buggu.

A. According to the scenario, what methodology they are following? **[Mark 1] [CO1]**
B. Explain the detailed implementation process of the chosen methodology **[Mark 4] [CO1]**
C. Find out 2 functional and non-functional requirements from the given scenario. **[Mark 2] [CO1]**

Q2. After completing the CSE470 - Software Engineering course, your friends, now software development experts, are launching a SaaS startup focused on songwriters and composers, based on the Large Language Model (LLM). Excited about launching their application, your friends aim to deploy some features now and will implement other features in future. They want to create a user-friendly platform for songwriters and composers. Users will access a dashboard to search for songs, filter by genre, and view creation prompts. They can navigate to a song generation page, entering prompts for lyric generation by the LLM application. The option to regenerate lyrics or enter new prompts enhances user flexibility. Future plans include instrumentals, earning options, and collaborative features, with Spotify integration initially and Apple Music integration later. Realizing the project's complexity, they'll deploy it in four parts, following the waterfall model.

A. Do you think the waterfall model would be suitable for the scenario? What SDLC model would be suitable? Explain your chosen SDLC model. **[Mark 1+1+4] [CO1]**

Q3. The Internet is the key to accessing anything that is virtually available. We need the internet in our day-to-day life. Without the existence of the internet, we cannot access any e-commerce website. Among different online websites E-Commerce is widely used online websites. There are different types of E-Commerce websites available. The Internet allows us to use online sites. All of our internet providers have names, service IDs, and payment IDs. E-commerce websites facilitate us to purchase products online. It reduces our effort to access quality products anywhere in the world. E-Commerce websites consist of product details and purchase procedures. Amazon is mostly known for its one of the largest e-commerce operations. It allows shipping between multiple countries. It has a name, business ID, and customer details. Furthermore, like many others, it is the generalized form of an e-commerce website. Since Amazon is available in different parts of the world, customers of Amazon are available worldwide. Evaly is one of the most popular online shopping outlets in Bangladesh. It is believed to be the best e-commerce site in the world. It provides Attractive discounts on purchases. It has a name, business ID, and customer details. Furthermore, like many others, it is the generalized form of an e-commerce website. Customers of Bangladesh can only access this website and purchase products. Admin is the key person to control any website that is available online. Like other websites, E-Commerce websites Also need Admin. Admin has a name, id, and password. It controls customer requests and monitors payment status. The customer is the key to an e-commerce website. Customers purchase products and receive online delivery. The customer has a name, paymentId, Address. Customers can be from different parts of the world. Like Bangladeshi Customers.

A. Draw the Class Diagram according to the above scenario. **[Mark 5] [CO2]**

Q4. Let's consider you are in charge of developing the e-commerce website which is named as "Bracu Shop". Now, you need to maintain your codes in such a manner where separation of concern (SOC) will be maintained. For example, your HTML, CSS, and js codes that are responsible for viewing details in the UI will be kept in place. Similarly, your data handling code and backend code will be maintained separately as per their responsibilities. Also, these two sections will not communicate with each other. There will be a separate section through which users will interact and that will be responsible for handling user requests and responses.

A. Which software Architecture would be suitable for implementation? **[Mark 1] [CO3]**
B. Can we choose any other Architecture apart from your chosen Architecture in question 1? If yes then explain it using the diagram. **[Mark 4] [CO3]**
C. How to stage/add all of your code and after that how to commit your code with the message "**first commit done**"? In Addition how to push your code to "**Dev1Branch**"? **[Mark 2] [CO3]**