1. Consider the following scenario on **UIU UCAM** :

“A student must have to login to the UCAM system for accessing all the features. After login Students can view their result history of different semester. At the time of Registration students need to enter into the system and do the Course Registration. For doing course registration, students need to select courses those they want to do take in the coming trimester and select sections with class time. After selecting courses they have to click Registration completed for finalizing the registration. At the time of registration the system offers a student to see the tentative mid/final exam routines for avoiding and exam conflict. Admin updates all the information regarding course routine, grades of different courses and also different important notices.

At the end of a trimester the students will evaluate course teachers by answering some questions. Students can also see their payment status and also can pay their tuition fees via Online Payment system. Consider required files needed to store the different information regarding student/admin info, accounts, teachers evaluation, course history, course routine and result history. ”

i. Draw DFD diagram for the above scenario. 3

ii. Draw activity diagram for the above scenario. 3

iii. Draw the use case diagram (having maximum 2 use cases) and write down their descriptive forms 4

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3. a) To develop an E-commerce software (for fast food industry) a company needs to invest Tk.50,000/=, Tk. 30,000/=, and Tk. 20,000/= at **present**, after **1** year, and after **3** years respectively. In return, you will get revenue Tk. 20,000/=, Tk. 50,000/= and Tk 60,000/= after 3, 4, and 5 years respectively. (consider bank interest = 15% per year).

i. What are the different types (three types) of feasibility study you need to do before commencing to develop the above mentioned ERP software? 1+2

ii. Determine the profit or loss in NPV (net present value) method and Cash Flow method. 3

iii. Write down the SWOT analysis of your group with respect to your CSI 312 Lab project respectively. 2

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Consider the following scenario of UIU Online Ticket Booking Website:

“UIU has opened an online service to book tickets for the events that takes place in UIU. The services are only available to the students of UIU. Students are allowed to book only 1 event ticket at a time.

Initially, the student needs to go to the log in page of the website and **Log In** using his/her student ID and password. Logging in requires data to be retrieved from the STUDENT file in the database for verification. If the log in is unsuccessful, the student is asked to re-enter the information, otherwise, he/she is redirected to the website’s event page. Events can be **searched** and the details of the events can also be **viewed** on this page. All the data of the events are stored in the EVENT database.

In order to search an event, the student needs to type the event name in the search bar. The EVENT database is searched and if it is not found then an error message is displayed. However, if it is found then the student can either choose to view the details of the event or search another event.

After viewing the event, the student needs to select it to proceed to the **booking** process. If the event is fully booked, the student won’t be able to book any ticket. After booking an event, the EVENT\_TICKET database is updated first then the process sends back a receipt, containing all the details of the booking and also the deadline of making the payment, to the student. The amount to be paid is updated in the STUDENT\_ACCOUNTS database and the payment cannot be done on the ticket booking website.   
  
The student has to pay for the ticket in the usual way i.e. by going to the bank or online through UCAM. If the payment has not been made within the given date, the booking will automatically be cancelled.

1. Draw DATA FLOW DIAGRAM for the above scenario and mention some major rules of DFD. [3]
2. Draw ACTIVITY Diagram **from logging in till** **viewing event details**. [2]
3. Draw the USE CASE Diagram. Show both “include” and “extend”. [2]
4. Write down the USE CASE Descriptive Form for **selecting and booking an event**. [3]