

**IT 314 Software Engineering****Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)****First-In Semester Examination, February 2019****INSTRUCTIONS:**

- There are 4 double sided pages (8 printed pages). Ensure that you have all the pages.
- Answer **all questions**, writing clearly in the space provided.
- Proper justification of answers, wherever asked, is mandatory. If not stated marks will not be given.
- Write your name and student number **clearly** at the top of each page. If you do not follow this you will get zero right away.
- You have **one hour and thirty minutes** to complete the examination.
- If you are making an assumption, clearly state the assumption and also reason for making that assumption.
- Marks for each question are indicated in brackets at right. You may use point form for your answers, but make sure the points are clear and unambiguous. I am more interested in your thought process.
- For rough work please ask for supplementary sheets for rough work. Do not ask for full sheets for rough work. Your answers should be on the question paper in the space provided.

**FOR MARKER'S USE ONLY**

Question	Possible	Received
1	10	
2	10	
3	30	
4	10	
TOTAL	60	

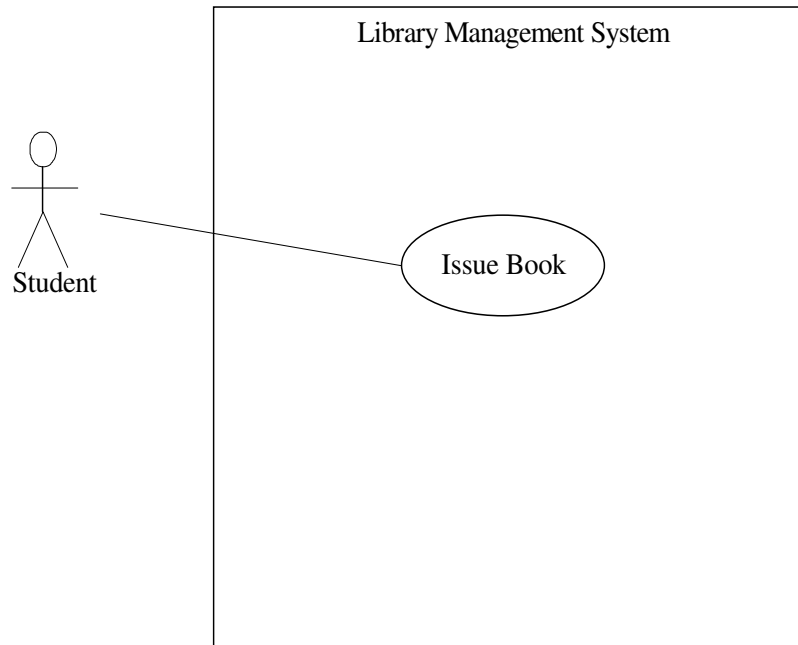
1. Which of the development process models would you follow for the following projects? Give justifications. (10)
- (a) A data entry system for office staff that have never used computer before. The user interface and user-friendliness are extremely important.
  - (b) A new system for comparing fingerprints. It is not clear if the current algorithm can compare fingerprints in the given response time constraints.
  - (c) A new missile tracking system. It is not known if the current hardware/software technology is mature enough to achieve the goals.
  - (d) A flight control system with extremely high reliability. There are many potential hazards with such a system.
  - (e) A website for an online store which always has a list of desired features it wants to add and add them quickly.

2. For the SEN project assigned to you, write project name and the paragraph (300 words) stating the project problem, objectives and requirements. Based on your project requirements answer the following: (10)
- (a) Describe all the stakeholders and users of the system?
  - (b) Describe the various features exercised by each user of the system? Explain one of major feature in appropriate detail.
  - (c) Considering the set of features you have identified, what are the non-functional aspects associated with your project? Explain rationale behind the selection of each of them.
  - (d) What are the elicitation techniques used by your project team to understand and elicit the requirements?



## 3. Consider the following piece of text

“A library maintains multiple reading materials which include books, journals, and magazines. The books are issued to the registered students and faculties of the institute, for a specified period of time. The issued books are to be returned back to the library. Delayed returns are subjected to stipulated fines. The issue-return process is administered by one of the librarians who work in library.”



Develop the following artifacts for the Library Management System (LMS).

- (a) Complete the use case diagram for the above problem text. (5)
- (b) Specify use case documentation for “*issue book*” use case. (5)
- (c) Enlist all features of the LMS by each user of the system, in the form of user stories. Create the product backlog, prioritize and classify them in sprints for independent releases. (10)
- (d) Justify and explain difference between the use cases and the user stories using an example of LMS. (10)





4. The following figure contains a set of different use cases and actors. Define relationships between them. Use the relationships generalize, extend and include. You should also connect the actors to the use cases. (10)

