1. (a) What is the main difference between programming and software engineering? 2

(b) What does the phrase "Hyrum's Law" state in software engineering? 2

(c) Mention two reasons why long-term projects need continuous upgrades? 2

2. (a) What is meant by the phrase "Shifting Left" in software development? 2

(b) Mention two challenges faced by software engineers when working in teams. 2

(c) Explain with example why a low Bus Factor is dangerous for software projects. 2

3. (a) How functional requirement is differ from non-functional requirement? Give example of any two functional and non-functional requirements for Hotel *Management System*. 2

(b) Give an example of a reflexive association with an association class. 2

(c) Specify which of the following statements functional requirements are and which nonfunctional requirements are: 2

- "The ticket distributor must enable a traveler to buy weekly passes."
- "The ticket distributor must be written in Java."
- "The ticket distributor must be easy to use."

4. (a) What is a event-based use case. Identify various types of event-based use cases for the problem, "alarm clock". 2

(b) Why is feedback culture important in software teams? 2

(c) What does "equity" mean in the context of software engineering teams and why is it important in software engineering workplaces? 2

5. (a) What was the main reason Google's image recognition system made serious classification mistakes? 2

(b) Explain haunting graveyard in code and why they are haunted? 2

(c) Draw a class diagram for the classes showing various relationships among classes: Cache, ALU, Program Counter, Computer, memory. 2

End of Questions