*** Iqra National University, Peshawar***

**Department of Computer Science**

**Summer Semester 2020**

**Final – Term Examination**

**Course Code: 102007052**

**Course Title: Software Engineering**

**Instructor: Engr. Ghassan Husnain**

**Program: BS CS (Software Engineering) Total Marks: 80 Time Allowed: 4 Hours**

**Note: Only those students attempt this paper who had missed the Mid Term**

**Q.1:** Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following systems: *(16 marks)*

* A system to control anti-lock braking in a car
* A virtual reality system to support software maintenance
* A university accounting system that replaces an existing system
* An interactive travel planning system that helps users plan journeys with the lowest

environmental impact

**Q.2:** Suggest how an engineer responsible for drawing up a system requirements specification might keep track of the relationships between functional and non-functional requirements. *(08 marks)*

**Q.3:** To reduce costs and the environmental impact of commuting, your company decides to close a number of offices and to provide support for staff to work from home. However, the senior management who introduce the policy are unaware that software is developed using agile methods, which rely on close team working and pair programming. Discuss the difficulties that this new policy might cause and how you might get around these problems. *(10 marks)*

**Q.4:** Discover difficulties/ ambiguities or omissions in the following statement of requirements for part of a ticket-issuing system: *(12 marks)*

An automated ticket-issuing system sells rail tickets. Users select their destination and input a credit card and a personal identification number. The rail ticket is issued and their credit card account charged. When the user presses the start button, a menu display of potential destinations is activated, along with a message to the user to select a destination. Once a destination has been selected, users are requested to input their credit card. Its validity is checked and the user is then requested to input a personal identifier. When the credit transaction has been validated, the ticket is issued.

**Q.5:** Using your knowledge of how an ATM is used, develop a set of use cases that could serve as a basis for understanding the requirements for an ATM system. *(14 marks)*

**Q.6:** Identify and briefly describe four types of requirement that may be defined for a computer-based system. *(8 marks)*

**Q.7:** Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description. (*12 marks)*

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