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Daffodil International University

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Midterm Examination, Spring 2023
Course Code: CSE334, Course Title: Pervasive Computing
Level: L4 Term: T1 Batch: (B-56)

Time: 01:30 Hrs **Marks: 25**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.		In a large urban city, there has been a rising concern for the safety of women who commute to and from work or school. Many women have reported instances of harassment and even assault while waiting for public transportation, walking through poorly lit areas, or using rideshare services. The city officials are exploring ways to use pervasive computing to improve women's safety. Identify the types of pervasive computing technologies you will use? Describe that how a pervasive computing system can ensure the privacy and security of women using the system?	**[Marks 7]**	**CO1**
2.	***a)***	Explain the Smart Control Internal Structure with proper diagram	**[Marks 5]**	**CO2**
3.	***a)***	John is a software developer working for a tech company that develops applications for pervasive computing devices such as smart homes and wearable devices. The company is planning to release a new product that allows users to control their home appliances using their smartwatch. However, before releasing the product, John and his team need to identify and illustrate the security challenges in pervasive computing to ensure that the product has been designed and tested to ensure the safety and security. Analyze the security challenges based on above scenario and how can you evaluate to ensure that the devices and data are secure?	**[Marks 2+3]**	**CO3**
4.	***a)***	In an RSA cryptosystem, a particular user B generates a public key using two prime numbers, p and q, such that p = 13 and q = 17. If the private key of B is 77, then what is the corresponding public key of B?	**[Marks 5]**	**CO4**
	b)	If the public key of an RSA cryptosystem is (11, 437) and the private key is 187, what are the two prime numbers that were used to generate the keys?	**[Marks 3]**	