Question 1 (2 marks) Briefly explain how the spiral model differs from the waterfall model and give an advantage and a disadvantage of each.

Spiral model: planning design develop test deploy review and repeat

Waterfall: planning design develop test deploy review ending

Waterfall

AD: have whole timeline and clear scope for project

DIS: inelasticity for failure, scope creep may causse termination

Spiral model (you don’t know dis)

AD: super flexiable, easy satisfy stakeholder because they can see the growth of software

DIS: not clear with scope and easy to fall back track if review part found it is not good

Question 2 (2 marks) A dessert store specializing in making cake and cookies would like their dessert items to be modelled in an object-oriented system. Study the description below and draw a UML class diagram to model the dessert items and their relationships. Include in your class diagram all the multiplicities. “A cake can be a light chiffon cake, a butter cake, a nut cake, a cheesecake or a fruit cake. A nut cake can have four to six types of nuts and a fruit cake can include two to three types of fruits. Acheesecake may optionally include one type of fruit. The two main types of cookies that the store makes are nut cookies and chocolate cookies. Up to two types of nuts can be included in the nut cookies.” (you don’t know rewrite it)

Question 4 Identify the actors and objects in the system described below: (2 marks) SYT (abbreviated for Sell Your Toys) is an online toy club for children to sell their old toys. Access to the SYT website is restricted to registered members only. To register for an account, the child must fill in a SYT online registration form which would be validated by an administra tion staff. Once an account is successfully created, the registered member can login to SYT to browse pictures of the toys uploaded by other registered members. When a registered member wants to advertise an old toy to sell, he/she must enter the purchase date and purchase price of the toy using an online form on SYT and must upload a picture of the toy. SYT would auto matically compute the maximum price that the toy can be sold for and would display the price on the screen. The registered member can either confirm that he/she wants to go ahead with the for sale advertisement or, if not happy with the maximum price, cancel the whole process.

Actors: child, staff

Object: toy, SYT online registration form, website, account, advertise

Describe the pipe and filter software architecture, and give one advantage and one disadvantage of it.

Question 7 (2 marks) Describe the Fac¸ade design pattern. Give an example to show when it would be suitable to use this pattern. (you forgot how to descripted, and example)

So façade is a integration of subsystem and give the group with a general port for external connection to hide the complexity of subsystem, client. For example, transfer to pdf tool is often façade because they may need to turn different doc (txt. Words, powepoint) to pdf but there are only one port to drop document

Question 10 (2 marks) Describe how requirements negotiation in agile software development methodologies differs from requirements negotiation in traditional software development methodologies.