November 7, 2013

[**Student Name:** ……..…..]

K i n g S a u d U n i v e r s i t y
College of Computer and Information Sciences
Computer Science Department

Course Code:	CSC 342	
Course Title:	Software Engineering	
Semester: 1	Fall 2016	
Exercises Cover Sheet:	**Solution Midterm 1**	**1 h 30 mn**

Student Name:	…….
Student ID:	…….
Student Section No.	…….

Tick the Relevant	Computer Science B.Sc. Program ABET Student Outcomes	Question No. Relevant Is Hyperlinked	Covering %
	a) Apply knowledge of computing and mathematics appropriate to the discipline;	-------	-------
√	b) Analyze a problem, and identify and define the computing requirements appropriate to its solution	**3**	**53%**
√	c) Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;	-------	------
√	d) Function effectively on teams to accomplish a common goal;	--------	------
√	e) Understanding of professional, ethical, legal, security, and social issues and responsibilities;	**2**	**33%**
	f) Communicate effectively with a range of audiences;	-------	------
	g) Analyze the local and global impact of computing on individuals, organizations and society;	-------	------
	h) Recognition of the need for, and an ability to engage in, continuing professional development;	-------	------
√	i) Use current techniques, skills, and tools necessary for computing practices.	-------	------
	j) Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;	-------	------
√	k) Apply design and development principles in the construction of software systems of varying complexity;	-------	------
√	General Question	**1**	**14%**

November 7, 2013 [**Student Name:** ……..…..]

Exercise 1: ***Answer with True or False*** *(4 points)*

	T	F
There are many different types of software system but there is an universal set of software techniques that is applicable to all of these.		X
Dependability is one of the essential attributes of good software.	X	
Computer-aided software engineering (CASE) one of the stages of software development.		X
Design is often referred to as the "what" of the system and requirements as the "how".		X
Maintenance is one of the stages of software development.	X	
User requirements: are defined using natural languages, tables and diagrams.	X	
Requirements can be classified in to two types, namely, functional requirements and non-functional requirements.	X	
Functional user requirements may be high-level statements of what the system should do.	X	

Exercise 2: ***Ethics & Professional Practice*** *(10 points)*

Ali used to work in a small computer firm and there is no agreement that Ali's work will be the property of the company. Ali now working for a much larger computer firm and there is an agreement that Ali's work will be the property of the company.

Ali tries to adapt the software he ever helped to make in the small firm. Ali installs the software and makes some changing which make his boss interested. According to the agreement, Ali's work will be the property of the large firm. The large firm does not want to negotiate with the small firm.

1. Is there a violation of the software code of ethics? Justify your answer.
2. If yes, give the Code of Ethics that justify your answer.

Answer:

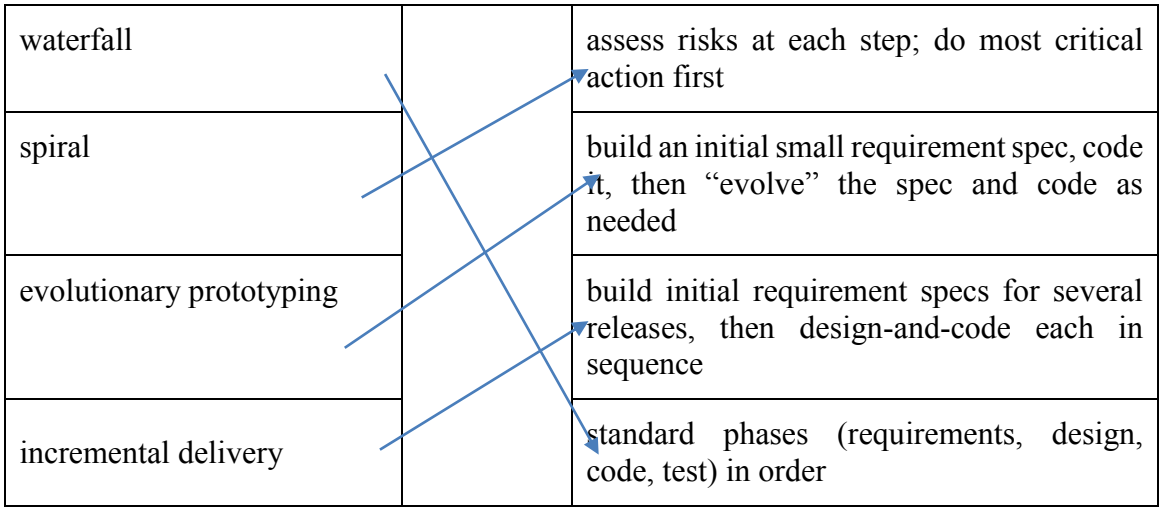
1. **1.** Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code. Derek action to adapt the software from the small firm has revealed the confidential information which must not be published to other firms. Derek tries to make a confession to his previous firm that he has made adaption on the software developed in the firm. Now, it will

be grabbed by the large firm as their property. Derek insists the previous firm to make a patent about their trade-secret.

2. . . 2.02 – 2.03 -3.13 . . .

Exercise 3: ***Process Model and Analysis*** *(16 points)*

1. Match each lifecycle model with its definition, by drawing a line connecting them.



waterfall		assess risks at each step; do most critical action first
spiral		build an initial small requirement spec, code it, then "evolve" the spec and code as needed
evolutionary prototyping		build initial requirement specs for several releases, then design-and-code each in sequence
incremental delivery		standard phases (requirements, design, code, test) in order

2. Consider the following problem description: Library system: The user interface for this system shall be implemented as simple HTML without frames or Java applets. Library system allows members to borrow books for a defined time period. The system allows each member to search and find the book before borrow it on eight seconds. But to borrow books the member, who can use his PC or mobile platforms, must enter his user name and password. Besides borrow and return books, a librarian must also handle the addition and removal of members and adds new books. When a book is returned, the librarian must update the books states. A librarian can also borrow books for himself.
    a. 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 system.
    b. Identify the functional and non-functional requirements for the above description.

[Student Name: ……..…..]

Answer:

Result					
Question No.	**Relevant Student Outcome**	**SO is Covered by %**	**Full Mark**	**Student Mark**	**Assessor's Feedback**
1	General Question	14%	4		
2	e	33%	10		
3	b	53%	16		
Totals		**100%**	**30**		
I certify that the work contained within this assignment is all my own work and referenced where required. **Student Signature:** **Date:**					**Feedback Received:** **Student Signature:** **Date:**