هندسة وجيات

Kafrelsheikh University
Faculty of Engineering
Electrical Engineering Dept.
Subject: Software Engineering
(Full Mark: 90 Marks)

Third Year Students
(Computer & Control Systems)
Final Exam
Date: 3 / 6 / 2018
Time Allowed : 3 hours

The course code: ECS3109	This course intend the following ILOS according to (NARS 2009): a (4, 5, 7, 11, 14) - b (5, 10, 14 18) - c (9, 10, 12, 13, 14)- d(2, 6, 7, 8)

Answer *ALL* the following question: (*in two pages*)

Question 1 *(20 Marks)*

a) What are the software development paradigms (models)? By drawing, discuss one of them

b) For an effective management, accurate estimation of various measures is a must. Mention the main elements in the Project estimation.

c) Some risk can affect the software project during work. What are these risks can be? How can they managed by the project management system

d) Mention the main requirement *engineering process* which used in the Requirement stage of Software Engineering Product.

Question 2 *(20 Marks)*

a) i) What are the essential elements in the software project management?
ii) What are the responsibilities of project manager?

b) What are the categories used in User interface design? Mention the elements for each category. Give example for each.

c) There are several tools for software analysis and design. Mention them briefly.

d) Mention the suitable analysis tool of each of the following applications:

i) Specific mathematical problem with "Fortran" programing language.

ii) Online Sales processing.

iii) Electronic Documentations or Dictionaries

iv) Online Internet Troubleshooting.

Question 3 (25 Marks)

a) Software design has several strategies. One of the software design strategies is the Object Oriented Design process. According to this statement:
   i) Mention types of these strategies with examples.
   ii) Mention the important concepts of Object Oriented Design.

b) There are two main software testing approaches used to evaluate of the software against requirements gathered from users and system specifications. Mention these approaches briefly. (use drawing schema to explain your answer)

c) Maintenance stands for all the modifications and updations done after the delivery of software product.
   i) Mention the reasons of these modifications in the software product.
   ii) Draw a diagram represents the distribution of maintenance *cost* corresponding to software cost.

d) Mention the software metrics and measures used by analysts.

Question 4 (25 Marks)

a) By drawing, what are the main steps of Re-engineering any Software Product?

b) i) What does it mean "**Standard ISO 9000**"? Give examples for the organizations concerns with the quality standard and Quality Assurance.
   ii) Mention the quality measures of ISO that concerns the software products.

c) Mention the main activates of the Software Quality Product.

d) A new "**Collage**" is under construction. It needs a ***Fully*** software engineered system to manage the work inside it.

   From your study to the Software Engineering course, what are the required steps needed to *fully design* this software product? *(Write actual needs for each stage of the main steps of software life cycle)*

With my best wishes

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