

**THIS PAPER CONTAINS 2 SECTIONS, 15 QUESTIONS**

**CANDIDATES SHOULD ANSWER ALL QUESTIONS**

**THERE ARE 100 MARKS IN TOTAL FOR THE PAPER**

**SECTION A**

*Answers for Section A are to be written in the spaces provided on the exam paper.*

**QUESTION 1**

[5 marks]

Give three reasons why it is difficult to build software systems that meet client requirements and are delivered on-time and on-budget?

**QUESTION 2**

[5 marks]

Define each of the following terms.

*a) functional requirement*

*b) non-functional requirement*

*c) business requirement*

*d) viewpoint.*

**QUESTION 3**

[5 marks]

Give an example of an *unverifiable* requirement, and then rewrite that requirement so that it is verifiable.

**QUESTION 4**

[5 marks]

Estimating the *time* required to develop a software system is difficult. How might you reduce the *error* of such an estimate at the beginning of a project?

**QUESTION 5**

[5 marks]

What is a *function point* ?

**QUESTION 6**

[5 marks]

“Project requirements continually change, but change can be easily accommodated because software is flexible”. Do you agree or disagree with this claim? Give reasons.

**QUESTION 7**

[5 marks]

Suggest *two* possible metrics for the *quality of software documentation*. Comment on the *cost* and *validity* of each of your metrics.

**QUESTION 8**

[5 marks]

Suggest ways of measuring the effectiveness of a new *code inspection* process introduced by your software development organisation.

**QUESTION 9**

[5 marks]

What is the difference between *defect testing* and *debugging* ?

**QUESTION 10**

[5 marks]

What is a *software lifecycle* ?

## **SECTION B**

*Answers for Section B are to be written in the examination answer booklets.*

### **QUESTION 11**

Compare and contrast *three (3)* different techniques for measuring programmer productivity. Comment on the ease of estimation, accuracy and fairness of each technique. [15 marks]

*Questions 12 to 15 concern the development of a software system to be used at Australian airports for new passports and automatic airport scanners incorporating “facial biometric technology [computer face recognition] as an effective means of verifying identity” [Hon A Downer, Media Release, 23 June 2004]. The introduction of such software systems is provided for in the Australian Passport Act 2005. You are the project manager for a company that will develop a new software system, SafeIsland, for this task.*

### **QUESTION 12**

Identify the stakeholders for the *SafeIsland* system? [5 marks]

### **QUESTION 13**

Identify *four (4)* requirements for the *SafeIsland* system. Include at least one functional requirement and one non-functional requirement. [12 marks]

### **QUESTION 14**

For each of the four requirements identified in question 13, suggest a way to test that the requirement is satisfied by the *SafeIsland* system. [12 marks]

### **QUESTION 15**

Identify significant risks which might prevent you from meeting the requirements of the *SafeIsland* system, and suggest a mitigation or avoidance strategy for managing each risk. [6 marks]

**END OF EXAMINATION PAPER**