

May 2015 - **04-SOFT-A5**

04-SOFT-A5: Requirements and Specifications

National Examination (3 hours duration)

Notes:

1. If a doubt exists as to the interpretation of any question, the candidate is urged to submit, with the answer sheets, a clear statement of any assumptions made.
2. This is an open-book exam with one book of the candidate's choice.
3. No calculator is permitted (nor is one needed).
4. Most questions are open-ended and require an answer in essay format. The candidate should write clearly and organize her or his answer with care.
5. This exam has 11 pages including this page and space for answers. Write your answers in the space provided. Do not be verbose.

9. Statement: Quality requirements are often more difficult to specify than data requirements. Reason: Quality requirements often affect more system components than data requirements and the specification of quality levels is often made in relation to sliding scales.

10. Statement: Focus groups can help make sure that each stakeholder gets something he/she wants from the product. Reason: The results of a focus group meeting include lists with each stakeholder's top wishes.

Part 2 (25 points): Requirements Elicitation. Describe the process of requirements elicitation using no more than two pages. Your essay should cover issues such as barriers to elicitation, things to elicit, the suitability of elicitation techniques, analysis of stakeholders, interviews, focus groups, and prototypes.

(Your answer to Part 2 should end before this line.)

May 2015 - 04-SOFT-A5

Part 3: Non-functional Requirements (25 points). Answer, in essay format, the following questions regarding non-functional requirements.

- (i) What are non-functional requirements? (5 points)
- (ii) How do non-functional requirements map to a use-case model? (5 points)
- (iii) Suppose you are involved in developing software requirements for a life-critical avionics system. Describe three non-functional requirements (or software quality attributes) that this system should possess. You should describe each of the three requirements briefly. (15 points)

4

(Your answer to Part 3 should end before this line.)

Part 4: Excellent Requirements and Requirement Collections (20 points).

1. Excellent requirements are:

- (i) Complete
- (ii) Correct
- (iii) Feasible
- (iv) Necessary
- (v) Prioritized
- (vi) Unambiguous
- (vii) Verifiable

Briefly explain each of the seven characteristics listed above (7 x 2 points = 14 points).

May 2015 - **04-SOFT-A5**

2. Excellent requirements collections are:

- (i) Consistent
- (ii) Modifiable
- (iii) Traceable

Briefly explain each of the three characteristics listed above (3 x 2 points = 6 points).

(Your answer to Part 4 Question 2 should end before this line.)