THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS

UNIVERSITY OF LONDON **CO3353 ZA**

BSc Examination

COMPUTING AND INFORMATION SYSTEMS, CREATIVE COMPUTING and COMBINED DEGREE SCHEME

Software Engineering Project Management

Thursday 17 May 2018: 10.00 – 12.15

Time allowed: 2 hours and 15 minutes

There are **FIVE** questions on this paper. Candidates should answer **THREE** questions. All questions carry equal marks and full marks can be obtained for complete answers to **THREE** questions. The marks for each part of a question are indicated at the end of the part in [.] brackets.

Only your first **THREE** answers, in the order that they appear in your answer book, will be marked.

There are 75 marks available on this paper.

A handheld calculator may be used when answering questions on this paper but it must not be pre-programmed or able to display graphics, text or algebraic equations. The make and type of machine must be stated clearly on the front cover of the answer book.

Question 1

a) Early software engineering practices were based on 'top-down' methodologies. Briefly describe the weaknesses of this approach.

[5 marks]

b) Briefly describe a methodology which can be used to overcome the weaknesses you identified in your answer to question 1a.

[5 marks]

c) It is generally recognised that software development is a difficult and risky process. Identify **THREE** major sources of risk in project development.

[6 marks]

d) The development of a bespoke software system can be thought of as a process with three 'actors'. Identify these **THREE** actors.

[3 marks]

e) Discuss how **EACH** of these actors might contribute to the failure of the development process.

[6 marks]

Question 2

a) An artefact in the context of software development is known as an output from the project or product. Artefacts need to be signed off at different stages of software development to allow the lifecycle objectives to be met. Discuss the artefacts that need to be signed off at the end of the inception phase of development.

[10 marks]

b) Discuss the benefits of using Unified Markup Language (UML).

[6 marks]

c) Discuss the major drawbacks of using the Waterfall model for software development.

[9 marks]

Question 3

a) Describe the **FOUR** main activities in the requirements engineering process.

[12 marks]

b) A major component of a costing calculation for software development is to estimate the scale of the problem. Discuss **TWO** basic methods for estimating the scale of the problem.

[6 marks]

c) One method for controlling the variation in cost estimations in projects is through the use of quality gates. Provide a brief description of this concept.

[7 marks]

Question 4

a) Identify **THREE** major criteria for evaluating a use case model.

[3 marks]

b) Describe **FOUR** types of UML tools which may be used to create diagrams in a use case.

[8 marks]

c) The project manager is responsible for managing all the tasks or activities that accomplish the project objectives. Discuss at least **FIVE** of these activities.

[10 marks]

d) Briefly discuss what the *lean philosophy* is in relation to keeping formal documents.

[4 marks]

Question 5

a) The role of the team in software engineering project management is of critical importance. Discuss the key attributes of a successful team.

[8 marks]

b) Define what is meant by *cohesion* in software design.

[5 marks]

c) Provide a short description of the characteristics of Scrum programming.

[8 marks]

d) Define what is meant by *fault avoidance* and *fault tolerance*.

[4 marks]

END OF PAPER