

**National College of Ireland**

**Postgraduate Diploma in Mobile Technologies – Part-time – Year 1 – PGDMT 1**

**Autumn/ Repeat Examinations – 2014/15**

**Wednesday 12<sup>th</sup> August 2015  
6.30pm – 8.30pm**

---

**Mobile Architecture and Security**

Prof. John Murphy  
Mr. Mikhail Timofeev

Full marks will be awarded for complete answers to **FOUR** questions

**Duration of exam:** 2 hours

**Attachments:** None

- 1.
- (i) List *Performance Considerations* (i.e. Pros & Cons) for each of the following types of application:
- a. Native
  - b. Web
  - c. Hybrid
- [10 marks]
- (ii) What are the most common *Design Issues* in mobile application development? What specific recommendations would you give to a developer when it comes to *Data Access*, *User Interface* and *Validation* aspects of developing an application?
- [15 marks]
- 2.
- (i) Give two examples of *Design Patterns* in each of the following categories:
- a. Creational
  - b. Structural
  - c. Behavioural
- [10 marks]
- (ii) Describe what *Service Interface* is? Provide information on the implementation details, such as *Network Protocol*, *Data Formats* and *Security* and list any related patterns.
- [15 marks]
- 3.
- (i) Explain how *External Service Integration* works in mobile applications?
- [10 marks]
- (ii) Describe *Business-to-Business (B2B)* mobile strategy. Explain what MEAP does in this context?
- [10 marks]
- (iii) What is an *Application Life Cycle*? What are the possible states that any mobile application can swing between?
- [5 marks]
- 4.
- (i) What is *Security Development Life Cycle*? How useful is it to follow its recommendations in any development process?
- [10 marks]
- (ii) Describe the logic behind choosing an appropriate *User Interface Technology*?
- [5 marks]
- (iii) Define the following *Presentation Components*:
- a. User Interface
  - b. Presentation Logic
  - c. Presentation Model
- [10 marks]