



DUBLIN INSTITUTE OF TECHNOLOGY

BSc. (Honours) Degree in Computer Science

Year 4

SUMMER EXAMINATIONS 2015/2016

ENTERPRISE SYSTEMS & ARCHITECTURE [SENG4350]

MR C. CAWLEY
DR. DEIRDRE LILLIS
MR. P. COLLINS

FRIDAY 13TH MAY 4pm – 6pm.

TWO HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER **THREE** QUESTIONS OUT OF **FOUR**.

ALL QUESTIONS CARRY EQUAL MARKS.
ONE COMPLIMENTARY MARK SHALL BE AWARDED.

- 1. (a)** (i) Outline what is meant by the term *Information System* (IS) in the context of *Enterprise Computing*. [3 Marks]
- (ii) Explain the role of IS within the *Enterprise* environment. [6 Marks]
- (iii) Discuss what you consider to be the main components of an *Information System*. In your answer discuss the various IS activities that take place within an enterprise environment. [12 Marks]
- (b)** For each of the following types of systems, describe how they support the roles of managers and executives. In your answer, ensure you provide practical examples.
- (i) Management Information Systems
 - (ii) Decision Support Systems
 - (iii) Executive Information Systems
- [4x3 Marks]

2. (a) Listed below are Porter's five competitive forces.

- (i) Identify three *competitive strategies* that an enterprise could pursue to counter these forces. [3 Marks]
- (ii) For each of the three strategies identified in your answer to (i), discuss how Information Technology / IS could be utilised to support those strategies. [5x3 Marks]

- *Rivalry of competitors within its industry*
- *New entrants into an industry and its markets*
- *Substitute products that may capture market share*
- *Bargaining power of customers*
- *Bargaining power of suppliers*

(b) Within an *Enterprise* context, *Agility* has been described as

“the ability to prosper in rapidly changing, continually fragmenting global markets by selling high-quality, high-performance, customer-configured products and services by using Internet based technologies”

Using the following three headings, discuss how a company could seek to be agile, providing examples of how it's IT infrastructure and business software would support it.

- (i) Customers
- (ii) Partners
- (iii) Operations

[5x3 Marks]

- 3. (a)** A *Customer Relationship Management* (CRM) system should provide an *Enterprise* with mechanisms for determining *value*, *loyalty* and *profitability* of customers. Using the CRM cycle to frame your answer, discuss ways in which a CRM system would support these goals.

[12 Marks]

- (b)** Discuss what you consider to be the main challenge that faces the implementation of any CRM system and how it can be addressed.

[9 Marks]

- (c)** Discuss three benefits that a CRM provides to an organisation. For each of the three benefits, ensure you provide an example of how it either directly or indirectly affects the organisation's profitability.

[12 Marks]

- 4. (a)** **(i)** Describe what is meant by the term *Enterprise Service Bus* (ESB). As part of your answer, illustrate the architecture involved.

[6 Marks]

- (ii)** Transformation is one of the integration principles underpinning an ESB. Describe three other integration principles.

[9 Marks]

- (b)** **(i)** Describe what is meant by *Publish-Subscribe* in the context of *Message Oriented Middleware*.

[6 Marks]

- (ii)** Given the following business scenario, identify and describe an integration pattern that could be employed to provide a solution to the requirement:

A materials procurement system needs to send (asynchronous) 'request for quote' messages to multiple vendors and, in turn, receive a single response with the best quote.

[12 Marks]