

## NATIONAL EXAMS DECEMBER 2011

### 98-IND-B4, Design of Information Systems

3 hours duration

#### NOTES:

1. If doubt exists as to the interpretation of any question, the candidate is urged to submit with the answer paper a clear statement of any assumptions made.
2. No calculator permitted. This is a Closed-Book exam.
3. The exam is comprised of four parts. Answer any 20 from Part A (20 x 2 each = 40 marks), any 2 from each of Parts B & C (2 x 10 each = 20 marks per section), and Part D (20 marks). Only the first answers, as they appear in your answer book, will be marked. Clearly show, at the start of each answer, the section/number of each question you are answering.
4. Parts B, C & D can be answered in essay or essay plus point form format. Diagrams can be used, if appropriate. In all cases, clarity and organization of the answer is important.
5. Use the Examination Booklet(s) provided for your answers.

**PART A:** Select **twenty** (20) terms from the following list and briefly explain them in a sentence or two. Limit your answer to no more than 50 words. Simply expanding an acronym correctly is insufficient for full marks. (20 x 2 marks each = 40 marks)

Acceptable Use Policy	IT Governance
Authentication	JAD
Batch Processing	Java
Bluetooth	Key Field
Bullwhip Effect	Linux
CSF	Normalization
Clickstream Tracking	Open Source Software Initiative
Cloud Computing	Portfolio analysis
Controls	Post Implementation Audit
Cycle Time	RFP
DSL	SaaS
Data Administration	SQL
Database Conceptual Schema	Scoring Model
DoS Attack	Sociotechnical design
End-user Development	Tangible Benefits
Feasibility study	WAP
Information Rights	Web 2.0
Intangible Benefits	WiMax

**PART B:** Select **two** (2) questions from the following list and answer them. You should provide a full page (or more) of explanation for each question.

(2 x 10 marks each = 20 marks)

- B1. What is a LAN? Identify its various hardware and software components and describe the function of each.
- B2. Discuss the principles underlying a DBMS. How are the core capabilities (data definition, data dictionary, and data query/manipulation) typically implemented? Illustrate, where appropriate, by referring to a popular DBMS.
- B3. Identify and describe the principal technologies and standards for wireless networking, communications, and Internet access.
- B4. Discuss technologies and tools for protecting information resources. Your answer should consider five of the following: controls; firewalls, intrusion detection systems, and antivirus software; securing wireless networks; encryption and public key infrastructure; ensuring system availability.
- B5. Define IT infrastructure from both a technology and a services perspective. Identify and describe the common components of IT infrastructure.

**PART C:** Select **two** (2) questions from the following list and answer them. You should provide a full page (or more) of explanation for each question.

(2 x 10 marks each = 20 marks)

- C1. Discuss four of the following six business objectives, and their reliance on information systems: operational excellence, new products/services/business models, customer and supplier intimacy, improved decision making, competitive advantage, and survival.
- C2. Discuss how IS/IT departments can manage project risk and system-related change. Consider implementation and change management, controlling risk factors, and overcoming potential user resistance.
- C3. Discuss the following major ethical, social, and political issues raised by information systems: information rights and obligations, property rights and obligations, accountability and control, system quality, and quality of life.
- C4. Discuss the special features of e-commerce, digital markets, and digital goods that distinguish these from traditional commerce, markets and goods. In your discussion, be sure to consider information asymmetry, marginal cost of products/services, and disintermediation. Provide examples, where possible.
- C5. Discuss the modern digital firm and how information technology supports e-commerce with various stakeholders. Include consideration of customers, suppliers, business partners, remote office and work groups, factories, and other important stakeholders.

**PART D:** Compare/contrast the successful development and implementation of (i) a personal support application (such as a spreadsheet, a database application, or an engineering design program) and (ii) an application designed for many users, and which contains a suite of applications (such as a comprehensive accounting package, a supply chain management suite, or an internet-based e-commerce application).

Identify important similarities and differences in the process which should be followed. Your answer should consider such things as analysis (to define functional requirements), design (including usability and security), development (including programming and make/buy options), implementation (including testing and conversion), production, and ongoing maintenance. You should provide more than a single page answer for this question.

(20 marks)