NATIONAL EXAMS DECEMBER 2010

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 15 from Part A (15 x 2 each = 30 marks), any 3 from Part B, (3 x 10 each = 30 marks), and any 2 from Parts C & D (2 x 10 each = 20 marks per section). Only the first answers, as they appear in your answer book, will be marked. Clearly show, at the start of each answer, the 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.

Marking Scheme

Part A: 15 x 2 per question =	30
Part B: 3 x 10 per question =	30
Part C: 2 x 10 per question =	20
Part D: 2 x 10 per question =	20
	100

PART A: Select **fifteen** (15) terms from the following list and briefly explain them. Limit your answer to no more than 50 words. Simply expanding an acronym is insufficient.
(15 x 2 marks each = 30 marks)

3G Networks	GSM
Analytical CRM	Information asymmetry
ASP	JAD
Batch Processing	Legacy system
Bluetooth	Middleware
Business Process Reengineering	Normalization
Change agent	On-demand computing
Click fraud	Pharming
CSFs	Portfolio analysis
Data cleansing	RSI
DFD	Scalability
Direct cutover	Sociotechnical design
EDI	Touch point
Enterprise applications	Unix
Feasibility study	Wiki

PART B: Select **three** (3) questions from the following list and answer them. You should provide a full page (or more) of explanation for each question.
(3 x 10 marks each = 30 marks)

B1. Discuss how IT infrastructure has evolved over the past decades. Consider pre mainframe, mainframe, mini, PC, client/server, and internet computing periods.

B2. Describe developments in computer processors, memory chips, storage devices, telecommunications and networking hardware and software, software design, and standards that have greatly increased computing power while reducing costs.

B3. Discuss major hardware platform trends. Select at least three (3) of the following: Integration of computing & telecommunications platforms, grid computing, on-demand/utility computing, autonomic computing, edge computing, virtualization & multicore processors

B4. Discuss the changing sources of system and application software, from in-house development to packages (and enterprise systems), ASPs, and outsourcing.

B5. Discuss how modern databases improve business performance and decision-making. Your answer should consider such aspects as data warehousing, data marts, business intelligence, multidimensional data analysis, and data mining. Provide examples.

B6. Discuss the wireless revolution, in terms of wireless devices, cellular systems (networks, generations, standards), wireless computer networks and internet access (bluetooth, Wi-Fi, WiMax, broadband cellular wireless), and RFID.

B7. Discuss information system vulnerability and abuse, and why systems are vulnerable. Your answer should consider internet vulnerabilities, wireless security challenges, malicious software, cybervandalism, computer crime, and other challenges.

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 non-technology approaches management can use to improve security and control of an organization's IS. Your answer should consider policies, controls, best practices, risk assessment, audits, and other important means.

C2. Reducing the cost of business processes is a top concern of CIOs and other IT executives. Discuss how business processes can be improved through BPR, TQM, 6-Sigma, and other modern approaches. Provide examples, if you can.

C3. Describe and compare/contrast ***any three*** of the following alterative methods for developing information systems: systems life cycle, prototyping, application software packages, end-user development. Your answer should consider strengths and weaknesses of the method, and where it is best used.

C4. Compare/contrast CASE, RAD, JAD, agile development, and extreme programming as modern approaches for application development. What are the major strengths and weaknesses of each approach?

C5. Describe the most important aspects of core activities in the system development process (systems design, systems analysis, maintenance, programming, testing, conversion, production). Your answer should place these activities into the correct sequence.

PART D: 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)

D1. Discuss M-Commerce services and applications, including content and location-based services, banking and financial services, wireless advertising, games and entertainment. What are the current major challenges and how are organizations addressing these?

D2. Discuss the principal risk factors in information systems projects. What should be done to manage such risks?

D3. Compare/contrast the principal capital budgeting models used to evaluate proposed information system projects (such as ROI, payback, NPV, IRR). How effective are these methods in capturing both tangible and intangible benefits? If they are ineffective, what other approaches can be used?

D4. Discuss the challenges of managing IT infrastructure (dealing with infrastructure change, agreeing on infrastructure management and governance, making wise infrastructure investments), and possible management solutions to these challenges.

D5. Discuss CRM Systems -- what they are, what modules are typically included in such a system, and how firms use them. Compare/contrast an operational CRM and an analytical CRM.