

NATIONAL EXAMS DECEMBER 2008

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.

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)

ASP	Malware
Authentication	NOS
Balanced Scorecard	OLAP
Blade server	Pharming
Bluetooth	Portfolio analysis
Carpal Tunnel syndrome (CTS)	Primary key
Clickstream tracking	PKI
Data administration	RFID
Digital certificate	RFP
DNS	SOAP
ERM	SQL
Extreme Programming (XP)	Tacit knowledge
Firewall	Virtualization
Immanuel Kant's Categorical Imperative	Wiki
JAD	XML

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

(3 × 10 marks each = 30 marks)

- B1. Discuss major hardware and software platform trends and emerging technologies. Do you expect all of these trends to be equally important to engineers?
- B2. Discuss the major technical components of a modern database management system. Your discussion should include identification of the major components and a brief explanation of each. Name two popular DBMSs in use today.
- B3. Describe three major system development methodologies in use today. What are the major strengths and weaknesses of each methodology? Provide an example of where each would likely be appropriate to use.
- B4. What are the five most important security and system quality issues facing organizations today? What should organizations do to minimize risks from these?
- B5. Identify and describe the principal technologies and standards for wireless networking, communication, and Internet access.
- B6. The Standish Group is known for their studies of information system project failure, and they say that most projects are late, over budget, lack desired functionality, or are simply cancelled before completion. Discuss the important project management processes and techniques which should be used in information system projects to help overcome these common problems. Both the project definition phase and project management phase should be considered.

PART C: Select **two** (2) questions from the following list and answer them. You should provide a full page of explanation for each question. (2 x 10 marks each = 20 marks)

- C1. Compare/contrast the technical approach and the behavioural approach to information system development. Which, if either, do most organizations prefer? Are there are other approaches? If so, briefly discuss them also.
- C2. Describe the major classes of information systems in use within and between businesses and organizations today. Your description should include identifying these classes, briefly explaining their purpose, and providing an example application of each.
- C3. Discuss how databases are used today to improve business performance and decision making. Provide specific examples of such improvements.
- C4. Developing and introducing a new information system often results in significant organizational change. Such change may result from automation, rationalization, business process reengineering, and/or Six Sigma TQM initiatives. Compare/contrast any two of these, considering risk, return, speed of implementation, etc. How should change management be incorporated into such initiatives?
- C5. Discuss how an ethical analysis should be done for a major information system project. What would be the major steps? Identify and explain several ethical principles that might be applied to decision making.

PART D: Select two (2) questions from the following list and answer them. You should provide a full page of explanation for each question. (2 x 10 marks each = 20 marks)

- D1. Discuss the role of enterprise systems (ES) in modern organizations. Who are three major providers of such systems? How can an organization ensure it receives value from an ES (consider both installation and use)?
- D2. Discuss the role of information and communication technologies in improving modern supply chains.
- D3. Discuss e-commerce and how the internet enables it. In what ways is e-commerce different from historical commerce? Identify some popular internet business models.
- D4. The internet provides new means of achieving 'customer intimacy'. Discuss current methods firms are using for developing closer, yet more cost effective, relationships with their customers.
- D5. Discuss how information systems help knowledge workers to become more efficient and effective. Provide examples of applications that are used in the engineering profession.