

# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMUNICATION AND INFORMATION SCIENCE  
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

## MSC IN LIBRARY AND INFORMATION SCIENCE

STAGE I FIRST SEMESTER OCTOBER 2005 EXAMINATIONS

ILI 5101 ADVANCED INFORMATION TECHNOLOGY APPLICATIONS

TIME: 3 HOURS + 30 MIN READING

### INSTRUCTIONS TO CANDIDATES

1. THIS QUESTION PAPER CONTAINS SIX QUESTIONS.
  2. ANSWER ANY **FOUR** QUESTIONS.
  3. EACH QUESTION CARRIES 25 MARKS.
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1. Outline the advantages and disadvantages of using the following in website development.

(a) P H P	[5 marks]
(b) A S P	[5 marks]
(c) JavaScript	[5 marks]
(d) VBScript	[5 marks]
(e) HTML	[5 marks]

- 2.(a) A database administrator explained to the management that in a distributed database environment, the data comprising the database is held in a number of physical separate locations connected by a network which can be accessed by the users independent of their location. He (DBA) said that the distributed database approach offers a number of advantages.

However the systems administrator argued that a distributed database will introduce a number of problems not encountered by a centralised database approach.

- (i) As an Information Technology Application specialist compare and contrast the two approaches so that the organization can make an informed decision from your points. [15 marks]

- (b) Discuss the potential impact of e-commerce to the digital divide in Zimbabwe  
[10 marks]
3. A web-based hospital de-identifies patient record by removing names and address, leaving only the patient's postal code and date of birth as an identifier. These records are then sold to researchers and drug companies.
- (a) Explain the security, ethical, social and business implications of such action.  
[15 marks]
- (b) State the seven layers of the OSI Reference Model and briefly outline the importance of each layer in network protocol design. [5 marks]
- (c) Give detailed explanation for any five application areas of the internet.  
[5 marks]
4. (a) Distinguish between a router and a bridge in networking[4 marks]
- (b) Briefly discuss the following data/information security techniques:
- (i) Passwords [2 marks]  
(ii) Firewalls [5 marks]  
(iii) Encryption [5 marks]
- (c) Describe the operating characteristics of any two web hosting software you are familiar with  
[9 marks]
5. (a) Explain the main components of e-commerce infrastructure  
[15 marks]
- (b) Information Technology systems bring together a series of vulnerabilities to data/information stored in sub systems or transient between subsystems.
- Discuss any three major categories of vulnerabilities. [10 marks]
6. (a) What is a portal site?  
[2 marks]
- (b) Compare and contrast Information Technology Systems Auditing and Intrusion detection techniques  
[18 marks]
- (c) Why have the issues and technologies of the web service-based B2B, B2C and C2C processes become so important?  
[5 marks]

**END OF EXAM**