UNIVERSITY OF GHANA

B.SC INFORMATION TECHNOLOGY, FIRST SEMESTER EXAMINATIONS: 2016/2017

CSIT417: INFORMATION STORAGE AND MANAGEMENT TECHNOLOGIES (3 CREDITS)

INSTRUCTION:

Answer all Questions in Section A
Answer any three (3) in Section B

TIME ALLOWED:

TWO AND A HALF (2½) HOURS

SECTION A

Answer all questions in this SECTION. Each question carries 10 marks

1. Describe one reason why there is current interest in Information Storage Technologies.

2. Identify and describe two (2) elements of virtuous cycle of information

3. Describe the last and final stage of Information Lifecycle Management

4. List the various RAID levels and describe the attributes of each

SECTION B

This Section contains three (3) parts. Answer ONE (1) Questions from each part. Each set of questions carries 20 marks.

PART ONE (1)

1. (a) (i). Identify components of IP SAN *(5 marks)*
       (ii). What is the difference between a native and bridged iSCSI? *(2 marks)*
       (iii). Describe IP convergence in the SAN and its implications *(3 marks)*

(b) (i)   Enumerate the benefits of NAS based storage strategy *(10 marks)*

2. (a).   (i) . Discuss market drivers for IP SAN technology *(5 marks)*
           (ii). List components and connectivity options of iSCSI *(3 marks)*

   (b)   (i). Describe iSCSI architecture and topologies *(10 marks)*
           (ii). Identify the best environments for NAS solutions. *(2 marks)*

3. (a).   (i) Define NAS and describe its key attributes *(5 marks)*
           (ii). What are two types of iSCSI names, and which one is similar to a Fibre Channel name*? (2 marks)*
            (iii). List three NAS Application Examples *(3 marks)*

   (b)   (i) Describe the issues involved in managing a NAS environment *(10 marks)*

4 (a).   (i). Discuss the benefits of NAS based storage strategy *(10 marks)*

           (ii). Identify two differences between a General Purpose Server and a NAS Device *(2 marks)*

   (b)   (i). Outline FCoE physical and logical elements *(3 marks)*
           (ii). Explain the benefit of using CNA card *(5 marks)*

PART TWO (2)

5. A large organization is considering a data integration project that will last six months. They are looking for a solution that will enable them to derive value from the complex information spread across their systems. The solution should profile, cleanse, and integrate the data across diverse sources (structured, unstructured, mainframe, and application sources) to deliver trusted information.

   (a). (i). Which database server offering is best suited for this client scenario? Provide a justification for your selection *(20 marks)*

6. (a) (i). A cloud service provider wants to provide storage as a service to users. The company is based in Ghana and operates its data center here. What should the company do in order to ensure high availability for the storage services they provide? Discuss*. (15 marks)*
   (ii). What are the two important benefits of using cloud computing and why? *(5 marks)*

PART THREE (3)
7. (a) (i) State and explain the eight (8) environmental impacts of data centers*. (5 marks)*

   (ii) Enumerate the two major types of replication and discuss their implementation, benefits and challenges*. (15marks)*

Examiner: Mr Yaw Tabiri