BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE

BSc HONOURS IN COMPUTER SCIENCE

BSc HONOURS IN INFORMATION TECHNOLOGY

CLOUD COMPUTING AND VIRTUALIZATION IT213/ NWE213

DURATION: 2 HOURS 30 MINUTES   **TOTAL MARKS: 100**

INSTRUCTIONS TO CANDIDATES

This paper carries 5 questions. You are required to answer all.

Question 1

a) A newly formed organization with local and international customers is migrating to cloud computing to accelerate IT services and delivery. Management made this decision in line with its IT policy.

   i.   Explain any **three** benefits to this organization of migration to cloud computing. **[6]**

   ii.   What does SPI stand for? **[1]**

   iii.   SPI stands for three major services that are provided through the cloud. Explain these **three** services. **[9]**

b) Distinguish the following cloud Deployment Models.

   i.   Private and public cloud **[2]**

   ii.   Community and hybrid cloud **[2]**

Question 2

Write brief notes on the following cloud Deployment Models

   i.   Private Cloud **[5]**

   ii.   Community Cloud **[5]**

   iii.   Public Cloud **[5]**

   iv.   Hybrid Cloud **[5]**

Question 3

Teacher training colleges, polytechnics and both private and state universities are expected to provide a wide and growing array of technology services, some of which are highly specialized. By offering commodity services over the internet, cloud computing offers one way for institutions to increase operational efficiency and focus scarce resources on services that are institutional.

Explain any **five** issues that these institutions should do to avoid service disruptions or total collapse of service delivery. **[20]**

Question 4

A recent graduate from BUSE with a degree in Information Technology is approached by the principal of an upcoming IT College in Harare. The principal heard that data can be stored in the cloud but he is not so sure of the technology. Furthermore, the principal is worried about the security and privacy issues of his data.

a) Briefly highlight **four** measures that are in place to address his security and privacy concerns. **[8]**

b) Explain **four** critical design factors that are taken into consideration for storage network. **[8]**

c) Identify **two** opportunities that the IT College would enjoy if the new technology is adopted **[4]**

Question 5

a) Distinguish the following in the context of cloud computing

   i.   Cloud client and cloud provider. **[2]**

   ii. Cloud server and cloud storage. **[2]**

b) The IT manager of a certain of a certain company asserts that virtualization technology is offering many benefits to his organization after a successful migration from a physical environment to virtual setting. Explain any **six** specific benefits that the IT manager is referring to after this technology adoption. **[12]**

c) Write brief notes about your understanding of 'network virtualization'. **[4]**

END OF EXAMINATION