ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)

MID SEMESTER EXAMINATION   **SUMMER SEMESTER, 2021-2022**
DURATION: 1 HOUR 30 MINUTES   **FULL MARKS: 75**

CSE 6493: Cloud Computing

Programmable calculators are not allowed. Do not write anything on the question paper.
Answer all **3 (three)** questions. Figures in the right margin indicate full marks of questions.

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1. a) What is meant by the term "multi-tenancy" in regards to cloud computing? Differentiate between the scalability and rapid elasticity of cloud service. — 7

   b) What is the rate adoption of Software as a Service (SaaS) among small and medium-sized organizations and government? How much control do you have over manageability if you adopt a SaaS service? — 8

   c) Describe the cloud deployment model. Which approach would you prefer to adopt as the IT manager of a healthcare facility? Justify your answer using relevant reasoning. — 5 + 5

2. a) What is the key enabling technology of Cloud computing? Describe the following virtualization techniques in term of their advantages and disadvantages. — 3 × 3
      i. Para Virtualization
      ii. Full Visualization
      iii. Hardware Virtualization

   b) Why is cloud application deployment design process iterative? Discuss the steps required in cloud application deployment process. — 6

   c) What is Network Function Virtualization (NFV)? What is the relationship between NFV and Software-Defined Networking (SDN)? Illustrate the NFV architecture with its key components. — 10

3. a) Write short notes on the following terms: — 3 × 3
      i. EC2
      ii. Blob Storage Service
      iii. Google App Engine

   b) What benefits does Container as a Service (CaaS) have over Virtual Machines (VM)? — 6

   c) Assume you are the IT manager of a medium-sized company. You want to migrate your online order system to the cloud exclusively for 'Black Friday' festivities for 2 weeks. As we all know, cloud service providers give their customers with a variety of billing options. Which billing models do you recommend for your company and why? — 10