Bachelor of Information Technology (BIT) Programme
End Semester Examination (Semester 04)

Module Name   : Service Oriented Computing
Module Code   : BIT 2207
Assessor   : A.S.K. Wijayawardena
Batch   : BIT 01
Date   : 26/10/2021
Time   : 8.00 AM to 1.00 PM – an Alternative Online Assessment

Special Instructions to the candidates:
1. The Assessment is conducted online as an Alternative Assessment according to Non-State Higher Education guidelines.
2. Answer All Four (4) Questions
3. All four questions carry equal marks in total.
4. Illustrate your answers with clear diagrams wherever applied.
5. The paper is marked out of 100 Marks.
6. Must be submitted on or before the deadline stated.
7. Follow the General Guidelines given by the Department of Examination for exam Start time and closing time

Question 1

i) Explain following architectural principles **(6 Marks)**
   (a) Service composability
   (b) Service abstraction
   (c) Service reusability

ii) Explain the Service Oriented Computing with an example application. **(4 Marks)**
iii) Discuss <u>four</u> business level benefits of service-oriented computing. **(4 Marks)**
iv) Explain how can you achieve loose coupling in service-oriented architecture? **(5 Marks)**
v) Distinguish between Service-Oriented Architecture (SOA) and Microservices architecture. **(6 Marks)**

Total Marks 25

Question 2

i) Explain the following three pillars of alignment of business and service-oriented architecture. **(6 Marks)**
   (a) Strategic Pillar
   (b) Strategic Pillar
   (c) Operating Model Pillar

ii) Explain what is meant by separation of concerns. **(4 Marks)**

iii) Explain Decompose the Business Process step in service designing process. **(5 Marks)**
iv) Explain the concept of Software as a Service (SaaS) with a suitable example. **(5 Marks)**
v) List down three advantages of SaaS for a business. **(3 Marks)**
vi) Name <u>four</u> applications as examples for SaaS. **(2 Marks)**

Total Marks 25

Question 3

i) Explain two benefits of SOA Reference Architecture. **(4 Marks)**
ii) Explain what is meant by Business Application in SOA reference architecture. **(5 Marks)**

iii) Explain why Enterprise Service Bus (ESB) is an essential component within SOA Reference Architecture. **(5 Marks)**

iv) Briefly explain Virtual Server concept with an application example. **(3 Marks)**
v) Briefly explain <u>two</u> benefits of virtualization. **(4 Marks)**
vi) List down <u>four</u> different types of virtualization? **(4 Marks)**

Total Marks 25

Question 4

i) Explain <u>three</u> benefits of cloud computing. **(6 Marks)**
ii) List down <u>four</u> major challenges of cloud computing. **(4 Marks)**
iii) Explain what is a Hypervisor. **(4 Marks)**
iv) Explain how virtualization is applied in Cloud Computing. **(5 Marks)**
v) Explain <u>one</u> benefit of Data Centers with a real-world example. **(3 Marks)**
vi) What are the <u>three</u> main components of a Data Center? **(3 Marks)**

Total Marks 25

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