



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(TAKE HOME)
SEMESTER II
SESSION 2020/2021**

COURSE NAME : NETWORK MODELLING AND
PERFORMANCE

COURSE CODE : MET11303

PROGRAMME CODE : MET

EXAMINATION DATE : JULY 2021

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS
OPEN BOOK EXAMINATION

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

- Q1** (a) Discuss the selection criteria for IoT Middleware platform. (8 marks)
- (b) Describe the important features of ThingSpeak. (7 marks)
- Q2** Consider the Lorawan and SigFox protocols.
- (a) Differentiate between Lorawan and Sigfox. (9 marks)
- (b) State **THREE (3)** applications each for LORAWAN and SigFox. (6 marks)
- Q3** Computer Network communication is concern on Transmission Control Protocol/ Internet Protocol (TCP/IP) protocol and Open System Interconnection (OSI) protocol.

Classify the OSI layer responsible for the following task:

- (a) Determining the path to route the packet: _____
- (b) Providing end-to-end communications with reliable service: _____
- (c) Providing node-to-node communications with reliable service: _____
- (d) Provide the user interface facilities: _____
- (e) Managing and control the session: _____

(5 marks)

- Q4** Based on **Figure Q2**:
- (a) Identify what is the process shown in **Figure Q2**.
(1 mark)
 - (b) Explain the process happen in this protocol management.
(12 marks)
 - (c) Discover the type of protocol involve in this process.
(4 marks)
- Q5** In your opinion, how was our confidential data lost its privacy during online transaction or communication? Give **FOUR (4)** points to justify your answer.
(8 marks)
- Q6** Security is a very crucial needs in networking as it protect the information in communications.
- (a) Compares the different between:
 - (i) cryptography and cryptanalysis.
(4 marks)
 - (ii) sniffing and spoofing.
(4 marks)
 - (b) Explain on how a prevention method able to avoid Sniffing Attacks.
(6 marks)
- Q7** By using 6 columns key Diffusion Classical Transposition cipher, generate the cipher text for a plaintext:
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(6 marks)
- Q8** Do you think that Advanced Encryption Standard (AES) is the generic version of Triple Data Encryption Algorithm (3DES). Justify your answer with support of illustration.
(10 marks)
- Q9** Discuss **FIVE (5)** challenges in IoT simulation and modelling scheme.
(10 marks)

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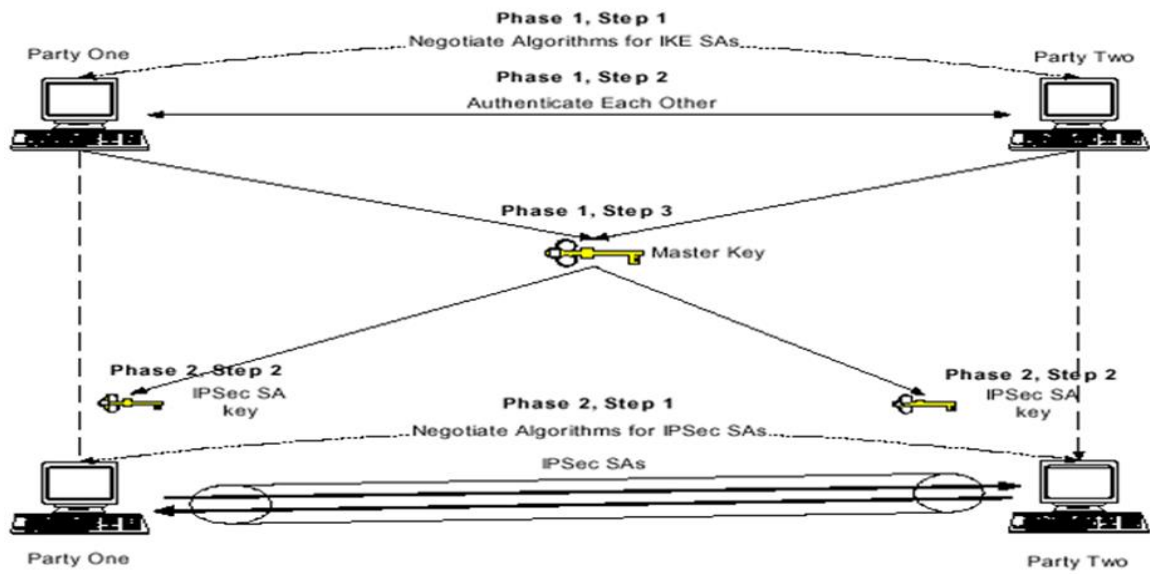


Figure Q2: Network Diagram