

6TH SEM./CSE/IT/ 2022(S)

TH1 Cryptography and Network security

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Differentiate between substitution technique and Transposition technique.
 - b. Define Rail Fence technique.
 - c. Where SSL layer is located in TCP/IP?
 - d. Define seed.
 - e. Write the problem associated with clear text password.
 - f. Define IP address spoofing
 - g. Define static web page and Dynamic web page.
 - h. What are the problems with symmetric key cryptography?
 - i. Define VPN.
 - j. Define Brute-force attack.
2. Answer **Any Six** Questions 6 x 5
 - a. Discuss about different types of attack.
 - b. Difference between symmetric and asymmetric key cryptography.
 - c. Discuss the mechanism used by a RA for checking the user's proof of possession of the private key.
 - d. Discuss about screen host firewall, single-homed Bastion configuration.
 - e. Discuss about PKIX Services.
 - f. Discuss about Digital Envelop.
 - g. Discuss about Authentication token.
3. Briefly Discuss about key principle of network security. 10
4. Define digital certificate. Write the step to create digital certificate. 10
5. Define SSL and discuss how SSL works? 10
6. Discuss about DES and how it works. 10
7. Explain about IP Security. 10

6th Sem. / Information Technology /CS&E / 2022(S)

Th2 Internet of Things

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
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1. Answer **All** questions 2 x 10
 - a. What is the concept behind Internet of Things?
 - b. List down the name of the fundamental components of IOT.
 - c. What are the different types of actuators are there in IOT?
 - d. Mention the name of various connectivity technologies that are used in IoT.
 - e. What does M2M stand for? Write down the three applications of M2M.
 - f. What is the importance of Raspberry Pi in IoT? Name the various versions of Raspberry Pi.(any two)
 - g. What does HAN stand for? Mention the name of the elements present in HAN.
 - h. What does SDN stand for? What is the goal of SDN?
 - i. Sum up the basic requirement to perform a case study on Traffic control system using Arduino Board.
 - j. Write down the applications of IIoT.
2. Answer **Any Six** Questions 6 x 5
 - a. Outline the characteristics of IoT.
 - b. Differentiate between Consumer IoT and Industrial IoT.(any five)
 - c. Define multihoming. Classify between classical multihoming and multihoming with multiple addresses.
 - d. Portray the architecture of IEEE 802.15.4.
 - e. Illustrate the four modes by which sensors detect the objects.
 - f. What do you mean by smart home? Give four examples of smart homes in brief.
 - g. Outline the benefits and challenges of IIoT.

- 3 What is the role of sensor in IoT? Write any 2 differences between static sensor and dynamic sensor. Explain about the various types of sensors in IoT. 10
- 4 What does MQTT stand for? Write down the components of MQTT with proper figure. Describe the working principle of MQTT. 10
- 5 Define WSN. Explain about Under Water Acoustic Sensor Networks. 10
- 6 Name any two types of Arduino board. Illustrate the various components of Arduino with proper diagram. 10
- 7 What do you mean by smart cities? Briefly explain about the functional layers in smart parking. 10

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Th-3 Cloud Computing

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. What do you mean by cloud computing?
 - b. Name the three basic components of federated cloud?
Mention the name of different types of service model in cloud computing?
 - c. What do you mean by virtualization? Write the full form of VMM.
 - d. Write down the basic components of cloud computing.
 - e. What does RPO & RTO stand for?
 - f. Name 3 companies provide PaaS.
 - g. Write down the need of a digital certificate.
 - h. Define agility on cloud and cloud interoperability?
 - i. Mention the name of various types of VPN.
2. Answer **Any Six** Questions 6 x 5
 - a. Outline the characteristics of cloud computing.(any five)
 - b. Explain in detail about the cloud adoption.
 - c. Sum up the Strategies of Disaster Recovery.
 - d. Describe about the Deployment model in Cloud Computing.

- e. Portray the Key principles behind the Cloud Computing Device Fault Tolerance.
- f. Explain the working principle of cloud ecosystem.
- g. What does Hadoop stand for? Illustrate the layers of Hadoop architecture?

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| 3 | Outline the components of Cloud Computing. Explain about the Cloud Computing layers with proper diagram. | 10 |
| 4 | Mention the name of various cloud computing organizations that focused on addressing standards. Explain about the Role of standards in cloud-computing environments | 10 |
| 5 | Define data centre in cloud computing. Write down the various components of data centre. Explain about the Cisco Data Centre Network architecture in brief. | 10 |
| 6 | Explain the need of virtualization in cloud computing. Describe various types of virtualization in cloud computing. | 10 |
| 7 | Write down the name cloud technologies (any three). Outline the case study of Google App Engine and Microsoft Azure. | 10 |

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Write the difference between E-commerce & E-Business.
 - b. Define e-hub.
 - c. Define tunnelling.
 - d. What is network address translation?
 - e. Define client. Name the types of client.
 - f. What is trade cycle?
 - g. What is e-waste?
 - h. How does virus spread?
 - i. Differentiate Intranet and Extranet.
 - j. Why password is used in a system?
2. Answer **Any Six** Questions 6 x 5
 - a. Briefly describe various perspectives of E-commerce.
 - b. Explain the major activities of B2C.
 - c. What are the various components of EDI? Explain its various features.
 - d. What is supply chain? Explain porter's value chain model.
 - e. What do you mean by client server network security? State the common e-commerce security tools.
 - f. Explain the various types of risk associated with electronic payment system.
 - g. Define SSL. How SSL works?
3. Explain different types of risks associated with Internet banking. 10
4. Define Biometrics. Explain the different kinds of biometric technology. 10
5. What is competitive advantage? Explain the porter's model for competitive forces. 10
6. Define firewall. Why firewall is used explain its characteristics and features in e-commerce environment. 10
7. Explain various advantage and disadvantage of E-commerce 10