Hall Ticket Number :										

R-15

Code: 5G161

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Cryptography and Network Security

(Common to CSE & IT)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What is a security attack and illustrate three different software attacks with examples 6M
   b) With help of a neat diagram explain the network security model 8M

OR

2. a) Identify which security mechanism(s) are needed in each of the following applications and justify your answer
      (i) Confidential Mail with delivery confirmation
      (ii) A student needs user id and password to log into the college server
      (iii) College office requires student signature to refund caution deposit 6M
   b) Explain the terms authentication, integrity , non- repudiation and denial of service 8M

UNIT–II

3. a) What are the basic requirements for secure transmission of data in conventional encryption algorithms and explain them 4M
   b) Differentiate between message authentication codes and message digest 3M
   c) Discuss the advantages and disadvantages of link encryption and end to end encryption 7M

OR

4. a) Discuss cipher feedback mode with diagram in detail 8M
   b) Illustrate how message authentication codes are used in data transmission and how a receiver can verify the genuineness of the information 6M

UNIT–III

5. a) What are the deficiencies of Kerberos V4 6M
   b) What are the different cryptographic algorithms used in S/MIME 8M

OR

6. a) Explain the different fields in X.509 certificate format 7M
   b) Explain general format of PGP message 7M

UNIT–IV

7. a) What is replay attack and how is it encountered in in IPSec 6M
   b) Who are the different participants in Secure Electronic Transaction(SET) and explain how communication goes on between them 8M

OR

8. a) Explain transport mode and tunnel mode in the context of AH and ESP 7M
   b) Explain client authentication and key exchange methods in Handshake protocol using SSL 7M

UNIT–V

9. a) Explain packet filtering router 8M
   b) Explain Distributed intrusion detection 6M

OR

10. a) Discuss virus structures 8M
    b) Explain Rule based intrusion detection 6M

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Hall Ticket Number :										

R-15

Code: 5G464

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Human Computer Interaction

(Information Technology)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) "A well-designed interface and screen is terribly important to users" - Justify the statement with narration of user Interface importance. 7M
   b) Discuss the developments of screen design in 1980s and 1990s. 7M

OR

2. a) Present the productivity benefits of well-designed Web pages. 7M
   b) Define good design and give its importance in user utility and comfort. 7M

UNIT–II

3. a) Graphics revolutionized design and the user interface – Justify the statement by explaining the popularity of graphics. 7M
   b) Summarize the typical interaction speeds of various tasks performed on system. 7M

OR

4. a) Demonstrate the general principles with suitable examples focusing on Compatibility, Configurability and Consistency. 7M
   b) Explain the various human characteristics to be considered while designing the user interface. 7M

UNIT–III

5. a) Identify the proper test for good screen design. 7M
   b) Classify and present diagrammatically the various types of Statistical Graphics used for clear presentation of data analysis. 7M

OR

6. a) Explain the qualities for visually pleasing composition of screen design. 7M
   b) Justify the statement - "Various technological considerations which are to be taken into account for Interface Design are physical characteristics of device and interface controlling software". 7M

UNIT–IV

7. a) Explain various presentational controls which provide details about screen elements. 7M
   b) Present the techniques of Choosing Colors for Textual Graphic Screens. 7M

OR

8. a) Illustrate the significance of multimedia in the component design. 7M
   b) Discuss various Navigational schemes and also different types of menus. 7M

UNIT–V

9. a) Explain the importance of drivers in interaction devices 7M
   b) Discuss any two specification methods in detail 7M

OR

10. a) Explain the characteristics and capabilities of various device-based controls 7M
    b) Discuss the importance of Keyboard and explain functionality of various keys. 7M

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Hall Ticket Number :										

R-15

Code: 5G16C

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Internet of Things

(Common to CSE & IT)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What is Internet of Things? List and explain the design characteristics of Internet of Things. 7M
   b) What is Web thinking for connected devices? Illustrate any three components of web thinking for connected devices. 7M

OR

2. Discuss in detail about Radio Frequency Identification Technology. 14M

UNIT–II

3. Illustrate the following
   a) Device Layer
   b) Communication Layer
   c) Core Platform Layer
   d) Cognitive Platform Layer 14M

OR

4. a) What are the responsibilities of enterprise Internet of Things stack? 6M
   b) Demonstrate Analytics Platform Layer and it roles and responsibility in enterprise IoT stack. 8M

UNIT–III

5. a) Draw a flow chart and explain the functionality of the home intrusion detection IoT system by interfacing with webcam. To implement a function in controller to capture an image from the webcam and send it as an attachment in the email alert when an intrusion is detected. 9M
   b) Explain about the role of IoT in creating the smart cities? 5M

OR

6. a) Draw the domain model of Smart Irrigation Internet of Things system in Agriculture applications. 7M
   b) List the various application of Internet of Things in daily life. Explain each with short note. 7M

UNIT–IV

7. a) What is uIPv6 format in IoT? Demonstrate the usage of uIPv6 in IoT applications. 7M
   b) Write in detail notes on MQ telemetry transport for sensor networks. 7M

OR

8. Write detail notes on the following:
   a) Contiki
   b) ZigBee compact application protocol
   c) Wireless RFID Infrastructure
   d) 6LoWPAN Format 14M

UNIT–V

9. a) How to choose the right platform for your Internet of Things application? 7M
   b) What is Microcontroller? Explain the role of microcontroller in design an Internet of Things application. 7M

OR

10. a) Write short notes on the following:
       i. System-on-chips
       ii. Arduino 7M
    b) Compare and contrast the Raspberry Pi and Beaglebone black. 7M

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Hall Ticket Number :										

R-15

Code: 5G468

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Python Programming

(Information Technology)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What is Python? Discuss about the features of Python in detail. 7M
   b) What do you mean by an Environment Variable? Discuss about the Environment variables in Python. 7M

OR

2. a) What are the supported data types in Python? Explain in brief 7M
   b) Explain the types of operators in Python in detail. 7M

UNIT–II

3. a) Write a simple Python program to check the given number is prime or not 7M
   b) Explain decision making statements with an example program. 7M

OR

4. a) Write a program to print Fibonacci series up to n. 7M
   b) What is List structure? Discuss about iteration over list with an example. 7M

UNIT–III

5. a) What is a function? How do we define a function? Explain with an example. 7M
   b) Differentiate between call by value and call by reference. Explain with an example 7M

OR

6. What is a Class and Object? How do we create those in Python? Explain in detail with an example program 14M

UNIT–IV

7. a) Discuss in details about Modules in Python with an example 7M
   b) Write a short note on Exception Handling 7M

OR

8. Write a short note on String Handling methods with an example program
   a) Length b) Find c) Lower Case
   d) Replace e) Slice 14M

UNIT–V

9. Write a short note on
   a) Dictionaries
   b) Sets 14M

OR

10. a) Define Recursive Function. Write a simple program to find factorial of a given number using recursive function 7M
    b) Discuss about Object oriented concepts in brief 7M

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Hall Ticket Number :										

R-15

Code: 5G469

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Unix and Shell Programming

(Information Technology)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What would be the effect of the following commands?
   i. tar
   ii. rmdir xyz
   iii. ls -s
   iv. d. du 7M
   b) Draw the structure of an UNIX Operating System and elaborate the importance of a Shell along with its block diagram? 7M

OR

2. a) How security can be achieved by using file permissions in Unix? 7M
   b) Draw and explain file system in Unix operating system? 7M

UNIT–II

3. a) Discuss about (i) User Communication (ii) Electronic mail 6M
   b) Elaborate on Atoms and Operators in sed? 8M

OR

4. a) What will be the output for (i) $ ls –l|grep ^l (ii) $ls –a|grep ^.
   (iii) $more +10|pg|cat > pp.txt. 6M
   b) Explain the concept of aliasing and discuss how it is different from copy operation 8M

UNIT–III

5. a) Briefly discuss substitution and deletion operations in SED? 7M
   b) Define an atom. Explain about different types of atoms with examples? 7M

OR

6. a) Describe pattern search operations with AWK? 7M
   b) Write an awk script whose input is two files and output is a single merged file (line1 in file1 followed by line1 in file2 and so on)? 7M

UNIT–IV

7. a) Using positional parameters write a k shell script on evaluating arithmetic expressions? 7M
   b) Discuss on (i) History (ii) Exit Status in K shell script? 7M

OR

8. a) Write K shell script implementing Bubble Sort? 8M
   b) Define a variable and classify the variables used in K Shell? 6M

UNIT–V

9. a) Discuss (i) Startup and Shutdown Scripts in a C shell Script? 7M
   b) Write a C Shell Script to filter out all the regular files and soft link files in PWD? 7M

OR

10. a) Discuss the various control actions in C Shell Script with examples? 10M
    b) Write a C shell script to count number of directories in PWD? 4M

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Hall Ticket Number :										

R-15

Code: 5G46A

III B.Tech. II Semester Supplementary Examinations Nov/Dec 2018

Web Technologies

(Information Technology)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) What is a frame? How to divide the web page into frames? Give an example.
   b) How do you get Java Script onto a web page? Explain with examples.

OR

2. a) Using Java Script write a program for converting a specific string to upper case.
   b) Describe different elements of objects in Java script.

UNIT–II

3. a) Give a brief note on the Java Beans API.
   b) Consider an XML document with the following schema:
   [Sl.no, name (First name, last name), Address].
   Write a DTD for the above schema.

OR

4. a) Define XML. What are the advantages of XML? Explain.
   b) Design a layout using XML containing an application form

UNIT–III

5. a) Describe how an HTTP servlet handles its client request
   b) Explain the life cycle of a servlet.

OR

6. a) How to use Cookies and session for session tracking? Explain with an example program.
   b) Give a brief note on the javax. Servlet Package.

UNIT–IV

7. a) Explain the benefit by using JavaBeans to separate business logic from presentation markup within the JSP environment.
   b) How to use Scripting Elements in JSP? Explain

OR

8. a) Assume that you have a valid database of B. Tech students. Write a JSP program for the result portal.
   b) Give a brief note on Anatomy of a JSP Page.

UNIT–V

9. a) Explain about the components of JSP
   b) Describe the data sharing process between JSP's.

OR

10. a) List and explain the JSP implicit objects.
    b) Write the working procedure for working with XML Data in JSP.

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