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III/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017****Sixth Semester****Time:** Three Hours**Common for CSE & IT****Introduction to Data Analytics****Maximum : 60 Marks***Answer Question No.1 compulsorily.*

(1X12 = 12 Marks)

Answer ONE question from each unit.

(4X12=48 Marks)

1. Answer all questions

(1X12=12 Marks)

- a) What is R Programming?
- b) what are the data types in R?
- c) What is the difference between "%%" and "%/%"?
- d) Write the general expression for creating a matrix in R?
- e) What are the different ways creating new variable into existing dataset?
- f) Two vectors X and Y are defined as follows-
X<-c(3,2,4,5) and Y<-c(1,3). What is the output of vector Z that is defined as Z<-X+Y
- g) What are the statistical functions in R?
- h) What is expected from running the command - strsplit(x,"e")?
- i) Define Correlation & Covariance?
- j) What is a regular expression?
- k) Write syntax for creating a pie-chart using R?
- l) Define Decision trees?

UNIT I

2. a) What are the data types in R language? 2 M
- b) Explain about data frames and operations on it? 4 M
- c) Explain calculator and vector operations using R programming language? 6 M

(OR)

3. a) Explain the process of importing and exporting data into the following file format by using R program 6 M
(i) CSV File (ii) Excel file (iii) Text file
- b) Write R program for retrieving 25% fuel efficient cars from 'mtcars' data set? Explain the steps? 6 M

UNIT II

4. a) Explain Missing Values, Date values and Type conversions? 6 M
- b) Explain Subsetting datasets and merging datasets? 6 M

(OR)

5. a) Explain character and probability functions? 6 M
- b) Explain the following plots 6 M
i. Bar plots ii. Pie charts iii. Histograms iv. Box Plot

UNIT III

6. a) Explain normal distribution and binomial distribution with examples 6 M
- b) Explain t-test and ANOVA test with example? 6 M

(OR)

7. a) Explain Regular Expressions with examples? 6 M
- b) Explain correlation and covariance with examples? 6 M

UNIT IV

8. a) What is a cluster? What are the common steps in cluster analysis? 6 M
- b) Explain Hierarchical cluster analysis with suitable example and draw the Dendrogram for that example? 6 M

(OR)

9. a) What is a classification? Explain decision trees? 6 M
- b) Explain random forest and confusion matrix 6 M

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III/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017****Sixth Semester****Time:** Three Hours**Information Technology****Wireless Networks****Maximum : 60 Marks***Answer Question No.1 compulsorily.*

(1X12 = 12 Marks)

Answer ONE question from each unit.

(4X12=48 Marks)

1 Answer all questions

(1X12=12 Marks)

- Why does collision occur?
- List any two advantages of Wireless Networks.
- What is the difference Bandwidth and Data rate
- What is the Use of Home location Register
- Define Handover
- What are the advantages of GEO satellites
- What is a Broadcast Disk
- What is the functionality of Access Point
- What is Care of Address
- What is Jitter
- What is Explicit Congestion Notification
- Differentiate Push & Pull based Mechanism

UNIT I

- Explain the problem of hidden and exposed terminals. 6M
 - What limits the number of simultaneous users in a TDM/FDM system compared to a CDM system? What happens to the transmission quality of connections if the load gets higher in a cell, i.e., how does an additional user influence the other users in the cell? 6M

(OR)

- What are the main reasons for using cellular systems? How is SDM typically realized and combined with FDM? How does DCA influence the frequencies available in other cells? 6M
 - What are benefits of reservation schemes? How are collisions avoided during data transmission, why is the probability of collisions lower compared to classical Aloha? What are disadvantages of reservation schemes? 6M

UNIT II

- 2G and 3G systems can both transfer data. Compare these approaches with DAB/DVB and list reasons for and against the use of DAB/DVB. 6M
 - What are the functions of authentication and encryption in GSM? How is system security maintained? 6M
- Looking at the HLR/VLR database approach used in GSM – how does this architecture limit the scalability in terms of users, especially moving users? 6M
 - Considered as an interworking unit in a communication network, what function can a satellite have? 6M

UNIT III

- How do IEEE 802.11, HiperLAN2 and Bluetooth, respectively, solve the hidden terminal problem? 6M
 - Show the steps required for a handover from one foreign agent to another foreign agent including layer 2 and layer 3. 6M
- What are advantages and problems of forwarding mechanisms in Bluetooth networks regarding security, power saving, and network stability? 6M
 - Name the main differences between multi-hop ad-hoc networks and other networks. What advantages do these ad-hoc networks offer? 6M

UNIT IV

- Can the problems using TCP be solved by replacing TCP with UDP? Where could this be useful and why is it quite often dangerous for network stability? 6M
 - Name the advantages and disadvantages of user acknowledgements in WTP. What are typical applications for both cases? 6M
- Name further optimizations of TCP regarding the protocol overhead which are important especially for narrow band connections. Which problems may occur? 6M
 - Why has a scripting language been added to WML? How can this language help saving bandwidth and reducing delay? 6M

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III/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017.****Sixth Semester****Time:** Three Hours**Information Technology
Software Engineering****Maximum :** 60 Marks*Answer Question No.1 compulsorily.*

(1X12 = 12 Marks)

Answer ONE question from each unit.

(4X12=48 Marks)

1 Answer all questions

(1X12=12 Marks)

- Define software engineering.
- Write any four principles of communication practices.
- List different software myths.
- Define unified process.
- Define use case and give example.
- Define software design.
- What are the factors affecting on software pricing?
- What is architectural pattern?
- Expand FURPS quality factors.
- Define formal technical reviews.
- What is software reliability.
- What is verification and validation?

UNIT I

- Explain about various agile process models. 6M
 - Explain the various phases in the spiral model. 6M

(OR)

 - Write about CMMI Levels. 6M
 - Explain about process patterns. 6M

UNIT II

- Explain about data and behavioural modelling in detail. 6M
 - Discuss briefly about validating requirements. 6M

(OR)

 - Explain the various tasks of requirements engineering. 6M
 - Explain class based modelling. 6M

UNIT III

- Define cohesion. Explain various types of cohesion. 6M
 - Describe interface design steps. 6M

(OR)

 - Explain the golden rules of user interface design. 4M
 - Explain different architectural styles related to the software engineering. 8M

UNIT IV

- Write about various types of black box testing. 8M
 - Explain the metrics for design model. 4M

(OR)

 - State and explain the guidelines for formal technical review(FTR). 6M
 - Explain about basis path testing. 6M

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III/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017****Department of Information Technology****Sixth Semester****Enterprise Programming - I****Time:** Three Hours**Maximum :** 60 Marks*Answer Question No.1 compulsorily.**(1X12 = 12 Marks)**Answer ONE question from each unit.**(4X12=48 Marks)*

1 Answer all questions

(1X12=12 Marks)

- What is IntelliSense
- What is the need of Page Class
- What is the need of tracing?
- What is meant by State Management?
- What is a MasterPage?
- What is aTreeView?
- What is a DetailsView?
- What is a data source control?
- What is multiple binding?
- Define LINQ.
- What is an IIS?
- What is a web service?

UNIT I

- Develop an ASP.NET website for implementing currency converter with an image control. 6M
 - List out any five basic web controls with their syntax? 6M

(OR)

- Illustrate with an example how to handle user defined exceptions. 6M
 - Discuss about the usage of Cookie in state management. 6M

UNIT II

- Discuss about the concept of Validation in .NET. 6M
 - Discuss about Wizard control. 6M

(OR)

- Discuss about different types of Styles available in ASP.NET. 6M
 - Discuss about navigation controls in ASP.NET 6M

UNIT III

- Explain about Data Binding with a Dictionary Collection. 6M
 - Create an application that display list of employ details retrieved from employees table using Direct Data Access 6M

(OR)

- Explain with an example how GridView control works. 6M
 - Create an application that display a list of items using LINQ. 6M

UNIT IV

- Discuss about the deployment process of an ASP.NET website. 6M
 - Explain about the consuming of XML Web Service. 6M

(OR)

- Discuss about the advantages of MVC over traditional models in designing an application. 6M
 - Create a Simple Data-Entry Application with the use of MVC. 6M

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II/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017****Sixth Semester****Time:** Three Hours**Information Technology****Introduction to Cyber Security****Maximum:** 60 Marks*Answer Question No.1 compulsorily.**(1X12 = 12 Marks)**Answer ONE question from each unit.**(4X12=48 Marks)**(1X12=12 Marks)*

1. Answer all questions

- What is steganography?
- Define cryptography.
- Define security metric.
- What is the purpose of security auditing?
- Where is se tool kit used?
- Write IP table command to block a specific IP address.
- Define vulnerability.
- Define malware.
- Encrypt the word 'EXAMINATION' using Caesar cipher with the key length 4.
- What is the purpose of configuration management?
- Define configuration item.
- What is the objective of cyber security?

UNIT I

- Give a note on OSI security architecture. 6M
 - Explain Hill cipher algorithm with an example. 6M

(OR)

- Give the details of DES algorithm. 8M
 - Write the differences between symmetric and asymmetric encryption algorithm. 4M

UNIT II

- Discuss basic structure of AES algorithm. 8M
 - Write some sample NIST metrics. 4M

(OR)

- Give a detail note on IT audit. 8M
 - Write some IP table commands. 4M

UNIT III

- Explain with an example RSA algorithm. 8M
 - Write some NMAP commands 4M

(OR)

- What is vulnerability management? What are the challenges for VM. 8M
 - Explain various operations that can be performed using Metasploit. 4M

UNIT IV

- What is configuration management? Explain in detail. 8M
 - Write a short note on MBSA 4M

(OR)

- Explain different modes in which IDS snort operates. 8M
 - What are the various issues to be considered during configuration management? 4M

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III/IV B.Tech (Regular) DEGREE EXAMINATION**April, 2017****Sixth Semester****Time:** Three Hours**Information technology
Computer Animation****Maximum:** 60 Marks*Answer Question No.1 compulsorily.*

(1X12 = 12 Marks)

Answer ONE question from each unit.

(4X12=48 Marks)

1 Answer all questions

(1X12=12 Marks)

- Applications of Computer Animations
- view frustum
- Barycentric Coordinates
- How Ray Casting differs from display pipeline transformations.
- Forward differencing
- Write a rotation transformation matrix for rotation about y-axis.
- Perspective foreshortening
- List the approaches to find the arc length.
- Define Morphing
- Types of Facial Models
- Coronal Plane
- Anti Aliasing

UNIT I

- Write about various computer animation production tasks. 6M
 - Write short notes on Transformations. 6M

(OR)

 - Define Computer Animation. Explain the principles of Computer Animations. 6M
 - Explain Geometric computations and functional integration. 6M

UNIT II

- Explain Basic Transformations with matrix representations. 6M
 - Discuss about display pipeline. 6M

(OR)

 - Write about the homogeneous coordinates and compounding transformations. 6M
 - Explain Fixed and Euler Angle representation. 6M

UNIT III

- Explain about animation language. 6M
 - How Frenet Frames are used to find orientation of an object moving along a curve. 6M

(OR)

 - Explain recursive subdivision approach in 3D shape interpolation. 6M
 - Explain smoothing a path using linear and cubic interpolation 6M

UNIT IV

- Discuss about the mechanics of Locomotion in walking. 6M
 - Explain Facial Animation by creating a Model and Texture. 6M

(OR)

 - What is Compositing? Write about Compositing without pixel depth information in combining image layers. 6M
 - Write short notes on drop shadows. 6M

