Code: 9A05503

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
COMPUTER GRAPHICS
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Discuss about characteristics of Direct View Storage Tube (DVST) devices.
   (b) Explain the mechanism of increasing the callously gray levels without increasing the frame memory.

2 (a) Explain simple DDA algorithm for generating a line.
   (b) Draw a line for the points (3, 4) and (7, 8) using DDA line drawing algorithm.

3   Derive mathematically the transformation that rotation an object point ø° anti-clock wise about the origin write the matrix representation for this rotation.

4   Discuss different types of output primitives and attributes in SPHIGS.

5   Explain how 3-D curves and surfaces are displayed on a computer screen.

6 (a) Write notes on primitive instancing.
   (b) Write the issues in developing user interfaces for solid modeling.

7   Explain the following color terms:
        a) Hue   (b) Saturation   (c) Lightness   (d) Brightness

8 (a) Explain how a camera model can be improved.
   (b) Write a brief note on recursive ray tracing.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
COMPUTER GRAPHICS
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   Given one set of control points P, Q, R, S and another set of control points A, B, C, D it is
           required to draw two cubic Bezier curves. Specify the conditions that would be necessary
           to ensure: (i) That the two curves join.
                       (ii) That the two curves join smoothly.
     (b)   Explain briefly about quadric surfaces.

2   How solid can be generated using sweep techniques? Illustrate it by constructing a
           cylinder parallel to z axis with base centered at (30, 60 and 0) radius 10, and length 70.
           Also describe steps to construct a solid cone lying on the xz plane with base radius 30
           and cone tip located at (70, 30 & 70).

3   (a)   Draw RGB and CMY color cube.
     (b)   Convert the following CMY color to HSV color: C = 1.0, M = 0.5, Y = 0.0.

4   (a)   A light source of intensity 25 units is throwing light on a flat object at distance D. The ray
           makes an angle of 30° with the normal to the surface. Write an expression for the diffuse
           reflection from the object. Define any constants that appear in your expression.
     (b)   Explain the Gouraud surface rendering method for displaying an object.

5   List the operating characteristics of:
           (a) Raster refresh systems.   (b) Vector refresh systems.
           (c) Plasma panel.   (d) LCD's.

6   Explain the following:
           (a) Generalized clipping.   (b) Multiple windowing.

7   Derive the matrix form for the geometric transformations in 3-D graphics for the following
           operations:
           (a) Transformation.   (b) Scaling.   (c) Mirror reflections.

8   (a)   What is a geometrical model explain different types of geometrical models.
     (b)   Explain the hierarchy in geometric models.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
COMPUTER GRAPHICS
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   What is computer graphics? What are the major considerations in the study of computer graphics?
     (b)   List out the advantages of LCD displays.

2   (a)   What is polygon? Explain different types of polygons.
     (b)   Write about test parameters and text primitives.
     (c)   What is a display file?

3   Write a 2*2 transformation matrix for each of the following rotations about the origin:
            (a) Counter clockwise by π.
            (b) Counter clockwise by $\pi/2$.
            (c) Clockwise by $\pi/2$.
            (d) Counter clockwise by $5\pi/2$.

4   (a)   Explain briefly about hierarchical structure networks and elaborate on two-level hierarchy.
     (b)   What is the use of subordinate structure to model a structure?

5   (a)   Show that n^{th} degree B-spline basis function $B_{i,n}(x) = 0$, if $x < t_1$ or $x > t_{i+n-i}$.
     (b)   Explain how a polygon is represented in a computer memory.

6   (a)   Explain in detail about spatial occupancy enumeration scheme for solid modeling.
     (b)   State and explain the properties of CSG scheme.

7   Write a note in detail about achromatic light.

8   (a)   Describe in detail the Gouraud shading algorithm. Also state its advantages over the Phong's shading algorithm.
     (b)   Explain shadow masking method for colour monitor.

*****

Code: 9A05503

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
COMPUTER GRAPHICS
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Explain how a polygon is represented in a computer memory.

2   (a)   Explain how a solid object can be represented in a computer's memory.
     (b)   Write notes on constructive solid geometry.

3   Write notes on the following:
       a) RGB color model.
       b) CMY color model.

4   (a)   Describe different models used for illumination. How do you define surface normal vector?
            Explain its importance.
     (b)   Describe briefly the Phong shading and compare it with Gouraud shading.

5   Explain with suitable sketches, the role of frame buffer in the quality of graphical display of
       video display unit.

6   (a)   Compare and contrast DDA and Bresenham line generation algorithms.
     (b)   Which line drawing algorithm is more accurate? Explain.
     (c)   Explain how the area anti-aliasing technique is implemented.

7   What is parallel projection? Derive a transformation matrix for parallel projection.

8   (a)   What is CSS? Discuss the merits and demerits of CSS.
     (b)   List out the limitations of retained-mode packages.

*****

Code: 9A05601

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
OBJECT ORIENTED ANALYSIS & DESIGN
(Common to Computer Science & Engineering, Information Technology & Computer Science &
Systems Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   Explain about the common division mechanisms of UML in detail.
    (b)   Explain about behavioral things of UML in detail.

2   Define classifier. Explain in detail about different kinds of classifiers provided by UML.

3   Define class diagram. Explain about the graphical representation of class diagram with
          example.

4   Explain and draw the sequence diagram for ticket reservation use case in case of an
          online ticket reservation system.

5   What is a use case? Draw a use case diagram for a core banking application. Explain the
          same by identity various actors, use cases and relationships.

6   Write a short note on the common modeling techniques of time and space.

7   (a)   Define a node. State the differences between nodes and components. Explain how
          nodes can be organized.
    (b)   Enumerate the steps to model the source code using components.

8   Your college library issues books to the staff and students. The student and staff do
          return the books after some time. Draw the class diagram required for the process also
          draw state chart diagram for any object and also draw component diagram and explain.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
OBJECT ORIENTED ANALYSIS & DESIGN
(Common to Computer Science & Engineering, Information Technology & Computer Science &
Systems Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Define an object flow. Explain briefly how objects are involved in the flow of control
        associate with an activity diagram.

2   Write a short note on the following:
        a) Sending and receiving events.
        b) Time and change events.
        c) Call event.
        d) Signal event.

3   (a) Enumerate the steps to model the client-server systems.
    (b) What are the properties of components and component diagrams? Explain briefly.

4   Explain the two interaction diagrams for "Issue of a Book" and "Renewal of a Book"
        operations.

5   Define modeling. Why do we model? What we can achieve through modeling?

6   Explain about association names, roles, multiplicity and aggregation with examples.

7   Explain and draw the class diagram for an ATM bank system.

8   Explain about the following:
        (a) Procedural sequencing.
        (b) Steps involved in modeling the flow of control.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
OBJECT ORIENTED ANALYSIS & DESIGN
(Common to Computer Science & Engineering, Information Technology & Computer Science &
Systems Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Explain about the following:
        (a) Process view.
        (b) Package.
        (c) Interface.
        (d) Transition phase.

2   (a)   Explain about the class diagrams with examples in detail.
    (b)   Explain about the component diagrams with examples in detail.

3   Explain about different types of relationships in class and object diagrams with
        examples.

4   Explain and draw the collaboration diagram for lend article use case for library
        management system.

5   (a)   What is the purpose of a synchronization bar? How are forking and joining used in
          activity diagram? Illustrate with a neat diagram.
    (b)   Draw activity diagram to inform a person when a loan is due and explain.

6   (a)   Differentiate between a process and a thread.
    (b)   What are the two standard stereotypes that apply to active class?
    (c)   Explain and model the behavior of an ATM machine with the help of a state chart
          diagram.

7   Enumerate the steps to model the following. Illustrate UML diagrams and explain
        briefly:
        a) Modeling processes and devices.
        b) Modeling distribution of components.

8   (a)   What are the packages in the library system? Explain.
    (b)   Draw a sequence diagram for the use case lend item and explain.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
OBJECT ORIENTED ANALYSIS & DESIGN
(Common to Computer Science & Engineering, Information Technology & Computer Science &
Systems Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   What are use case diagrams? Explain the properties and importance of use case diagrams.
    (b)   Draw an extended use case diagram for the soda machine example depicting the 'Extend', 'Include' and generalization relationships.

2   (a)   Compare and contrast the real-time system with the distributed system.
    (b)   Enumerate the steps to model the following:
          (i) Family of signals.
          (ii) Exceptions.

3   (a)   What are the properties of a well-structured component diagram?
    (b)   What are the contents, common properties and common uses of component diagrams? Explain briefly.

4   (a)   Describe the various activities that are performed by various stake holders in a library information system.
    (b)   Draw and explain the collaboration diagram for the "Add Title" use case.

5   (a)   Differentiate between process and deployment view of a system in detail.
    (b)   List out and explain the four phases of SDLC.

6   (a)   Differentiate between class and object diagrams of UML.
    (b)   Differentiate between use case diagram and component diagram in detail.

7   Explain about the following:
          (a) Forward engineer of a class diagram.
          (b) Steps involved in modeling simple collaborations with examples.

8   (a)   Explain about links and associations in detail.
    (b)   Explain about several kinds of actions model by UML.

*****

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
WEB TECHNOLOGIES
(Common to Information Technology & Computer Science & Systems Engineering)
Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Explain the two uses of tables. Quote suitable HTML code examples in the discussions.

2   Design an XML schema for hospital information management. Include every feature available into the schema.

3   (a) Discuss in detail data type of Java script.
    (b) Write a script that prints a rectangle and oval using '*' character.

4   Take the Tick Tock bean available in BDK, build an application which controls the color Bean. Develop the necessary code to exhibit the bound properties of JAVA beans with the above mentioned beans.

5   (a) How to set a cookie on user computer? Explain with an example.
    (b) Explain Briefly how to redirect the HTTP headers to different locations.

6   (a) How to perform a query in PHP? Explain with PHP code.
    (b) Briefly explain about the MVC architecture.

7   (a) List and describe the different form elements associated with common form issues.
    (b) Differentiate GET and POST methods.

8   (a) How to initialize the XML parser in PHP? Explain with an example.
    (b) What is W3C DOM? Explain different parts and levels of W3C DOM.

*****

III B. Tech II (R09) Semester Regular Examinations, April/May 2012
WEB TECHNOLOGIES
(Common to Information Technology & Computer Science & Systems Engineering)
Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   Describe the primitive data types that Java script uses.
     (b)   Write a script that reads a string and checks whether it is a palindrome or not.

2   Write HTML code to construct a form for Indian railway reservation to a customer
            need to collect necessary data from customer.

3   Explain the fallowing classes and their usage:
            (i)   Parameter descriptor.
            (ii) Property change event.
            (iii) Property editor manager.
            (iv) Property editor support.

4   (a)   What are cookies? What are the advantages of cookies?
     (b)   Briefly explain different parameters available when setting a cookie.

5   (a)   Distinguish between DOM approach and SAX approach.
     (b)   What is meant by a valid XML document? Compare it with a well-formed XML
            document.

6   (a)   Explain the function used to connect to a MySQL database.
     (b)   How to perform a query in PHP? Explain with PHP code.

7   (a)   List and describe the different form elements associated with common form issues.
     (b)   Explain with example how the validatation of forms is done using PHP.

8   (a)   How to initialize the XML parser in PHP? Explain with an example.
     (b)   What is simple XML? What are the advantages of simple XML?

*****

III B. Tech II (R09) Semester Regular Examinations, April/May 2012
WEB TECHNOLOGIES
(Common to Information Technology & Computer Science & Systems Engineering)
Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Which HTML structures are necessary to provide interactivity to the uses? Explain the various elements associated with these structures.

2   Discuss various features and properties of a Bean developer kit.

3   How a simple Java script to check the presence of first string in the second string, if found display the location of first character?

4   What is simple XML? Explain different functions available in simple XML to parse and to load XML documents?

5   "SAX uses an event-based process for reading an XML document that is implemented through a callback mechanism". Substantiate this statement

6   What are Cookies? Explain the following:
     (a) Setting Cookies.
     (b) Deleting Cookies.

7   (a) What is the advantage of super globals, explain with example?
     (b) Write a PHP program to submit values using super globals and globals.

8   (a) Explain the function used to connect to a MySQL database.
     (b) Explain mysql_select_db () function with example.

*****

III B. Tech II (R09) Semester Regular Examinations, April/May 2012
WEB TECHNOLOGIES
(Common to Information Technology & Computer Science & Systems Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Design an XML schema for hospital information management. Include every feature
        available into the schema.

2 (a) What are constrained properties related to a bean? Explain and give an instance of it.
   (b) Describe how customizers can be provided for the bean component.

3   What is a style class? Explain in detail the concept of inheritance in cascading style
        sheet.

4   Explain the process of connecting the Molecule bean and Tick Tock Beans.

5 (a) Explain briefly how to use the header () function in different ways.
   (b) Explain the advantages of the PHP functions available for the time and date.

6   What are the advantages of AJAX? Write an AJAX PHP script to demonstrate how a
        web page can communicate with a web server while a user type characters in an input
        field.

7   How can we prevent multiple submissions of a form on server side? Explain with
        example.

8 (a) Explain the function used to connect to a MySQL database with example.
   (b) Explain about the most common method to retrieve the row from database in PHP.

*****

1

B.TECH III Year II Semester (R09) Regular Examinations, April/May 2012
DATA WAREHOUSING AND DATA MINING
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) What is data mining? Explain how data mining is a step in the knowledge discovery process.
  (b) Explain the need for pre-processing of data. Explain the process of data integration.

2   What is OLAM? Explain the architecture of OLAM.

3   Briefly describe:
  (a) ROLAP.
  (b) MOLAP.
  (c) HOLAP.

4   How can we mine multilevel association rules efficiently using concept hierarchies? Explain.

5 (a) Explain briefly about:
       (i) Market basket analysis.
       (ii) Frequent item sets and closed item sets.
       (iii) Frequent pattern mining.
  (b) What is the purpose of "Attribute selection measures" in classification by decision tree induction? How we can use the "Tree pruning" in classification?
  (c) Define the SVM method. Explain its use in the case of "when the data are linearly separable"? Give an example?

6 (a) Discuss about the categorization of major clustering methods.
  (b) Explain in detail about partitioning methods and hierarchical methods.

7 (a) Describe different types of mining data streams. Explain.
  (b) Explain about sequential pattern mining.

8 (a) Discuss about multi-dimensional analysis and descriptive mining of complex data objects.
  (b) Explain about the mining in World Wide Web.

*****

B.TECH III Year II Semester (R09) Regular Examinations, April/May 2012
DATA WAREHOUSING AND DATA MINING
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a)   What is data mining? Why it is important?
  (b)   Explain the architecture of data mining system.

2 (a)   Explain briefly about OLAP operations.
  (b)   Explain data warehouse architecture.

3 (a)   Can we design a method that finding frequent item sets using candidate generation.
  (b)   Discuss about the basic concepts of mining frequent patterns.

4 (a)   What is the purpose of "Attribute selection measures" in classification by decision tree
        induction? How we can use the "Tree pruning" in classification?
  (b)   Define the terms:
        (i) Rule quality measures.
        (ii) Rule pruning.
        (iii) Discuss rule induction using a sequential covering algorithm.

5 (a)   Briefly outline how to compute the dissimilarity between objects described by the
        following types of variables:
        (i) Numerical (Interval-scaled) variables.
        (ii) Asymmetric binary variables.
        (iii) Categorical variables.
  (b)   Why is outlier mining important? Briefly describe the different approaches behind
        statistical-based outlier detection, distanced-based outlier detection, density-based
        local outlier detection, and derivation-based outlier detection.

6 (a)   Explain about mining in time-series data.
  (b)   Explain about characteristics of social networks.

7 (a)   Explain similarity search, multidimensional analysis of multimedia data mining.
  (b)   Explain in briefly about mining multimedia data on the web.

8 (a)   Illustrate the theoretical foundations of data mining.
  (b)   Explain the terms:
        (i) Data mining. (ii) Privacy. (iii) Data security.

*****

Code: 9A05706

B.TECH III Year II Semester (R09) Regular Examinations, April/May 2012
DATA WAREHOUSING AND DATA MINING
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Explain the following:
        (i) Relational databases.
        (ii) Data warehouses.
        (iii) Transactional databases.
   (b) Explain how the evolution of database technology led to data mining.

2 (a) Explain the various techniques involved in data cube technology.
   (b) Discuss the issues regarding data warehouse architecture.

3 (a) Which algorithm is an influential algorithm for mining frequent item sets for Boolean association rules? Explain.
   (b) How can we further improve the efficiency of apriori-based mining?

4 (a) What is the importance of cross validation and boot strap in evaluating the accuracy of classifier or predictor?
   (b) Define ROC curves. What is the use of ROC curves in classification models explain with a neat diagram?

5 (a) Data cubes and multi-dimensional database contain categorical, ordinal and numerical data in hierarchical or aggregate forms. Based on what you have learned about the clustering methods, design a clustering method that finds clusters in large data cubes effectively and efficiently.
   (b) Given two objects represented by the tuples (22,1, 42, 10) and (20, 0, 36, 8)
        (i) Compute the Euclidean distance between the two objects.
        (ii) Compute the Manhattan distance between the two objects.
        (iii) Compute the Minkowski distance between the two objects, using q=3.

6   Suppose that a power station stores data regarding power consumption levels by time and by region, In addition to power usage information per customer in each region. Discuss how to solve the following problems in such a time-series database.
   (a) Find similar power consumption curve fragments for a given region on Fridays.
   (b) Every time a power consumption curve rises sharply, what may happen within the next 20 minutes?
   (c) How can we find the most influential features that distinguish a stable power consumption region from an unstable one?

7   Precision and recall are the two essential quality measures of an information retrieval system.
 (a) Explain why it is the usual practice to trade one measure for the other. Explain why the F-score is a good measure for this purpose.
 (b) Illustrate the methods that may effectively improve the F-score in an information retrieval system.

8   What are the major challenges faced in bringing data mining research to market? Illustrate one data mining research issue that, in your view, may have a strong impact on the market and on society. Discuss how to approach such a research issue.

*****

B.TECH III Year II Semester (R09) Regular Examinations, April/May 2012
DATA WAREHOUSING AND DATA MINING
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Explain the knowledge discovery as a process in detail.
  (b) Discuss the major issues in data mining.

2 (a) The four major types of concept hierarchies are schema hierarchies, set-grouping hierarchies, operation-derived hierarchies and rule based hierarchies. Briefly define each type of hierarchy.
  (b) Business analyst enjoys certain benefits from having data warehouse. Discuss them briefly.

3 (a) How can we mine multilevel association rules efficiently using concept hierarchies? Explain.
  (b) How association rules are mind to correlation analysis? Explain.

4 (a) How can we obtain classification by back propagation?
  (b) How can we select the models by estimating confident intervals?

5 (a) Briefly outline how to compute the dissimilarity between objects described by the following types of variables:
        (i) Categorical variables.
        (ii) Ratio-Scaled variables.
        (iii) Non-metric vector objects.
  (b) Design a privacy-preserving clustering method, so that a data owner would be able to ask third party to mine the data for quality clustering without worrying about the potential inappropriate disclosure of setting private or sensitivity information stored in the data.

6 (a) What is Link mining? Explain about the Tasks and challenges of link mining.
  (b) Explain about multi relational data mining.

7 (a) Discuss special data cube construction and spatial OLAP.
  (b) Explain about the dimensionality reduction for text in text mining

8 (a) What are the additional themes on data mining? Explain.
  (b) What are the examples of commercial data mining systems? Explain.

*****

Code: 9A05709

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
INFORMATION SECURITY
(Information Technology)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   (a)   What is the need for digital signature?
    (b)   Describe the proposal made by Denning for authentication and key exchange.

2   (a)   Define each of the terms "Secure" and "Protected", making clear the distinction between them.
    (b)   List two purposes for which asymmetric encryption are especially appropriate.
    (c)   Define keyless cipher. Explain with an example.

3   (a)   Give a note on program security flaws.
    (b)   List the virus effects and their causes.

4   (a)   Explain Man-in-the- middle attack.
    (b)   Illustrate the public key encryption process and explain.

5   (a)   What is Radix-64 format? Explain how both PGP and S/MIME perform the Radix-64 conversion is performed.
    (b)   Describe the five principal services that Pretty Good Privacy (PGP) provides.

6   Explain In detail IP security.

7   (a)   What is WWW? What are the challenges web presents? Discuss.
    (b)   Explain how SSL makes use of TCP to provide a reliable end-to-end secure service.

8   (a)   Explain firewalls and how they prevent intrusions.
    (b)   Explain the concept of reference monitor.

*****

Code: 9A05709

2

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
INFORMATION SECURITY
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Explain in detail about various arbitrated digital signature techniques.

2   (a)   Explain the four classes of threats.
    (b)   Differentiate between symmetric cryptography and asymmetric cryptography.

3   (a)   Explain the techniques for locating potential covert channels.
    (b)   List the virus effects and their causes.

4   With a neat diagram explain the processing steps of SHA-512.

5   What is Kerberos? Explain how it provides authenticated service.

6   (a)   Explain in detail Anti-Replay mechanism in AH.
    (b)   What is a cookie? How are they used in thwarting clogging attacks in Oakley algorithm?

7   Explain in detail about secure electronic transaction.

8   (a)   List the characteristics of a good firewall implementation.
    (b)   Explain in detail the two broad categories of statistical anomaly detection.

*****

3

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
INFORMATION SECURITY
(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Describe electronic mail security.

2   (a)   What is difference between transport mode and tunnel mode?
    (b)   Why does ESP include a padding field?

3   (a)   Briefly explain how Netscape Navigator and Internet Explorer implemented SSL technology.
    (b)   Explain SSL record protocol operation with a neat sketch.

4   (a)   What can be the two main attacks on corporate networks?
    (b)   Give a detailed description of the two approaches to intrusion detection.

5   (a)   In your own terms explain how people protect computing systems.
    (b)   What is Caesar cipher? Give example. Explain about its cryptanalysis.

6   (a)   What are storage channels? Explain.
    (b)   Explain the relevance of buffer overflows to security. How can it be mitigated?

7   List and explain the four general categories of schemes for the distribution of public keys.

8   What are replay attacks? Give examples. Explain the approaches for coping with replay attacks.

*****

4

III B. Tech II Semester (R09) Regular Examinations, April/May 2012
INFORMATION SECURITY
(Information Technology)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1   Write in detail the arbitrated digital signature approaches and direct digital signature approaches in detail.

2   (a)   Describe the properties of "Trustworthy" encryption systems.
     (b)   Compare the advantages and disadvantages of stream and block encryption algorithms.

3   (a)   What is a Trapdoor? Give examples. What are its causes?
     (b)   Explain in detail the programming flaws that involve synchronization?

4   (a)   Explain the principles of public-key cryptography.
     (b)   Explain message authentication without message encryption.

5   Describe the authentication dialogue used by Kerberos for obtaining services from another realm.

6   Explain Key management.

7   (a)   What are the two levels of alerts? List the alerts under them.
     (b)   Discuss various web security approaches based on their scope of applicability and their relative location within the TCP/IP protocol stack.

8   (a)   What is the need of virus counter measures?
     (b)   What are the types of firewall?

*****

B.Tech III Year II Semester (R09) Regular Examinations, April / MAY 2012

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1   Explain the various text processing utilities with syntax and examples.

2   (a)   Discuss in detail about the input and output redirection.
     (b)   Write a shell script for multiplicative table from 2 to 5.

3   (a)   Give brief description on the record locking.
     (b)   Describe in detail about the stream errors.

4   (a)   Define a process. Explain the various states in process in detail.
     (b)   List and explain the various components that are present in a process.

5   What is meant by inter process communication? Explain the inter process communication by using message queues and shared memory.

6   (a)   Describe in detail about the kernel data structures for semaphores.
     (b)   Explain the various semaphores operations with examples.

7   (a)   Distinguish between threads and processes
     (b)   Explain the following:
           (i) Thread scheduling   (ii) Thread stack.

8   (a)   Define a socket. Draw the server socket APIs calling sequence diagram and explain it.
     (b)   Explain the following:
           (i) .bind   (ii) .connect   (iii) .send.

*****

B.Tech III Year II Semester (R09) Regular Examinations, April / MAY 2012

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1   (a)   Explain any five text processing utilities with their syntax and examples.
    (b)   Describe the various disk utility commands with suitable examples.

2   (a)   Write a shell script to test whether a given string is palindrome or not.
    (b)   Explain the various arithmetic operators used in shell programming.

3   (a)   What are file descriptors? Explain their role in Linux programming.
    (b)   Write short notes on hard links.

4   (a)   What is a signal? Explain in detail about the generation and handling the signals.
    (b)   Discuss in detail about the unreliable signals.

5   (a)   What is a pipe? How can we achieve the inter process communication by using pipes. Explain it in detail.
    (b)   Draw and explain the architecture for system V IPC message queues.

6   (a)   Describe in detail about the kernel data structures for semaphores.
    (b)   Explain the various semaphores operations with examples.

7   (a)   Explain in detail about attributes of a thread.
    (b)   Explain, how to synchronize the threads with mutexes.

8   (a)   What is a socket? Draw and explain the client socket APIs calling sequence diagram.
    (b)   Discuss in detail about the following:
          (i). accept   (ii) .listen   (iii) .recv.

*****

B.Tech III Year II Semester (R09) Regular Examinations, April / MAY 2012

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What are actions? Explain them in detail.
   (b) Explain the various networking commands with their syntax examples.

2 (a) Explain the importance of command substitution in Linux programming.
   (b) Give brief description about the control structure of a shell.

3   Explain in detail about the various formatted I/O using C language.

4 (a) How can we terminate a process. Explain them in detail.
   (b) Distinguish between fork and vfork functions.

5 (a) What are semaphores? How can we achieve the inter process communication by using semaphores. Explain in detail.
   (b) Explain the use of the following functions
        (i). Shmget   (ii).Shmat   (iii). Shmctl   (iv). Shmdt

6 (a) Describe in detail about the kernel data structures for semaphores.
   (b) Explain the various semaphores operations with examples.

7 (a) Present a detailed note on creation of threads.
   (b) Describe in detail about the attributes of a thread.

8 (a) Draw the architecture for sockets APIs creating a datagram socket for inter process communication and explain it.
   (b) Write short notes on the following:
        (i).recvfrom   (ii). shutdown   (iii). sendto.

*****

4

B.Tech III Year II Semester (R09) Regular Examinations, April / MAY 2012

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the various backup utilities with their syntax and examples.
   (b) Give brief description about the scripts.

2 (a) Describe in detail about the shell meta characters.
   (b) Explain the role of here documents in Linux programming.

3 (a) Write in detail about the low level file access.
   (b) Present a detailed note on standard I/O using C language.

4 (a) Draw and explain the control structure of a process model by using unix.
   (b) Explain the use of wait function in process.

5   Give brief description about the following:
   (a) (a). Message Queues   (b). Semaphores   (c). Pipes.

6 (a) Describe in detail about the kernel data structures for semaphores.
   (b) Explain the various semaphores operations with examples.

7 (a) Distinguish between threads and light weight process.
   (b) Give brief description about the POSIX thread API's.

8 (a) What is a socket? Draw and explain the client socket APIs calling sequence
        diagram.
   (b) Write short notes on the following:
        (i). bind   (ii). connect   (iii). send.

*****