Code: 9A05503

1

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

COMPUTER GRAPHICS

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Discuss the functioning of joystick.
(b) Explain the construction and functioning of shadow mask- CRT devices.

2 (a) What is aliasing? Explain different methods of minimizing its effect.
(b) Explain the DDA algorithm for ellipse generation.

3 (a) What is meant by composite transformations?
(b) If P(x, y, z) is an object reference point for scaling, explain how the scaling operation is defined in terms of scaling with respect to the origin.

4 (a) What is viewing? Discuss about multiple views with suitable example.
(b) Elaborate on SPHIGS applications running in window-manager.

5 (a) Write algorithm for displaying a parametric cubic curve.
(b) Explain briefly about quadric surfaces.

6 Write notes on the following:
(a) Cell decomposition.
(b) Spatial occupancy enumeration.
(c) Octrees.

7 Explain the concept of chromatic color in detail.

8 (a) Outline the key ideas behind the radiosity equation for rendering. Radiosity is most useful for what kinds of scenes.
(b) Describe, how hidden surface removal and projection are integrated into the ray-tracing process.

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Code: 9A05503

2

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

COMPUTER GRAPHICS

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain the applications of large screen displays. What graphical output devices support it?
(b) How long would it take to load a 640 X 480 frame buffer with 12 bits per pixel, if 105 bits can be transferred per second?

2 (a) Discuss the steps involved in midpoint subdivision algorithm for clipping lines.
(b) What are the limitations of mid-point subdivision algorithm for clipping lines?

3 (a) Show how shear transformations expressed in terms of rotation and scaling.
(b) Give the transformation matrix for parallel and isometric projection.

4 (a) What are the different characteristics of retained-mode graphics package?
(b) Explain different types in defining structures.

5 What are parametric cubic curves? Explain them with example.

6 (a) Explain solid geometry method in detail.
(b) Briefly write about modeling and co-ordinate transformations.

7 (a) How are colors generated in color monitor? Describe briefly.
(b) Explain dithering technique.

8 (a) Illustrate the key differences between flat shading, Gouraud shading and Phong shading of polygons.
(b) Describe the Z-buffer algorithm. For what type of scenes Z-buffer does not perform well? What effects are difficult to implement with Z-buffer? Explain why large difference between the far and near distances in the projection transformation will have a negative effect on Z-buffer performance.

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Code: 9A05503

3

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

COMPUTER GRAPHICS

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is half toning? Distinguish between antialiasing and half toning.
(b) How the size of frame buffer and resolution are related.

2 Explain the algorithm for line clipping by Cohen- Sutherland algorithm. Demonstrate with an example are the three cases of lines.

3 (a) What is shearing? Differentiate between x-shear and y-shear.
(b) Give the matrix representations and homogenous coordinates for all the cases in reflection.

4 (a) Write down the procedure for opening and closing structures.
(b) What is a display traversal? Explain the posting structures for display structures

5 (a) Derive 3 D plane surface equation.
(b) Write notes on different representations of a polygon mesh.

6 What are the methods to represent a solid object in computer graphics? Explain them in detail.

7 Write short notes on:
(a) Half-toning.
(b) CSG models.

8 (a) Explain the visible surface ray tracing.
(b) Describe the technique of color interpolation shading. How does it differ from Phong Shading?

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Code: 9A05503

4

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

COMPUTER GRAPHICS

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the working of a plasma panel.
(b) Explain the design issues in color CRT monitors.

2 Explain how the Potentially Entering (PE) Potentially Leaving (PL) cases are determined in Cyrus-Beck algorithm.

3 (a) What is meant by reflection? Derive the transformation matrices for reflection about the line y=-x and reflection about an arbitrary line y=x.
(b) Enumerate the differences between 2 D - graphics and 3 D - graphics.

4 (a) What is a component? Explain the hierarchy of robot components.
(b) What is DAG? Discuss various purposes of DAG, with a suitable example.

5 What is a quadric surface? Explain different types of quadric surfaces with example.

6 Explain in detail about constructive solid geometry.

7 (a) Describe any two color models used in computer graphics.
(b) Explain halftoning technique.

8 Explain the method of ray-tracing for detecting visible surfaces.

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Code: 9A05601

1

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

OBJECT ORIENTED ANALYSIS & DESIGN

(Common to CSE, IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain about principles of modeling in detail.

2 (a) Explain about the steps for modeling the distribution and responsibilities with example.
(b) Explain about the steps for modeling the non software things.

3 Explain about the different ways of using a class diagram when modeling the static design view of a system.

4 Explain about the following:
(a) Messages.
(b) Links.
(c) Sequencing.

5 (a) What is a use case? How it differs from the flow of events?
(b) What are the various flows of events in UML?
(c) Enumerate the steps to model the behavior of an element with an example.

6 Write a short note on the following:
(a) History states.
(b) Sub states.
(c) Sequential sub states.
(d) Concurrent sub states.

7 (a) Enumerate the steps to forward engineer and to reverse engineer a deployment diagram.
(b) What are the characteristics of a well-structured deployment diagram?
(c) What are the common uses of deployment diagram?

8 (a) Draw and explain sequence diagram for the search facility of the objects, so that “Wild Card” characters can be used when searching for titles, authors, or borrowers.
(b) Explain the searching for a book operation using a java program and give its equivalent class diagram.

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Code: 9A05601

2

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

OBJECT ORIENTED ANALYSIS & DESIGN

(Common to CSE, IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain about object oriented modeling in detail.

2 (a) Define responsibility. Explain responsibility with an example.

(b) Explain about the steps for modeling of vocabulary of a system with example.

3 Explain and draw the class diagram for student course registration.

4 Define interaction? Draw the graphical representation of messages, links and sequencing of interactions in detail.

5 Prepare an activity diagram that elaborates the details of logging into an email system. Explain the steps with a neat diagram.

6 Define an event and a signal. Explain briefly about the common modeling techniques of events and signals.

7 (a) Enumerate the steps to model executables and libraries.

(b) What are the characteristics of well-structured components? Explain.

8 Draw the complete use case diagram for the library system and explain the relationships and responsibilities of various actors.

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Code: 9A05601

3

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

OBJECT ORIENTED ANALYSIS & DESIGN

(Common to CSE, IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain how the UML addresses four aims of modeling.

2 Explain about the steps for modeling the architectural views.

3 Explain and draw the object diagram for student course registration.

4 Explain and draw the sequence diagram for treatment use case between patient and doctor.

5 Draw the usecase diagram and the activity diagram for an online airline reservation system. Summarize the purpose of each usecase, actor, and its importance. Briefly explain various activity states and action states in the activity diagram.

6 Explain the forward engineering tool and reverse engineering tool for a sample code with respect to the state chart diagram.

7 (a) Define component. What are the differences between components and classes? How are component and interface related?
(b) What are the properties of components?
(c) What are the standard stereotypes that apply to components?

8 (a) Draw a class diagram showing architectural overview of the library system.
(b) Explain “Issuing of a book” operation using collaboration diagram.

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Code: 9A05601

4

B. Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

OBJECT ORIENTED ANALYSIS & DESIGN

(Common to CSE, IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain in detail about UML language.

2 (a) Differentiate between collaboration diagram and state chart diagram of UML.
(b) Differentiate between sequence diagram and activity diagram in detail.

3 Explain about the steps involved in modeling simple collaborations with examples.

4 Explain in detail about the collaboration diagram with example.

5 Differentiate between forking and joining. What are the stereo types that can be applied to dependency relationships among use cases? Explain in detail the common uses and properties of activity diagram.

6 (a) What is a state? What are the several parts of states?
(b) What is a transition? Explain the several parts of transitions.

7 Explain the common modeling techniques of deployment.

8 What are the various object participating in the library information system? Explain the object diagram that is associated with various interactions with a neat diagram.

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Code: 9A05701

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

WEB TECHNOLOGIES

(Common to IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain in detail IIS XAMP web server and its installation procedure.

2 (a) What makes PHP a choice among the other scripting languages?
(b) Explain the structure of a PHP page.

3 (a) Explain about PHP variables with suitable examples.
(b) What are comparison operators? Explain.
(c) Write a PHP program to sort the array elements without using sort ().

4 (a) Explain the process of parsing a configuration file.
(b) Write a PHP program that concatenates two files.

5 Explain the following:
(a) Setting cookies.
(b) Reading cookies.
(c) Deleting cookies.

6 (a) Explain briefly about the GET and POST methods.
(b) Write a PHP program to submit values using super globals and globals.

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

8 Explain the following functions:
(a) xml parser create ().
(b) xml_set_element_handler ().
(c) xml_parser_free ().

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Code: 9A05701

2

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

WEB TECHNOLOGIES

(Common to IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is the difference between application server & web server? Explain.
(b) Explain briefly about internet information server.

2 Explain:
(a) PHP vs. HTML.
(b) Script vs. file.
(c) The anatomy of a PHP page.

3 Explain:
(a) Variables.
(b) Expressions.
(c) Statements.
(d) Write a PHP program that gives the no. of occurrences.

4 (a) How can you know whether the object is a descendant of a class or not? Explain.
(b) Explain about parent constructors.

5 (a) List and explain the parameters available when creating a cookie using setcookie () function with an example.
(b) Explain why cookies are becoming less trusted.

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

7 Explain the following functions with examples:
(a) Mysql_connect (). (b) mysql_close (). (c) mysql_query().

8 (a) What is simple XML? What are the advantages of simple XML?
(b) Write a php code to load and use the xml files in simple XML.

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Code: 9A05701

3

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

WEB TECHNOLOGIES

(Common to IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) How are web servers and web browsers related? Discuss with examples.
(b) Write about Apache web server installation procedure.

2 (a) Explain briefly about servelets & JSP.
(b) What are disadvantages of servelets & JSP?
(c) How PHP is better than servelets & JSP?

3 (a) What is a string concatenation operator? Explain with an example.
(b) Write a PHP program that gives the no. of occurrences of the expression in a string using functions.

4 (a) What is the use of 'this' variable? Explain with an example program.
(b) What is inheritance? How can you implement it?

5 (a) What are the advantages and disadvantages of cookies?
(b) List and explain the parameters available when creating a cookie using setCookie () function.

6 (a) Differentiate superglobals versus globals.
(b) Write a PHP program to submit values using superglobals and globals.

7 (a) Explain the function used to connect to a MySQL database.
(b) Explain briefly the three components of MVC architecture.

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?

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Code: 9A05701

4

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

WEB TECHNOLOGIES

(Common to IT & CSS)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What is the difference between IIS & WAMP? Explain in detail.

2 (a) What is PHP?
(b) What is the difference between PHP & HTML?
(c) Explain the installation procedure & configuration of PHP.

3 (a) Give a detailed note on PHP logical operators.
(b) Explain about type casting.
(c) Write a PHP program to create login page.

4 Explain:
(a) Class.
(b) Object.
(c) Interface.

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 Explain briefly about the GET and POST methods with examples.

7 Explain briefly about the model view controller architecture.

8 (a) How to initialize the XML parser in PHP? Explain with an example.
(b) Explain briefly the function xml_set_character_data_handler( ) with example.

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Code: 9A05706

1

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

DATA WAREHOUSING & 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 its role in knowledge discovery process.
   (b) Discuss concept hierarchy generation for categorical data with examples.

2. (a) Give the three-tier data warehouse architecture. Explain it.
   (b) Explain BUC algorithm for the computation of sparse or iceberg queries.

3. What is a frequent item set? How to find frequent item sets for a transactional database? Explain any one approach with illustrations.

4. (a) Discuss rule quality measures.
   (b) What is the significance of learning rate in back propagation algorithm?
   (c) How to measure the accuracy of a classifier? Explain.

5. (a) Discuss the typical requirements of clustering in data mining.
   (b) Describe deviation-based outlier detection.

6. (a) Explain Viterbi algorithm.
   (b) Discuss mining alternative substructure patterns in graph mining.

7. Describe various types of text databases. What is meant by text mining? Which data mining functionalities are applicable to text databases?

8. (a) How to choose a data mining system? Discuss.
   (b) Discuss ubiquitous and invisible data mining.

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Code: 9A05706

2

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

DATA WAREHOUSING & DATA MINING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

*****

1. (a) Discuss briefly various data mining functionalities.
   (b) Explain dimensionality reduction as a preprocessing activity.

2. (a) Define data warehouse. Differentiate between data warehouse and database system.
   (b) Explain mining class comparisons with AOI.

3. (a) Discuss ECLAT algorithm to find frequent patterns.
   (b) Explain association rule clustering system with examples.

4. (a) Why information gain is considered as attribute selection measure? Illustrate with an example.
   (b) How to derive rules from a decision tree?
   (c) Discuss ensemble methods to increase the accuracy of a classifier.

5. (a) Discuss interval-scaled variables and their standardization.
   (b) Discuss the categorization of major clustering methods.
   (c) Describe a typical dimension-reduction sub space clustering methods.

6. (a) Explain Baum – Welch algorithm.
   (b) What is a social network? Discuss its characteristics.

7. (a) How to construct a spatial data cube? Discuss the types of measures in a spatial data cube.
   (b) Describe similarity search in multimedia data.
   (c) Explain locality preserving indexing.

8. Discuss data mining for biological data analysis.

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Code: 9A05706

3

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

DATA WAREHOUSING & DATA MINING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

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1. What is the need for preprocessing the data? Explain briefly various forms of data preprocessing.

2. (a) Discuss multidimensional data model and explain various schemes for multidimensional data model.
   (b) Explain indexing OLAP data.
   (c) Describe types of OLAP servers.

3. (a) Find frequent itemsets for the following table using FP-Growth algorithm. Assume relevant thresholds.

T_{id}	List of item ids
T_1	I_1, I_3, I_5
T_2	I_2, I_4, I_1
T_3	I_1, I_2, I_3, I_4
T_4	$I_5, I_3, I_2,$
T_5	$I_1, I_2, I_5,$
T_6	$I_3, I_4, I_5,$

   (b) Discuss constraint based mining.

4. (a) State Baye's theorem. Explain how it can be adopted for classification.
   (b) Describe case-based reasoning as a lazy learner.
   (c) List the measures for classifier's accuracy.

5. (a) Discuss hierarchical methods for clustering. List their merits and demerits.
   (b) Explain statistical based outlier detection.

6. Discuss the characteristics of social networks and the tasks challenges in mining social networks

7. (a) Write about probabilistic latent semantic indexing method.
   (b) Explain HITS algorithm.
   (c) What is meant by an object cube?

8. (a) Discuss data mining for financial data analysis in brief.
   (b) Write a note on statistical data mining.

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Code: 9A05706

4

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

DATA WAREHOUSING & DATA MINING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

*****

1. (a) List and explain data mining task primitives.
   (b) How to measure the central tendency of data?
   (c) Describe data cleaning process.

2. (a) Explain OLAP operations in the multidimensional data model.
   (b) Discuss star-cubing algorithm.

3. (a) Consider the following table to find frequent item sets using vertical data format. Support threshold 30%

T_{id}	List of items
T_{01}	milk, biscuits, surf powder, teabags
T_{02}	teabags, sugar, soap
T_{03}	milk, sugar, bread, soap
T_{04}	bread, teabags, biscuits
T_{05}	chocolates, milk, biscuits
T_{06}	milk, teabags, bread
T_{07}	bread, biscuits, chocolates
T_{08}	milk, surf powder, bread

   (b) How to mine multilevel association rules? Discuss

4. (a) Explain classification by association rule analysis.
   (b) How does a Bayesian belief network learn?
   (c) What is the necessity of tree pruning in decision tree induction?

5. (a) Discuss chameleon algorithm for clustering.
   (b) Describe model-based clustering methods briefly.

6. (a) What is multirelational data mining?
   (b) Discuss mining customers' networks for viral marketing.
   (c) Describe Hoeffding Tree algorithm.

7. (a) What is a multimedia database? Explain multidimensional analysis of multimedia data.
   (b) Discuss the basic measures for text retrieval.
   (c) Describe DOM structure of a web page.

8. Explain the social impacts of data mining in detail.

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Code: 9A05709

1

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

INFORMATION SECURITY

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What makes a secure encryption algorithm? Explain.

2 (a) Write notes on timing channels.
(b) Define buffer overflows attacks. Give an example. What are its security implications?

3 (a) With a neat sketch explain how public key crypto system offers secrecy and authentication.
(b) “Message encryption by itself can provide a measure of authentication.” Justify.

4 (a) What are the requirements of digital signatures?
(b) Mention the problems associated with direct digital signatures. How are they handled using arbitrated digital signatures?

5 (a) What are MIME transfer encodings?
(b) Write the different cryptographic algorithms used in S/MIME.

6 (a) Mention the three functional areas of IP-Level security.
(b) Discuss in detail the basic combinations of security associations.

7 (a) List the sequence of events that are required for a secure electronic transaction.
(b) Explain the concept of dual signature.

8 (a) Explain in detail intrusion detection.
(b) Explain in detail trusted systems.

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Code: 9A05709

2

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

INFORMATION SECURITY

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Discuss in detail the substitution ciphers and the transposition ciphers.

2 Write notes on the following:
(a) Code red worm.
(b) Trapdoors.
(c) Salami attacks.

3 Explain different crypto algorithms where public-key cryptosystems are used.

4 (a) What is digital signature? Explain the benefits of digital signature.
(b) Explain the approaches for dealing with replay attacks.

5 (a) What are the functions included in MIME in order to enhance security how are they done?
(b) Why does PGP maintain key rings with every user? Explain how the messages are generated and received by PGP.

6 (a) Discuss about the documents regarding IP security protocol.
(b) Describe any four ISAKMP payload types listing the parameters of the pay-load.

7 Discuss differences between SSL and TLS.

8 (a) Draw the figure showing VACM logic and explain.
(b) The encryption scheme used for UNIX passwords is one way; it is not possible to reverse it. Therefore, would it be accurate to say that this is, in fact, a hash code rather than an encryption of the password.

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Code: 9A05709

3

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

INFORMATION SECURITY

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Describe in detail the controls for preserving confidentiality, integrity and availability.

2 (a) Write a detailed note on covert channels.
(b) Explain how viruses completely replace a program.

3 (a) What is an elliptic curve? What is the zero point of an elliptic curve? What is the sum of three points on an elliptic curve that lie on a straight line?
(b) List the requirements of MAC. Describe message authentication code based on DES.

4 (a) Why the digital signature is needed?
(b) Explain the general approaches to deal with replay attacks. Mention where they are suitable.

5 Discuss the following in relation with S/MIME:
(a) RFC 822.
(b) MIME Header fields.
(c) MIME Content types.

6 (a) What is the default length of authentication data field? On what fields is it calculated?
(b) Explain how Diffie-Hellman protocol is vulnerable to man-in-the-middle attack. How is rectified in Oakley protocol?

7 (a) What steps are involved in the SSL record protocol transmission?
(b) What is a dual signature and what is its purpose?

8 (a) What is a firewall? Explain the capabilities that are within the scope of a firewall.
(b) What are the measures that may be used for intrusion detection?

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Code: 9A05709

4

III B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2013

INFORMATION SECURITY

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What are the major points of weakness in a computing system? Describe the types of vulnerabilities applied to them.

2 (a) "We do not have techniques to eliminate all program security flaws". Why?
(b) What qualities of a virus are appealing to the virus writers?

3 (a) What requirements must a public key cryptosystems fulfill to be a secure algorithm?
(b) Describe the public-key distribution algorithm where public-key authority is involved.

4 (a) Describe the properties of digital signature.
(b) Explain the proposal by Needham and Schroeder for secret key distribution.

5 (a) Describe how authentication and confidentiality are handled in S/MIME.
(b) Explain what Kerberos is and give its requirements.

6 Explain encapsulating security pay load.

7 Explain in detail about SSL record protocol operation.

8 (a) What is an access policy? On what factors does access determination depends.
(b) Discuss the two techniques for developing an effective an efficient proactive password checker.

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Code: 9A12601

1

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

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 utility commands with their syntax and example.
(b) Describe the contents of a directory, explaining the mechanism by which its entries are updated by cp, mv and rm. Why is the size of a directory usually small?

2 (a) Write a shell script to display the multiplication table.
(b) Discuss in detail about the file name substitution in shell.

3 (a) What is a file? What are the different files attributes? Explain them in detail.
(b) Write the syntax of open function API and explain the various arguments present in it.

4 (a) What is a zombie process? Explain its importance in Unix programming.
(b) How to terminate a process? Explain in detail.
(c) Explain the pause and alarm functions.

5 (a) Write a program that locks resources by using named pipes.
(b) List and explain the different APIS for message manipulation.

6 (a) Write and explain the procedure to interact a client process with server process by using semaphores.
(b) With the help of syntax and example, explain any three APIs for shared memory.

7 (a) Write a C program to print the message by only one thread at a time by using messages.
(b) Give brief description about the relationship between threads, LWPs and hardware processor.

8 (a) What is a socket and explain its role in communication between client and server?
(b) Explain in detail about the various arguments used in bind and connect socket system calls.

*****

Code: 9A12601

2

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is the significance of these commands?
(i) mv $HOME/include (ii) cp – r bar1 bar2 (iii) mv* .. /bin.
(b) Give brief description about various networking commands available in Linux.

2 (a) Present a detailed note on shell functions.
(b) What is the role of here documents in shell programming?
(c) Write a shell script to display current time and date.

3 Explain the following system calls:
(a) Create.
(b) Read.
(c) Write.
(d) Close.

4 (a) Explain the importance following in system calls in Unix programming:
(i) fork (ii) vfok.
(b) Give brief description about the signal mask.

5 (a) What is a semaphore? Explain the various functions support by Unix system V semaphores.
(b) Explain the role of pipes in inter process communication.

6 (a) Write and explain the procedure to interact a client process with server process by using shred memory.
(b) How posix.1b semaphores differ from those of Unix system V?

7 (a) Write a C program lock and to test the condition variable by using the mutex.
(b) How can we create the new thread? Explain it in detail.

8 (a) Draw and explain the calling sequence socket APIs creating a datagram socket for inter process communication.
(b) Write a short note on connection oriented and connection less protocols.

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Code: 9A12601

3

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) How will you remove blank lines from a file using?
(i) grep (ii) sed
(b) Distinguish between a wild card and regular expression.
(c) Find out the occurrence of three consecutive and identical word characters (like mmm or nnn) by using sed.

2 (a) With the help of syntax and example, explain the case condition in shell programming.
(b) Write a shell script to demonstrate the various arithmetic operators supported by shell.

3 (a) What system calls are used to retrieve the file attributes of a given file? Explain them in detail.
(b) Discuss in detail about the access function available in Unix.

4 (a) Explain the importance of alarm signal in Unix programming.
(b) List the advantages of creating a new process.
(c) Write short notes on unreliable signals.

5 (a) Explain with the help of neat sketch the client/server interaction by using semaphores.
(b) Write a program that attaches shared memory too close to the end of its stack.

6 (a) Discuss in detail about the role of message queues in inter process communication.
(b) Write short notes on kernel support for semaphores.

7 Describe in detail about the following functions:
(a) thr_create
(b) thr_ join
(c) thr_sigsetmask
(d) pthread_create
(e) pthread_detach.

8 (a) With the help of a neat sketch, explain the socket API calling sequence for server and client.
(b) Explain the following socket system calls:
(i) accept (ii) shutdown.

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Code: 9A12601

4

B.Tech III Year II Semester (R09) Regular & Supplementary Examinations, April/May 2013

LINUX PROGRAMMING

(Information Technology)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) How do you locate lines beginning and ending with a dot using?
(i) grep (ii) sed

(b) What do these commands do?
(i) grep abc (ii) grep <html> foo (iii) grep "*" foo (iv) grep *.

2 (a) Write a shell script to find whether the given string is palindrome or not.

(b) Present a detailed note on control structure of a shell programming.

3 (a) What system calls are used to change the user ID and group ID of file? Explain them.

(b) Give brief description about the file locking.

4 (a) Write and explain the different versions of exec system call.

(b) Which system call is used to block the generated process? Explain it by using syntax and example.

5 (a) Explain with the help of neat sketch the client/server interaction by using shared memory.

(b) Give brief description about the different library functions available in message queues.

6 (a) List and explain the various APIs available for shared memory.

(b) Distinguish between Unix system V and posix.1b semaphores.

7 (a) Write a program to synchronize read and write threads by using semaphores.

(b) Explain the various arguments present in pthread_create and thr_continue functions.

8 Explain the different APIs used by sockets in Unix programming.

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