

**B.TECH. DEGREE EXAMINATION, MAY 2014****Sixth Semester**

Branch : Computer Science and Engineering/Information Technology

**NETWORK COMPUTING (R, T)**

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 Admissions]

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all questions.**Each question carries 4 marks.*

1. Differentiate between <SPAN> and <DIV> tags.
2. Explain the usage of FRAME attribute of the <TABLE> tag.
3. Give a sample code illustrating how to embed Active X contents in an HTML document.
4. What is DOM ? Explain the need for DOM.
5. Discuss the means for thread synchronization.
6. How do you set a thread's priority ? Explain.
7. Explain the life-cycle of an Applet.
8. Give a sample Applet code and show how you include it in an HTML page.
9. What are the limitations with CGI programs when compared to traditional application programs ?
10. Explain the purpose of the following four HTTP methods — GET, PUT, POST and HEAD.

(10 × 4 = 40 marks)

**Part B***Answer all questions.**Each full question carries 12 marks.*

11. (a) What are the advantages of using frames ? Give an HTML code for a scrollable and resizable frame with *frameborder* and *framespacing* attributes set.  
(6 marks)
- (b) Give a HTML code fragment for creating a 3 × 3 table with column headers. Also give the purpose of each of the following tags : <caption>, <colgroup>, <col/>, <thead>, <tbody>, <tfoot>.

(6 marks)

Or

Turn over

12. (a) Explain how you link an external style sheet to an HTML document. How do you inline a style ?  
(6 marks)
- (b) Explain how one can embed a style sheet in an HTML document. Also explain how a style sheet can be imported into a document.  
(6 marks)
13. (a) Write a Java script program that reads in two integers and displays whether the first is a multiple of the second.  
(6 marks)
- (b) Write a Java script function that takes an integer and reverses its digits and returns. Incorporate this function into a script that reads an integer from the user. Display the result of the function in status bar.  
(6 marks)

Or

14. Implement Java script functions to perform Linear Search and Binary Search on an array of integers.
15. (a) Explain the properties of final classes and final methods. Demonstrate their usage.  
(4 marks)
- (b) Differentiate between static variables and final variables. Demonstrate their usage.  
(4 marks)
- (c) Explain how the effect of multiple inheritance can be achieved in Java programs.  
(4 marks)

Or

16. Explain the purpose and usage of the keywords **try**, **catch**, **throw**, **throws** and **finally**, giving program fragments. What happens when an exception is uncaught ?
17. Give and explain a simple UDP client program and a corresponding server program.

Or

18. What are factory methods ? Give three commonly used **InetAddress** factory methods. Also give a sample code to illustrate the use of these methods.
19. Give a simple CGI program in C to validate username and password, and explain its working.

Or

20. Explain the working of HTTP protocol. Differentiate between Persistent and Non-persistent HTTP.

[5 × 12 = 60 marks]

G 355

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Computer Science and Engineering / Information Technology

CS 010 601/IT 010 605 – DESIGN AND ANALYSIS OF ALGORITHMS (CS, IT)

(New Scheme – 2010 Admissions onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What are Recursive algorithm? Explain with a simple example.
2. Explain the notion of Control Abstraction.
3. Describe Monte Carlo method.
4. What is Minimum Cost Spanning Tree?
5. What is your idea behind Topological sorting?

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain Time and Space complexity.
7. Compute the cost associated with element comparison with the help of an example.
8. Compare and contrast Divide and Conquer approach with Dynamic programming.
9. Write notes on Fixed tuple and Variable tuple formulation.
10. Explain Deterministic and Non-deterministic algorithms.

(5 × 5 = 25 marks)

**Turn over**

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain the Asymptotic Notations and analyses their Worst, Best and Average case complexity.

*Or*

12. Solve the following recurrence relation :

(a)  $T(n) = T(n/2) + n.$

(b)  $T(n) = T(n/3) + T(2n/3) + n.$

13. Using Divide and Conquer approach; explain Matrix multiplication and its complexity.

*Or*

14. Explain Merge Sort and analyse its complexity.

15. Explain Kruskal's Algorithm with an example and analyse its complexity.

*Or*

16. Explain All Pair Shortest Path problem and find the complexity. Also explain how it is solved.

17. Solve N-Queens problem and justify its complexity analysis.

*Or*

18. State 15-puzzle problem. Mention the best method to solve it on the basis of complexity.

19. Describe Vertex Cover Algorithm. Is it NP-complete.

*Or*

20. Describe any *one* string matching algorithm in detail. Analyse its complexity.

(5 × 12 = 60 marks)

**G 364**

**(Pages : 2)**

**Reg. No.....**

**Name.....**

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

**Branch : Computer Science and Engineering**

**CS 010 602—INTERNET COMPUTING**

**(New Scheme—2010 Admission onwards)**

**[Regular/Improvement/Supplementary]**

**Time : Three Hours**

**Maximum : 100 Marks**

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Discuss the main roles of JVM.
2. Explain Threads.
3. Write the functions of Applets.
4. What is Socket class ?
5. Explain Image filter class.

**(5 × 3 = 15 marks)**

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Write a Java program to show the flow of control from one section of the program to another.
7. Explain Exception Handling.
8. What is JApplet ?
9. Explain Server Socket class in Java.
10. Write briefly on Servlet.

**(5 × 5 = 25 marks)**

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Write a Java program to arrange a set of 25 integers in descending order.

*Or*

12. Explain the object-oriented programming features supported in Java.

**Turn over**

13. Explain multithreaded programs. Explain how thread synchronization is made possible.

Or

14. (a) Explain (i) Method overriding ; and (ii) Abstract class.  
(b) Write the class hierarchy in Java related to exception handling. Explain each class.

15. (a) Explain AWT classes.  
(b) Discuss the advantages of swings.  
(c) Explain Applet architecture.

Or

16. (a) Explain Event Handling.  
(b) How are parameters passed to an Applet ? Write a Java program that demonstrates parameter passing to Applets.

17. Explain socket programming in Java with a suitable example.

Or

18. Write briefly on remote method invocation. Explain the structure of RMI.

19. Write briefly on :

- (a) Image processing using Java.
- (b) Web application development using Java technologies.

Or

20. Discuss the steps for database connectivity using JDBC with an example.

(5 × 12 = 60 marks)

G 373

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Computer Science and Engineering

CS 010 603—SYSTEM SOFTWARE (CS)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. What is parameterised Macros ?
2. What are Literals ? Explain.
3. Explain the functions of a linker.
4. What is backtracking ?
5. Explain the role of device drivers.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain briefly the basic functions of Macro preprocessor.
7. What are addressing modes ? Explain.
8. Explain automatic library search.
9. What is a debugger ? Explain.
10. What are character devices ? Explain.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Give a brief description of Database Management System.

*Or*

12. Explain Macro Processor design in detail.

**Turn over**

13. Discuss the single pass assembler and its algorithm.

Or

14. Describe program blocks and control sections in detail.

15. With diagram, explain how the calling and loading of a subroutine is done using dynamic linking.

Or

16. Explain different types of loaders.

17. What are text editors ? Explain the basic ideas of a text editor.

Or

18. Explain any *two* debugging methods in detail.

19. Explain the general design of a device driver.

Or

20. With a case study explain any *one* device driver.

(5 × 12 = 60 marks)



G 384

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Computer Science and Engineering

CS 010 604—COMPUTER NETWORKS (CS)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Explain the terms (a) Bandwidth ; and (b) Latency.
2. What is Wi-Fi ?
3. Explain bridges.
4. What is TCP ?
5. Explain WWW.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Explain the significance of Delay-Bandwidth product.
7. Explain the physical properties of IEEE 802.3.
8. Compare Packet switching and circuit switching techniques.
9. Explain the frame format of TCP header.
10. Write a note on Generic Application Protocol.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Explain OSI architecture in detail.

Or

12. Explain Internet architecture in detail.

**Turn over**

13. Explain :

- (a) Wimax.
- (b) Bluetooth.

Or

14. Explain, in detail about the different framing techniques.

- 15. (a) Explain Spanning Tree Algorithm.
- (b) Discuss the limitations of Bridges.

Or

16. Compare Distance vector routing and Link state routing with respect to a subnet.

- 17. (a) Explain RPC.
- (b) Discuss the issues of TCP.

Or

18. Explain the different TCP congestion control algorithms.

19. Explain about :

- (a) DNS.
- (b) FTP.

Or

20. Explain the working of Email and explain the Application Layer Protocols that support the reliable transfer of email to correct destination.

(5 × 12 = 60 marks)

G 416

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

Sixth Semester

Branch : Computer Science and Engineering / Information Technology

CS 010 606 L04/IT 010 606 L03 – UNIX SHELL PROGRAMMING (Elective I) (CS, IT)

(New Scheme – 2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

Answer all questions.

Each question carries 3 marks.

1. What are the features of UNIX? Explain.
2. What is a pipe?
3. List some of the applications of awk.
4. Explain the features of KORN Shell.
5. Explain the use of Telnets.

(5 × 3 = 15 marks)

**Part B**

Answer all questions.

Each question carries 5 marks.

6. Explain the process utilities.
7. Explain briefly with example job control.
8. Bring out the user defined functions. Explain the uses of these functions.
9. What are environmental variables? Explain with examples.
10. Give a brief description of Client Server Mechanisms.

(5 × 5 = 25 marks)

Turn over

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain the Process utilities and Disk utilities with examples.

*Or*

12. Give a brief description of UNIX File System.

13. With examples, explain Command execution and Command substitution.

*Or*

14. What is a filter? Explain the filter utilities of UNIX.

15. Using grep, explain with example how the file searching is done?

*Or*

16. With examples, discuss the applications of awk, grep and sed.

17. Discuss the features of different types of shells.

*Or*

18. Explain the command history and command execution process.

19. Give a brief description of process creation and methods of sending signals to processes.

*Or*

20. Explain with proper examples the network management.

(5 × 12 = 60 marks)

**G 396**

**(Pages : 2)**

**Reg. No.....**

**Name.....**

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

**Branch : Computer Science and Engineering**

**CS 010 605 – SOFTWARE ENGINEERING (CS)**

**(New Scheme – 2010 Admission onwards)**

**[Regular/Improvement/Supplementary]**

**Time : Three Hours**

**Maximum : 100 Marks**

**Part A**

**Answer all questions.**

**Each question carries 3 marks.**

1. What are the Advantages of incremental model?
2. Write short notes on Gantt charts
3. What is the purpose of domain analysis?
4. What are the various types of coupling?
5. What is Regression Testing?

**(5 × 3 = 15 marks)**

**Part B**

**Answer all questions.**

**Each question carries 5 marks.**

6. Explain the different attributes of a Good software.
7. How risks can be assessed and controlled? Explain briefly.
8. What is the difference between user requirements and system requirements?
9. What is the benefit of modular design?
10. What do you mean by boundary value analysis? Give *two* examples of boundary value testing.

**(5 × 5 = 25 marks)**

**Turn over**

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. With the help of a neat labelled diagram, briefly explain Boehm's spiral model. What are its advantages over waterfall model?

*Or*

12. Explain in detail about Capability Maturity Model Integration.

13. Explain briefly about the various types of project team organization.

*Or*

14. Write short notes on Software Configuration Management.

15. What are the functional and non-functional requirements of software?

*Or*

16. Differentiate between Verification and Validation.

17. Explain about the various design concepts considered during design.

*Or*

18. Describe briefly the various steps that must be followed for object oriented design.

19. Explain the basis path testing in detail with an example.

*Or*

20. Discuss the differences between Black box and White box testing.

(5 × 12 = 60 marks)

**G 454**

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Computer Science and Engineering/Information Technology

**SOFTWARE ENGINEERING (R, T)**

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 Admissions]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Explain the Automated Cross Referencing method for SRS validation.
2. Differentiate between Monitoring and Control Phase and Termination Analysis Phase.
3. Explain the characteristics of the “egoless team” and the “democratic team” structuring philosophies.
4. What all important information must a Software Configuration Management Plan generally have ?
5. How does modularity help a software system ? When do we call a software system modular ?
6. What do you mean by Stability Metrics for a design ?
7. Comment on the importance of Internal Documentation.
8. What do you mean by Unit Testing ? Explain how it is carried out during code verification.
9. What are Test Oracles ? Explain their necessity.
10. What are the major issues in testing classes in an Object Oriented Software ?

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each full question carries 12 marks.*

11. (a) What do you mean by Requirement Review ? How is it carried out ? Comment on its effectiveness. (8 marks)
- (b) What are the advantages of Phased Development Process of software ? (4 marks)

*Or*

12. Explain the methods of Structured Analysis of requirements by using DFDs and Data Dictionaries.

**Turn over**

13. What do you mean by Risk Assessment ? How is it carried out ? Give any *six* major risk items that can be anticipated in a software project, and associated techniques to manage them.

Or

14. Explain the purpose of Software Assurance Plan. What are the tasks involved in SQAP ?
15. Explain in detail, any one approach for Design Verification.

Or

16. Explain the general design principles that are applicable to most of the software design approaches.
17. How does Proof of correctness method differ from error detection method for code verification ? Explain.

Or

18. (a) Explain the Law of Demeter for object oriented programs. (6 marks)
- (b) Explain in detail, the Code Inspection and Review process. (6 marks)
19. Illustrate Data Flow Based Testing with an example.

Or

20. (a) Explain the basic levels of Testing. (6 marks)
- (b) What is a Test Plan ? What all information does it contain ? (6 marks)

[5 × 12 = 60 marks]



G 464

(Pages : 2)

Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Computer Science and Engineering

**PROJECT MANAGEMENT AND QUALITY ASSURANCE (R)**

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 4 marks.*

Explain :

1. Issues in planning.
2. Analysis of project effectiveness.
3. Constraints in project control.
4. ISO 14000.
5. Sampling designs.

(5 × 4 = 20 marks)

**Part B**

*Answer all questions.  
Each full question carries 20 marks.*

6. (a) Discuss the various forms of project organization. (20 marks)

*Or*

- (b) Explain the qualities and requirements of a project manager. (20 marks)

7. (a) Discuss the methods of risk analysis of a project. (20 marks)

*Or*

- (b) Explain the various techniques of analysis of markets and its importance in project analysis. (20 marks)

Turn over

8. (a) Discuss abandonment analysis for analysis of a project. (20 marks)

*Or*

(b) Explain the importance of bench marking in quality management. (20 marks)

9. (a) Define quality function. Discuss the various aspects of QFD. Explain its applications. (20 marks)

*Or*

(b) Explain the following :—

(i) Stratified random sample. (10 marks)

(ii) Cluster sample. (10 marks)

[4 × 20 = 80 marks]

**B.TECH. DEGREE EXAMINATION, MAY 2014****Sixth Semester**

Branch : Computer Science and Engineering

ALGORITHM ANALYSIS AND DESIGN (R)

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 Admissions]

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all questions.**Each question carries 4 marks.*

1. Write short note on recursive algorithms with examples.
2. Define theta notation of a function  $f(n)$ .
3. Write short note on the control abstraction of divide and conquer strategy.
4. Discuss how the Strassen's matrix multiplication algorithm outperforms the classical one.
5. Write short note on the Greedy strategy.
6. Find an optimal placement for 13 programs on three tapes T0, T1 and T2 where the programs are of length 12, 5, 8, 32, 7, 5, 18, 26, 4, 3, 11, 10 and 6.
7. Write short note on Multistage graphs.
8. What is a comparison tree ? Draw the comparison tree for sorting four elements.
9. Explain the general principle of backtracking method, taking an example.
10. Differentiate between backtracking and branch-and-bound algorithm.

(10 × 4 = 40 marks)

**Part B***Answer all questions.**Each full question carries 12 marks.*

11. Discuss about the methods used for solving recurrences. (12 marks)
- Or*
12. Explain the various pseudo code conventions used in algorithms. (12 marks)

**Turn over**

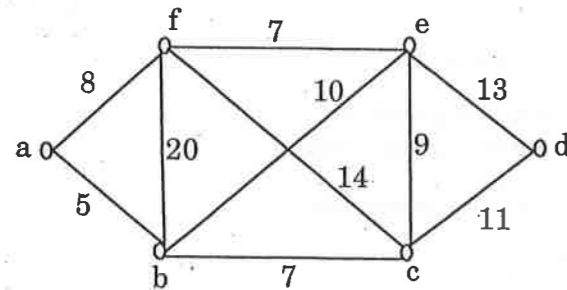
13. Explain Heapsort algorithm and its complexity. (12 marks)

Or

14. Write an algorithm to perform binary search on sorted list of elements. Analyze the algorithm for the best case, average case and worst case. (12 marks)

15. Illustrate the steps for computing a minimum cost spanning tree for the graph given below using

- (a) Prim's algorithm
- (b) Kruskal's algorithm



(12 marks)

Or

16. Discuss about Knapsack problem and its solution. (12 marks)

17. Discuss about All-pairs shortest paths problem. Solve the all-pair shortest path problem for the diagraph with the weight matrix given below.

$$\begin{bmatrix}
 0 & 2 & \infty & 1 & 8 \\
 6 & 0 & 3 & 2 & \infty \\
 \infty & \infty & 0 & 4 & 8 \\
 \infty & \infty & 2 & 0 & 3 \\
 3 & \infty & \infty & \infty & 0
 \end{bmatrix}$$

(12 marks)

Or

18. Explain the backward approach for finding minimum cost path in multistage graphs. Solve the following graph using it. (12 marks)

19. Explain the recursive backtracking algorithm used in sum of subsets problem. Draw the state space diagram for the sum of subsets problem for the instance,  $w = \{5, 7, 8, 10\}$  and  $m = 15$ . (12 marks)

Or

20. Explain how backtracking is used for solving 8-queens problem. Show the state space tree. (12 marks)

[5 × 12= 60 marks]