G 1114

Reg. No.................................

Name..............................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Computer Science and Engineering/Information Technology

NETWORK COMPUTING [R, T]

(Old Scheme—Prior to 2010 Admissions)

[Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Write a HTML code to create a simple menu.

2. Why are style sheets valuable ?

3. Write a note on Java script.

4. Write a Java script statement to declare and create an array with 3 rows and 3 columns.

5. What makes Java different from other programming languages ?

6. Outline the life-cycle of an Applet.

7. What are the security features of Applets ?

8. What is IP Multicasting ?

9. Explain the HTTP methods POST and HEAD.

10. Give the applications of CGl ?

(10 × 4 = 40 marks)

Part B

*Answer **all** questions.*
Each question carries 12 marks.

11. (a) Explain the applications of frames. (4 marks)

    (b) Give an overview of the <FRAMESET> tag. (8 marks)

Or

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(Pages : 2)

B.TECH. DEGREE EXAMINATION, MAY 2018

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 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all *questions.*
Each question carries 3 marks.

1. Write a pseudo code to accept two numbers, find the greatest and print the result.

2. Present an outline of divide and conquer strategy.

3. Outline the general knapsack problem.

4. Write a note on backtracking.

5. What is planar graph coloring ?

(5 × 3 = 15 marks)

Part B

Answer all *questions.*
Each question carries 5 marks.

6. Compute the Big Oh running time of the following C code segment :

```
for i = 2; i < n; i++
{
sum = sum + i;
}.
```

7. Outline the working of binary search algorithm.

8. Write a note on how greedy strategy works.

9. Appraise how branch and bound technique works.

10. Write a note on non-deterministic algorithms.

(5 × 5 = 25 marks)

Part C

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

11. (a) What is a recursive algorithm ? Appraise with an example.   (8 marks)

   (b) Write a note on Big Omega notation.   (4 marks)

Or

Turn over

12. What are recurrence relations ? Appraise with an example the steps in solving recurrences using recursion tree method.

13. Appraise with an example the steps in the Strassen's matrix multiplication algorithm.

Or

14. Appraise with an example the steps to sort an array of 'N' numbers using quick sort.

15. What is a minimum spanning tree ? A cable company wants to connect five villages to their network as illustrated in the diagram below :
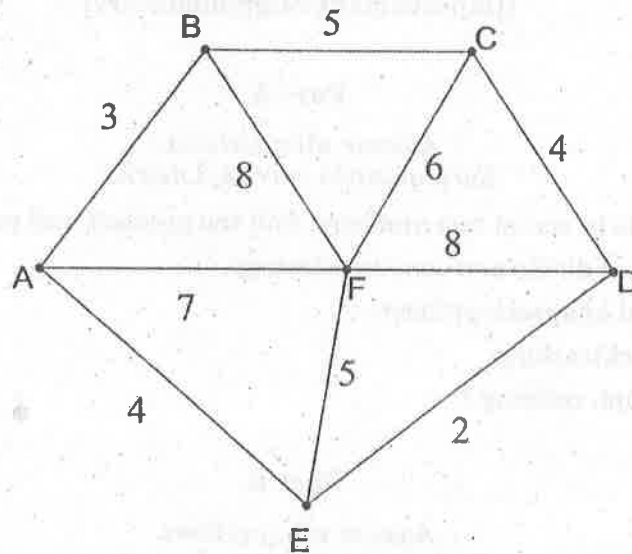
Using Kruskal's algorithm find the minimum length of cable needed ?

Or

16. State the all-pairs shortest path problem. Appraise with an example the steps in solving the all-pairs shortest path problem using dynamic programming.

17. Appraise with an example Monte Carlo algorithm.

Or

18. Appraise with an example how LIFO branch and bound technique works.

19. Appraise with an example string matching using the Rabin-Karp algorithm.

Or

20. (a) Write a note on randomized algorithms.   (4 marks)

    (b) Appraise with an example the Las Vegas algorithm.   (8 marks)

                                                          [5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering

CS 010 602—INTERNET COMPUTING (CS)

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Give the syntax to create an one-dimensional array of objects with necessary examples.

2. What is an interface ? State its advantages.

3. Bring out the differences between byte streams and characer streams.

4. What are datagrams ? State its need.

5. State the need for java server faces.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Demonstrate type conversion and casting in Java with suitable examples.

7. Illustrate constructor overloading with examples.

8. Summarise the standard collection classes and state the need for each.

9. Brief the significance of factory methods and instance methods prevent in InetAddress class.

10. Demonstrate RGB Image Filter and Crop Image filter using an example.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. (a) Explain the important features of Java.   (6 marks)

    (b) Elaborate the data types of Java with examples and justify the statement 'Java is a strongly typed language'.

(6 marks)

Or

Turn over

12. (a) Write a Java program to sort the integer elements present in a single dimensional array.

(6 marks)

(b) Illustrate break and continue statements with examples.   (6 marks)

13. Discuss the concept of package with an example.

Or

14. Write a Java program that synchronizes four different threads of the same program and displays the contents of the text supplied through these threads.

15. How can the different keyboard events be handled ? Explain with an example covering all the events.

Or

16. List the types of controls supported by AWT and explain the controls briefly.

17. Discuss the steps involved in establishing a TCP connection using sockets. Write a program to send a message from the client to the server.

Or

18. Explain about any *five* classes and methods used in IP multicasting.

19. Discuss how HTTP requests and responses are handled using servlets.

Or

20. Explain the actions that can be performed using Image Observer interface.

(5 × 12 = 60 marks)

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Reg. No............................

Name............................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering

CS 010 603—SYSTEM SOFTWARE (CS)

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions .
Each question carries 3 marks.

1. What is application software ? Give example.

2. Highlight the basic functions performed by a macro processor.

3. Outline the relationship between relocation and linking.

4. Why the behavior and presentation of an interactive system is crucial to its acceptance by users.

5. Outline the need for a device driver.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. What is a database management system ? Outline the functions performed by a database management system.

7. Outline with an example a nested macro call.

8. Write a note on linking loaders that support automatic library search.

9. Present an outline of document editing process.

10. Write a note on character devices.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. What is an assembler ? Outline the algorithm for Pass 2 of an assembler.

Or

Turn over

12. What is a loader ? Outline the basic functions performed by a loader and appraise the design of an absolute loader.

13. Explain with an example conditional macro expansion.

Or

14. Present an outline of the following :

   (a)   A method for concatenating macro instruction parameters with other character strings.

   (6 marks)

   (b)   A method for generating unique labels within macro expansions.   (6 marks)

15. Explain the algorithm for Pass 1 of a linking loader.

Or

16. Appraise with an example and relevant diagrams loading and calling of a subroutine using dynamic linking.

17. Explain with a diagram a typical editor structure.

Or

18. What is a debugging system? Appraise the important capabilities of an interactive debugging system.

19. Appraise the types of device drivers and highlight their advantages.

Or

20. Write a detailed note on block devices and device drivers for block devices.

(5 × 12 = 60 marks)

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Reg. No.............................

Name...................................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering

CS 010 604—COMPUTER NETWORKS (CS)

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is a circuit switched network ? Give example.

2. How stop and wait protocol works ?

3. Illustrate diagrammatically an extended LAN with loops.

4. Differentiate between congestion control and congestion avoidance.

5. What is an overlay network ?

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Illustrate diagrammatically and explain how a set of independent networks are interconnected to form an internetwork.

7. Explain Shannon's theorem.

8. Illustrate datagram forwarding with an example and diagrammatic illustration.

9. How TCP manages a byte stream ?

10. What is a domain name system ? Explain with an example.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each full question carries 12 marks:

11. Compare the TCP/IP architecture and the open systems interconnection architecture.

Or

12 (a) Explain with an example the two fundamental ways network performance is measured.

(8 marks)

(b) How long does it take to transmit x KB over a y-Mbps link ? Give your answer as a ratio of x and y.

(4 marks)

13. Suppose we want to transmit the message 1011001001001011 and protect it from errors using the CRC-8 polynomial $x^8 + x^2 + x^1 + 1$.

(a) Use polynomial long division to determine the message that should be transmitted.

(6 marks)

(b) Suppose the leftmost bit of the message is inverted due to noise on the transmission link, what is the result of the receiver's CRC calculation ? How does the receiver know that an error has occurred ?

(6 marks)

Or

14. What is WiMAX ? How WiMAX works ? Discuss with an example.

15. (a) Illustrate with an example and diagrammatic illustration source routing in a switched network.

(8 marks)

(b) What is learning bridge ? Discuss.

(4 marks)

Or

16. Explain with an example the basic mechanism by which IP routers forward datagrams in an internetwork.

17. Explain with diagrammatic illustration TCP state transition diagram.

Or

18. Discuss with an example random early detection congestion-avoidance mechanism.

19. What is electronic mail ? Explain with diagrammatic illustration the working of simple mail transfer protocol.

Or

20. How simple network management protocol can be used for managing devices in an internet using the TCP/IP protocol suite ? Discuss with an example.

(5 × 12 = 60 marks)

G 1910

Reg. No.................................

Name.....................................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering

CS 010 605—SOFTWARE ENGINEERING (cs)

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer **all** questions.*

Each question carries 3 marks

1. What are CASE tools ?

2. Name the three time estimates PERT includes.

3. What is an analysis model ?

4. Define cohesion and coupling.

5. What is a test case ? Give example.

(5 × 3 = 15 marks)

Part B

*Answer **all** questions.*

Each question carries 5 marks.

6. Outline the advantages of using an incremental process model.

7. What is a work breakdown structure ? Give example.

8. Write a note on requirements engineering.

9. Write a note on stepwise refinement.

10. Outline unit testing with an example.

(5 × 5 = 25 marks)

Turn over

Part C

Answer all questions.
Each full question carries 12 marks.

11. (a) Appraise the waterfall software development life cycle model with a diagram.

(7 marks)

(b) What are the waterfall model strengths ? What are the waterfall model deficiencies ? When to use the waterfall model ?

(5 marks)

Or

12. Present an outline of the RAD model and the concurrent development model.

13. What is a cost estimation model ? Appraise the basic COCOMO cost estimation model.

Or

14. What is software configuration management ? Appraise the activities involved in software configuration management.

15. Appraise with a diagram the elements of the analysis model.

Or

16. What is a software requirements specification document ? Prepare a software requirements specification document for a "Banking System".

17. What is object oriented design ? Explain with an example.

Or

18. Compare top-down and bottom-up design. Give example.

19. What is path testing ? Appraise with an example the steps in computing Cyclomatic complexity.

Or

20. (a) Appraise with an example equivalence partitioning and boundary value analysis.

(8 marks)

(b) Write a note on stress testing.

(4 marks)

[5 × 12 = 60 marks]

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Reg. No...........................

Name.............................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering

CS 010 606 L01—DISTRIBUTED SYSTEMS (Elective I) [CS]

(New Scheme—2010 Admission onwards)

[Improvement / Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Outline heterogeneity with an example.

2. State the need for clock synchronization.

3. Write a note on location transparency.

4. Present an outline of fault tolerance.

5. What is a distributed transaction ? Give example.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Write a note on fast local Internet protocol.

7. Appraise with an example group communication.

8. Write a note on file caching and file replication.

9. Outline the desirable features of a process migration mechanism in a distributed computing environment.

10. Present an outline of two phase commit protocol.

(5 × 5 = 25 marks)

Turn over

Part C

*Answer **all** questions.*
Each question carries 12 marks.

11. What is distributed computing ? Appraise the design requirements for distributed architectures.

Or

12. Appraise with a diagram the processor-pool model in distributed computing.

13. Explain with a diagram the working of remote procedure call.

Or

14. What are the implications of distributed shared memory for page replacement policies ? Appraise with an example.

15. What is a distributed file system ? Appraise the key design issues for distributed file systems.

Or

16. Write a detailed note on Google file system.

17. Appraise the issues to be addressed while designing a load-balancing algorithm for a distributed computing environment.

Or

18. (a) Write a note on non-preemptive and preemptive process migration.   (6 marks)

    (b) What is Byzantine failure ? Outline with an example.   (6 marks)

19. What is a distributed database management system ? Outline with a diagram the architecture of a distributed database management system.

Or

20. What is distributed dead lock ? Appraise the four conditions for dead lock and present an example for distributed dead lock.

[5 × 12 = 60 marks]

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Reg. No......................................

Name.....................................

B.TECH. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Branch : Computer Science and Engineering/Information Technology

CS 010 606 L04/IT 010 606 L03—UNIX SHELL PROGRAMMING (Elective I) [CS, IT]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Differentiate absolute pathname and relative pathname.

2. What comprise a UNIX session ?

3. What is done by the following sed command ? sed "/^$/d" file 1 ?

4. What is an alias ? How is an alias created in the C shell ?

5. What is a zombie process ?

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain any ten commands used in the Vi editor.

7. What is the error (if any) in the following commands ?

    (i)   date : more.   (ii)   more : date.

    (iii) cp < file 1.   (iv) ls < file 1.

    (v)   cat file 1 : cmp –.

8. What are the limitations of the 'grep' command ?

9. What will be displayed from the following sequence of commands ? Explain the reason.

    $ x = "Hello"

    $ ksh

    $ x = "Bye"

    $ print $x

    $ exit

    $ print $x.

Turn over

10. Give the command for creating a new process. Describe the sequence of operations that are performed when the command is executed.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. Give the syntax and use of the following commands in UNIX :

    (a) fork.   (b) mkdir.

    (c) du.   (d) who.

    (e) write.   (f) cp.

(6 × 2 = 12 marks)

Or

12. Discuss about the UNIX utilities used for text processing and backup.

13. Differentiate foreground and background jobs. How can you suspend, restart and terminate foreground jobs ? How can you start, suspend, restart and terminate background jobs ?

Or

14. Give the syntax of the 'sort' command. How does the 'sort' command work ? Discuss in detail how sorting by fields can be done.

15. Explain the different types of addresses used in sed with appropriate examples.

Or

16. (a) Write an awk script to print each line 3 times.   (6 marks)

    (b) Use functions to write an awk script that compares two values and returns the larger.

(6 marks)

17. Write a shell script that sends the contents of a message to everybody who has logged in. The message should be read from a file.

Or

18. What are positional parameters ? Explain how the positional parameter can be changed within a script with an example.

19. Explain how X can be started and stopped. Explain any one common X client.

Or

20. Explain the client-server mechanism used for communication in a network.

[5 × 12 = 60 marks]