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T.E. (CSE) (Part - III) (Semester - V) (Revised) Examination,
December - 2015

COMPUTER ALGORITHMS

Sub. Code : 66296

Day and Date : Tuesday, 15 - 12 - 2015

Time : 02.30 p.m. to 05.30 p.m.

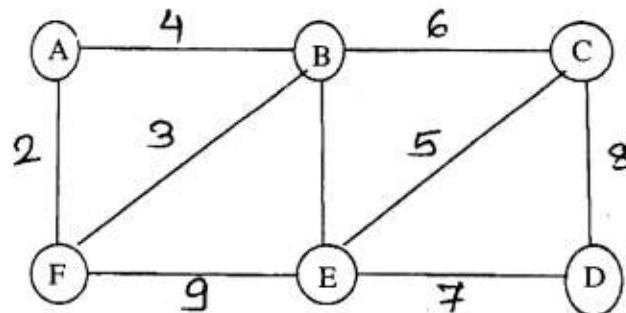
Total Marks : 100

- Instructions :
- 1) Questions 4 and 8 are compulsory.
 - 2) Attempt any four questions from remaining questions.
 - 3) Figure to right indicate full marks.
 - 4) Assume suitable data wherever necessary.

- Q1) a) Define Asymptotic Notations along with one example each. [8]
b) Devise a binary search algorithm that splits the set not into two equal sizes but into sets one of which is twice the size of the other. [8]

- Q2) a) Explain Merge sort Algorithm using divide and conquer technique and show that its complexity is $O(n \log n)$. [8]
b) Explain solution to all pairs shortest path problem using dynamic programming. [8]

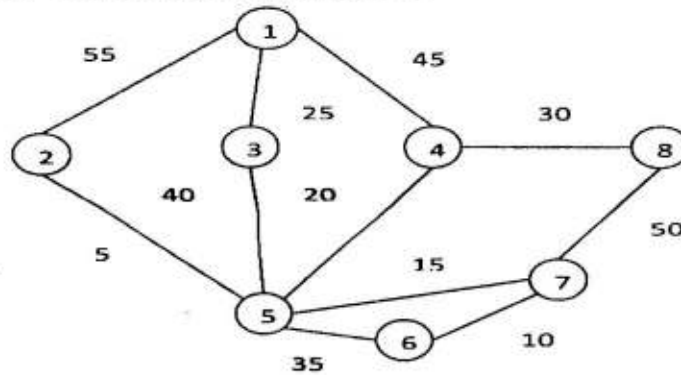
- Q3) a) Apply Kruskal's algorithm to find out minimum cost spanning tree for the following graph [8]



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- b) Using Single source shortest path algorithm, find the shortest paths from vertex 1 to all remaining vertices for the following graph also draw its shortest path spanning tree. [8]



Q4) Write short note on (Solve any three) [18]

- Dynamic programming solution to Multistage graph problem
- Greedy method for Optimal storage on tapes
- Time and space complexity
- Divide and conquer design technique

Q5) a) Define an articulation point how non-connected graph can be converted to bi-connected graph. [8]

- Draw and explain permutation tree for 4 queen problem using back-tracking. [8]

Q6) a) What is Non deterministic algorithm? Explain non deterministic searching and sorting algorithm. [8]

- List and explain NP-Hard graph problem. [8]

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- Q7)** a) Explain PRAM computational model. [8]
b) Explain packet routing in square mesh and linear array. [8]

Q8) Write short note on: [18]

- a) Game Tree
b) Graph Coloring
c) Broadcasting with Mesh and Hypercube.



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T.E. (CSE) (Semester - V) Examination, May -2015

NETWORK TECHNOLOGIES

Sub. Code : 45605

Day and Date : Saturday, 23 - 05 - 2015

Total Marks : 50

Time : 01.30 p.m. to 03.30 p.m.

- Instructions :**
- 1) **Attempt any two questions from each section.**
 - 2) **Figures to the right indicate full marks.**
 - 3) **Assume data wherever necessary.**

SECTION - I

- Q1) a)** Explain different capacity expansion techniques for cellular system. [6]
b) Explain basic spectrum spreading operation with necessary diagram.[6]

- Q2) a)** Explain GSM network architecture with necessary diagram. [7]
b) Describe the basic operation of GSM GPRS. [6]

- Q3) a)** For a mobile system cluster size of 7, determine the frequency reuse distance if the cell radius is 12 kilometers. [4]
b) Why is power management so important for cellular wireless systems?[3]
c) What is handoff? Explain Soft, Softer and Soft softer handoff. [5]

SECTION - II

- Q4) a)** Explain IEEE 802.11 design issues. [7]
b) Discuss the relative difference in altitude between LEO, MEO and GEO satellite systems. [6]

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- Q5)** a) Explain in detail SCO and ACL links. [6]
b) Explain the difference between a satellite access network and a satellite access/core network. [6]

Q6) Write short note on: [3 × 4 = 12]

- a) WEP decryption.
b) Characteristics of 4G wireless network.
c) Cognitive radio technology.



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**T. E. (Computer Sci. and Engg.) (Semester - V) (Revised) Examination,
December - 2015
NETWORK TECHNOLOGIES (THEORY) (New)
Sub. Code : 66297**

Day and Date : Thursday, 17 - 12 - 2015

Total Marks : 50

Time : 01.00 p.m. to 03.00 p.m.

Instructions : 1) Solve any two questions from Q1, Q2, Q3 and any two questions from Q4, Q5, 06.

2) Figures to right indicate full marks.

3) Assume data wherever necessary.

- Q1)** a) Draw and explain AMPS hand off operation using various control messages. [8]
b) Explain fundamental differences between wired and wireless LAN. [5]
- Q2)** a) Describe the Bluetooth SCO and ACL links. [6]
b) What is MSRN? How call setup takes place using MSRN? [6]
- Q3)** a) With the help of neat diagram explain WEP encryption. [7]
b) Describe the basic difference between WLAN & WPAN. [5]
- Q4)** a) Describe Physical layer issues in sensor networks. [8]
b) Differentiate table driven and on demand routing protocols. [5]
- Q5)** a) Describe different types of attacks on wireless networks. [6]
b) Draw and explain typical sensor network architecture. [6]
- Q6)** Write short note on : [12]
a) Virtual Private Network
b) Security with access control list
c) Distributed Coordination Function (DCF)



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T.E. (Computer Science & Engineering) (Part - III)
(Semester - V) (Revised) Examination, December - 2015

COMPUTER GRAPHICS

Sub. Code : 66293

Day and Date : Tuesday, 08 - 12 - 2015

Total Marks : 50

Time : 02.30 p.m. to 05.30 p.m.

- Instructions :**
- 1) Q. No. 3 and Q. No. 6 are compulsory. Attempt any one from Q. NO. 1 and Q. NO. 2 and any one from Q. NO. 4 and 5.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data if necessary.

- Q1)**
- a) Consider the triangle with vertices (10, 10), (40, 10), (30, 30). Apply the scaling transformation with scale factor 5 in X&Y direction. Draw the triangle before and after the transformation. [6]
 - b) What are plane geometric projections? Explain axonometric projections. [6]
- Q2)**
- a) Explain Cohen - Sutherland line clipping algorithm. [6]
 - b) Evaluate the Bresenham's line drawing algorithm for line (0, 0) to (5, 5). [6]
- Q3)**
- a) Explain Bresenham's circle generation algorithm with suitable example. [7]
 - b) Explain end point code algorithm for line clipping. [6]
- Q4)**
- a) Explain the following tests to find the relation between polygon and the window in Warnock algorithm. [6]
 - i) Substitution test
 - ii) Infinite line test
 - b) Explain the convex hull property of B-spline curve. [6]

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- Q5) a) State and explain basic ray tracing algorithm. [6]
b) What is procedural animation? Differentiate between key-frame based animation and procedural animation. [6]
- Q6) a) Explain Gouraud Shading method for rendering a polygon surface. [7]
b) Explain the methods for controlling motion in computer animation. [6]



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T.E. (Computer Science and Engg.) (Part-III) (Semester-V)
(Revised) Examination, December - 2015
SYSTEM PROGRAMMING
Sub. Code : 66294

Day and Date : Thursday, 10 - 12 - 2015

Total Marks : 100

Time : 02.30 p.m. to 05.30 p.m.

- Instructions :
- 1) Question No. 4 and 8 are compulsory.
 - 2) Answer any two questions from Questions No. 1,2 and 3.
 - 3) Answer any two questions from Questions No. 5,6 and 7.
 - 4) Figures to right indicate full marks.

- Q1)** a) Define binding. What different binding times are there? Explain importance of binding times. [8]
b) Explain pass I of two pass assembler. [8]
- Q2)** a) State and explain various advanced macro facilities with an example each. [8]
b) Discuss the fundamentals of language processing. [8]
- Q3)** a) Discuss in detail processing of declarations and assembler directives. [8]
b) Explain different data structures of the macro preprocessor with its contents in detail. [8]
- Q4)** Write short note on: [18]
a) Language processors.
b) Intermediate Code Forms.
c) Macro Definition and Call.

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- Q5)** a) Give the structure of UI with neat diagram. [8]
b) Discuss in detail; aspects of compilation. [3]
- Q6)** a) Explain compilation of control structures. [8]
b) Write in detail for Intermediate code for Expression. [8]
- Q7)** a) Explain Design of an Editor with suitable diagram. [8]
b) Write and Explain Linking Algorithm. [8]
- Q8)** Write a short note on: (Solve any three). [18]
a) Program Development.
b) Debug monitor.
c) Parameter passing mechanism.
d) Memory Allocation in compilers.



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T.E. (Computer Science & Engineering) (Semester - V) (Old)
Examination, December - 2015
SYSTEM PROGRAMMING
Sub. Code : 45602

Day and Date : Thursday, 10 - 12 - 2015

Total Marks : 100

Time : 02.30 p.m. to 05.30 p.m.

- Instructions : 1) Q.No. 4 and Q.No. 8 are compulsory.
2) Attempt any two from Q.No. 1, 2 & 3 & any two from Q.No. 5, 6 & 7.
3) Figures to the right indicate full marks.

SECTION - I

- Q1)** a) Explain different language processing activities. [8]
b) State and describe advanced macro facilities with example. [8]
- Q2)** a) Explain algorithm for Pass-I of Two Pass Assembler. [8]
b) Explain design of macro preprocessor. [8]
- Q3)** a) Describe front end and back end of Toy compiler. [8]
b) How processing of declaration statements and assembler directives done. [8]
- Q4)** Write a short note (Any Three) : [18]
a) LPDT
b) Nested Macro Calls
c) Comparison of variant I and variant II
d) Types of Grammar

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SECTION - II

- Q5 a) Explain relocation and linking concepts with example. [8]
b) Explain Toy code generator for expression. [8]
- Q6 a) Explain text editors in detail. [8]
b) Explain compilation of control structure. [8]
- Q7 a) Explain Object module format for linker. [8]
b) Describe memory allocation in block structured language. [8]
- Q8) Write a short note (Any Three) : [18]
a) User interface
b) API and ABI
c) Linking for overlays
d) Triples and quadruples

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T.E. (Computer Science & Engineering) (Part - III) (Semester - VI)
(Revised) Examination, December - 2015
OBJECT ORIENTED MODELING AND DESIGN (New Course)
Sub. Code : 45611

Day and Date : Friday, 04 - 12 - 2015

Total Marks : 50

Time : 01.30 p.m. to 03.30 p.m.

- Instructions : 1) Attempt any two question from each section.
2) Figures to right indicate full marks.
3) Assume suitable data whenever necessary.

SECTION - I

- Q1) a) Explain the Links and Association. [6]**
b) Explain the following term w.r.t. aggregation. [6]
i) Propagation of operation
ii) Recursive aggregates
- Q2) a) Draw and explain the State diagram for the play of bridge rubber game. [6]**
b) Draw and explain data flow diagram for ATM perform transaction process. [7]
- Q3) a) Write a note on impact of an object oriented Approach. [6]**
b) Write a note on Structured Analysis (SA/SD) Methodology. [6]

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SECTION - II

- Q4)** a) Explain the Class diagram, its properties and contents. [6]
b) Explain the 'Relationship' in UML. [6]
- Q5)** a) What are use cases. Draw Use Case diagram for telephone network. [7]
b) Write a note on w.r.t. UML [6]
i) State Machine
ii) Events and Signals
- Q6)** a) Explain the behavioral and Structural aspects of Collaboration diagram. [6]
b) Write a note on Nodes and Components. [6]



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**T.E. (Computer Science & Engineering) (Semester - V)
(Revised) Examination, December - 2015**

OBJECT ORIENTED MODELING AND DESIGN

Sub. Code : 66295

Day and Date : Saturday, 12 - 12 - 2015

Total Marks : 50

Time : 1.00 p.m. to 3.00 p.m.

- Instructions : 1) Attempt any two questions from question no. 1, 2 and 3.
2) Attempt any two questions from question no. 4, 5 and 6.
3) Figures to the right indicate full marks.

- Q1) a) Explain object oriented themes. [6]
b) Explain multiple inheritance in detail. [6]
- Q2) a) Explain advanced dynamic modeling concepts. [6]
b) What is data flow diagram? Draw and explain data flow diagram for ATM. [7]
- Q3) a) List and explain steps involved in design optimization. [6]
b) Write note on - System Design. [6]
- Q4) a) Explain five (4+1) views of system in UML. [6]
b) Explain relationships in UML. [6]
- Q5) a) What is use-case? Draw use case diagram for cellular telephone. [6]
b) What is transition? Explain different components of transition with typical transition diagram. [7]

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- Q6)** a) Explain deployment diagram with example. [6]
- b) Explain the following terms with respect to architectural modeling.[6]
- i) Patterns
 - ii) Mechanism
 - iii) Framework

