UNIT III

15. (a) Differentiate low level and high level AM transmitters. (5)

(b) Explain in detail about FM receiver characteristics. (6)

Or

16. Draw the block diagram of super heterodyne AM receiver and explain its principle of operation. (11)

UNIT IV

17. Explain the operation of delta modulation system with neat diagrams. (11)

Or

18. Explain differential pulse code modulation in detail with transmitter and receiver block diagrams. (11)

UNIT V

19. Consider the binary data input given to Quaternary PSK (QPSK) modulator be 00. What will be the QPSK modulator and demodulator output? Explain the transmitter and receiver operations in detail with neat diagrams. (11)

Or

20. Explain in detail the operation of Binary Phase Shift Keying (BPSK) transmitter and receiver with necessary diagrams. (11)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Fourth Semester

Information Technology

COMMUNICATION ENGINEERING – I

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. State the significance of modulation in communication system.
2. How modulation helps to reduce antenna size in wireless communication?
3. State the advantages of SSB over DSBFC.
4. Calculate the percentage power saving when a carrier and one of the sidebands are suppressed on AM wave modulated to depth of 50%.
5. Is it essential to use an equalizer in a digital communication receiver? Justify your answer.
6. Given the data stream 1110010100, sketch the transmitted sequence of pulses for the line codes: Alternate mark Inversion signaling and Bipolar NRZ.

7. Sketch the digitally modulated waveforms for the binary data 110101 using ASK, FSK (with continuous phase) and PSK techniques.

8. What is slope overload distortion and granular noise in delta modulation and how it is removed in ADM?

9. Compare the advantages and limitations of M-ary encoding with binary encoding.

10. Show the differentially encoded sequence and the transmitted phase for the binary sequence 10010011 that uses DPSK scheme. Assume reference bit to be '1'.

PART B — (5 × 11 = 55 marks)

Answer FIVE questions choosing ONE from each Unit.

All questions carry equal marks.

UNIT I

11. Explain the operation of Costas receiver for DSBSC demodulation with the help of neat circuit diagram. (11)

Or

12. An amplitude modulated signal is represented by the voltage equation $V(t) = 0.1 (1 + 0.5 \cos 6280t) \sin (1590 \times 10^3 t)$ volts.

Find

(a) Carrier amplitude, frequency

(b) Modulating amplitude, frequency

(c) Modulation index, bandwidth required

(d) Side band amplitudes, frequencies

(e) Total current in the antenna with 20 Ω resistor.

Draw the frequency domain representation of the AM wave. (11)

UNIT II

13. Draw the block diagram of Armstrong method and explain its operation for FM generation. (11)

Or

14. Consider a sinusoidal modulating signal and derive the expression for frequency modulated signal. (11)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Eighth Semester

Information Technology

MULTIMEDIA SYSTEMS

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Draw the diagram for multimedia architecture.
2. List the components of multimedia.
3. List out the types of chunks used in RIFF.
4. Define Run-length encoding.
5. What is authoring programs?
6. What is the significance of using dissolve?
7. Define ATM networks.
8. What is error resilient entropy encoding?
9. List few applications of Multimedia.
10. What is Multimedia interchange?

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. Explain in detail the multimedia input and output Technologies.

Or

12. Explain the role of multimedia in various fields.

UNIT II

13. Explain the different file formats used in multimedia with example.

Or

14. Enumerate the MPEG coding methodology with suitable diagrams.

UNIT III

15. Explain in detail the editing and authoring tools used in multimedia.

Or

16. (a) Discuss VRML shapes in detail. (4)

(b) Give the guidelines for content design in multimedia. (7)

UNIT IV

17. (a) When should RTP be used and when should RTSP is used? Is there an advantage in combining both protocols? (4)

(b) Write short notes on Multimedia over ATM networks in detail. (7)

Or

18. Explain Media On Demand over network communication.

UNIT V

19. Explain content based image retrieval for digital Libraries in detail.

Or

20. Describe about Knowledge based Multimedia system.

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B.Tech. DEGREE EXAMINATION,
APRIL/MAY 2016.

Seventh Semester

Information Technology

COMPONENT TECHNOLOGY

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. List the various types of Middleware.

2. What is meant by RPC?

3. Compare and contrast procedural interfaces and object interfaces.

4. What is meant by Subject oriented programming?

5. What is the significance of CLR?

6. What do you meant by IDispatch?

7. List the different component models in EJB.

8. What is the difference between java beans and enterprise java beans?

9. What air the roles of a skeleton and a stub in CORBA?

10. Define IIOP.

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each unit.

All questions carry equal marks

UNIT I

11. Explain in detail the Client/Server architectures with its merits and demerits.

Or

12. Illustrate in detail about Distributed objects and components.

UNIT II

13. Write a short note on :

(a) Components and Interfaces. (6)

(b) Aspect oriented programming. (5)

Or

14. Describe in detail about Component development and Assembly.

UNIT III

15. Explain in detail about COM Object Creation and COM Object reuse.

Or

16. Explain about ASP.NET architecture with a neat diagram.

UNIT IV

17. Draw the EJB architecture and explain the functions of various entities involved.

Or

18. Discuss the steps involved in building and developing EJB application with bank transactions.

UNIT V

19. Discuss about CORBA facilities and services in detail.

Or

20. Explain detail about CCM container model.

UNIT V

19. Explain the HDL for combinational circuits. (11)

Or

20. Explain HDL description for binary multiplier. (11)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Third Semester

Information Technology

DIGITAL SYSTEM DESIGN

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Find octal and hexadecimal for the binary number 101101.110.

2. What is BCD? Mention its use.

3. Specify the function of a demultiplexer.

4. Draw the logic diagram of 3-bit even parity generator.

5. Mention the difference between combinational circuit and sequential circuit.

6. What is Mealy model?

7. Mention the concept of Hamming code.

8. How many 128 × 8 RAM chips are needed to provide a memory capacity of 2048 bytes?

9. Mention the use of Verilog.

10. Mention the difference between register and counter.

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. (a) Explain any four basic theorems of Boolean algebra. (7)

(b) Explain any two methods of representing a negative number. (4)

Or

12. (a) Simplify the Boolean function.
$F(w, x, y, z) = \Sigma(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$
Using Karnaugh map. (7)

(b) Simplify the Boolean expression $x + x'y$. (4)

UNIT II

13. (a) Draw and explain the full adder circuit. (7)

(b) What is code converter? Explain. (4)

Or

14. (a) Explain 3-to-8-line decoder with its circuit. (7)

(b) What is multiplexer? Mention its use. (4)

UNIT III

15. (a) Explain any three flip-flops with its characteristic equation. (7)

(b) What is shift register? Explain. (4)

Or

16. Design a 4-bit up-down counter and explain its operation. (11)

UNIT IV

17. (a) Explain the types of memories and their characteristics. (7)

(b) What is race condition? Explain. (4)

Or

18. (a) Explain the characteristics of PLA with a block diagram. (7)

(b) Explain the hazards in combinational circuits. (4)

17. Explain the N-Queen problem. Solve a 8 Queen problem using backtracking.

Or

18. Differentiate between depth first search and breadth first search with an example.

19. Explain the Assignment problem solving using branch and bound algorithm. Draw the state space tree and interpret the same.

Or

20. Explain the optimization problem with an application of knapsack problem.

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Fourth Semester

DESIGN AND ANALYSIS OF ALGORITHMS

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks).

Answer ALL questions.

1. Define proof by contradiction.

2. What is the concept that is well illustrated to solve the tower of hanoii problem? Where are it is applied?

3. Distinguish Strassen's matrix multiplication algorithm and brute force algorithms by multiplying a 2×2 matrix?

4. Compare and contrast the krushal's algorithm and Dijkstra's algorithm.

5. State the principle of optimality.

6. Does Floyd's algorithm work on a graph that has some edge whose lengths are negative, but that does not include negative cycle? Justify.

7. Define subset sum problem. Does the following set forms the subset sum?

$S = \{1, 7, 28, 3, 2, 5, 9, 32, 41, 11, 8\}$, $B = 30$.

8. Define articulation point.

9. What is a least cost search?

10. Write the objective function and constraints for the 0/1 knapsack problem using branch and bound technique.

PART B — (5 × 11 = 55 marks)

Answer ALL questions.

11. (a) Explain the principles of algorithms and prove $m = 2n$ by mathematical induction. (6)

(b) Illustrate the homogeneous recurrence with an example. (5)

Or

12. State the measures used in the analysis of control structure. Explain the analysis of 'For loops and recursive calls of control structures.

13. (a) State the general characteristics of a greedy algorithm. Is selection sort a greedy algorithm? If so, what are the various functions involved? (5)

(b) Illustrate the knapsack problem with an example. (6)

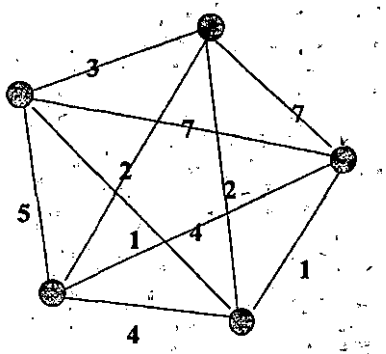
Or

14. How does divide and conquer principle work? Write pseudocode for a divide-and-conquer algorithm for finding values of both the largest and smallest elements in an array of n numbers.

15. Explain the principle in minimum spanning tree. How does warshall's algorithm useful?

Or

16. State the principle of dynamic programming. Use any of the dynamic programming to determine the shortest paths for the following traveling salesperson problem visiting the node for once only.



UNIT V

19. Explain the internal memory organisation of 8051 micro controller with relevant diagrams. (11)

Or

20. Write an 8051 assembly language program using interrupts to simultaneously create 7MHz and 500Hz square waves on P1.7 and P1.6, assume the appropriate parameters. (11)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Fourth Semester

Information Technology

MICROPROCESSORS AND MICROCONTROLLERS

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write a short note on status register of 8085 microprocessor.
2. Give the significance of SIM and RIM instructions available in 8085.
3. Differentiate between maskable and non-maskable interrupts.
4. Write a short note on control word register of 8255.
5. Draw the internal architecture of IC 8279.
6. What is memory mapped I/O?
7. Discuss the function of Instruction queue in 8086.
8. How single stepping can be done in 8086.
9. Name the special functions registers available in 8051.
10. Compare Microprocessor and Microcontroller.

PART B — (5 × 11 = 55 marks)

Answer FIVE questions choosing ONE from each Unit.

ALL questions carry equal marks.

UNIT I

11. With suitable examples, discuss the different addressing modes available in the 8085 microprocessor. (11)

Or

12. Compare the microprocessors in terms of Transistors used, Clock speed, Data width, MIPS, Power consumption,Versatility, Reliabbility, Cost and Size. (11)

UNIT II

13. Draw the block diagram of DMA controller and explain its operation. (11)

Or

14. Explain the Programmable Interval Timer with neat block diagram. (11)

UNIT III

15. Draw the interfacing diagram for 8086 based system — minimum mode with the following specifications: 16KB RAM and 8 KB EPROM. Show the required latches, buffers and decoders. Draw the memory map for the above interface. (11)

Or

16. Draw the block diagram of 8255 and explain its working. Determine the control word for the following configuration of 8255. (11)

Port A –output

Mode of Port A –Mode 1

Port B output

Mode of Port B – Mode 0

Port C –lower pins-output

UNIT IV

17. Explain the basic features of 8086 microprocessor with neat block diagram. (11)

Or

18. Write an assembly language program to move a string of data words from offset 2000H to offset 3000H.The length of the string is 0FH. (11)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Eighth Semester

Information Technology

SERVICE ORIENTED ARCHITECTURE

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Define Service Oriented Architecture (SOA).
2. List any four characteristics of SOA.
3. List out the elements in the Web service Platform.
4. Define choreography.
5. What is marshalling?
6. What is Message Processing Logic?
7. What is Service Agent?

8. What is meant by loose coupling?

9. What is a service contract?

10. Explain the two types of autonomy.

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. Compare and discuss Service Oriented Architecture and Client-Server architecture.

Or

12. Briefly explain the anatomy of Service Oriented Architecture (SOA).

UNIT II

13. Discuss various steps in processing SOAP messages.

Or

14. Discuss in detail the advantages and disadvantages of SOA.

UNIT III

15. Explain Message Exchange Patterns in detail.

Or

16. Explain briefly about Service Oriented Analysis.

UNIT IV

17. Explain in detail about Entity-centric business service design.

Or

18. Discuss briefly about JAXR architecture.

UNIT V

19. Explain the architecture of Web Service Enhancements (WSE).

Or

20. Discuss about J2EE service provider and service requester.

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UNIT V

19. (a) Compare feed forward system versus feedback system. (4)

(b) What are the types of critical point standards? Discuss. (7)

Or

20. (a) Briefly describe the E-commerce and M-commerce. (5)

(b) Write down the opportunities and challenges created by Information technology. (6)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Eighth Semester

Information Technology

MANAGEMENT CONCEPTS AND STRATEGIES

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Mention the functions of manager.

2. Define management.

3. What is meant by formal organization?

4. What is line authority?

5. Define staffing.

6. Specify any three views on appraisal issues.

7. State the human factors in managing.

8. What is leadership?

9. Write the three steps in the basic control process.

10. Give any four examples of feedback systems.

PART B — (5 × 11 = 55 marks)

Answer FIVE questions by choosing ONE full question from each Unit.

All questions carry equal marks.

UNIT I

11. Discuss in detail the ethics in managing. (11)

Or

12. With neat diagram, explain the strategic planning process. (11)

UNIT II

13. How to do departmentation by enterprise function, territory, customer group, and product? (11)

Or

14. (a) Define organization culture. (3)

(b) Illustrate the organization culture with two environments. (4)

(c) Discuss the influence of the leader on organization culture. (4)

UNIT III

15. Explain the systems approach to human resource management with neat diagram. (11)

Or

16. Discuss the approaches to manager development based on internal and external training, and on-the-job training. (11)

UNIT IV

17. Explain the following theories of motivation :

(a) Herzberg's two factor theory (3)

(b) Maslow's hierarchy of needs theory (4)

(c) Equality theory. (4)

Or

18. (a) What is the purpose of communication? Explain. (4)

(b) Write down the barriers and break downs in communication. (7)

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Eighth Semester

Information Technology

DISTRIBUTED COMPUTING

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the purpose of URL?

2. When the system is said to be synchronous distribute system?

3. Mention the fundamental concepts that are heart of the distributed object model.

4. What are the advantages of user-level threads?

5. Give the two unusual design characteristics of the Andrew file system.

6. What is directory service?

7. What is the use of wait-for graph?

8. State the purpose of replication.

9. List out the parameters that are interested when it comes to processing and transporting multimedia streams.

10. What is the role of object adapter?

SECTION B — (5 × 11 = 55 marks)

Answer ALL questions.

11. Describe the different types of architectural model of distributed system.

Or

12. What are the networking issues of distributed systems? Explain them.

13. How can you create a new process? Also explain how can you implement the thread.

Or

14. Explain the role of RMI and RPC.

15. Describe the requirements of distributed file system.

Or

16. What are the two modes of synchronization? Explain them.

17. What are the drawbacks of locking? Also explain the optimistic concurrency control.

Or

18. Discuss the design and implementation issues of distributed shared memory.

19. Describe the responsibilities and tasks of QoS-manager.

Or

20. Describe the services of CORBA.

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Fifth Semester

Information Technology

JAVA AND INTERNET PROGRAMMING

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Write down the syntax for defining Interface.
2. What is a stream class? How are the stream classes classified?
3. How do applets differ from applications?
4. Define applet class.
5. What is the use of HREF and ALT tags?
6. What is the use of window object in JavaScript?
7. List the benefits of CSS.
8. State the advantage of XML over HTML.

9. Define Web server.

10. What is meant by cookies?

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. (a) Write a java program to find the sum of given numbers. (5)

(b) Explain the method of accessing a package. (6)

Or

12. Explain the concept of multithreading with example.

UNIT II

13. Write the procedure for creating applet with example.

Or

14. Write an applet program to perform addition of two numbers. Use AWT for input.

UNIT III

15. (a) Explain how tables can be inserted into a HTML document with an example. (6)

(b) Discuss in detail about HTML Frames. (5)

Or

16. Write a JavaScript that reads 'n' integers and displays the largest and smallest integer from given numbers.

UNIT IV

17. Discuss in detail about various mouse handling events with example.

Or

18. (a) Explain the purpose of chroma filter with DHTML code. (6)

(b) Create a script that repeatedly flashes an image on the screen. (5)

UNIT V

19. Explain HTTP GET and POST request methods with example.

Or

20. Write short notes on JDBC.

UNIT V

19. Draw the ERP architectural layers and explain the different configuration in which the client and the server can be established in R\3 application.

Or

20. Describe the two primary methods for integrating information across multiple databases. Describe the roles and purposes of data warehouses and data marts in an organization.

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Eighth Semester

Information Technology

ENTERPRISE RESOURCE PLANNING

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Why is ERP important to a company?

2. Define MIS.

3. List out the hidden cost of ERP implementation.

4. Who are business consultant and specify their role?

5. What are the different layers of SAM R/13?

6. Give the ERP modules of Baan ERP.

7. State how Client\Server technology is used in commercial ERP packages.

8. What is meant by Open Technology?

9. Identify the common functions performed by DBMS in an ERP.

10. Brief about the role of System control Interfaces in an ERP package.

PART B — (5 × 11 = 55 marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. (a) What are the benefits of ERP? (5)

(b) Explain about the principles and significance of business engineering. (6)

Or

12. What is BPR? How does it differ from other management practices? Can BPR help in improvement of organization process? How it is connected to ERP?

UNIT II

13. What are the different phases of ERP implementation life cycle? Explain each in detail.

Or

14. Explain about business modules and write short notes on each module.

UNIT III

15. Discuss the various features and modules of MFG/PRO in detail.

Or

16. Discuss about SAP and applications of SAP R/3.

UNIT IV

17. Which one of the following architectures suits much to the ERP software solution : Client -server architecture and Mainframe system. Discuss briefly.

Or

18. Explain how the integration of business and technology is shaping 21st century organizations. State the importance of Application Integration and its advantages in business.

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B.Tech. DEGREE EXAMINATION, APRIL/MAY 2016.

Third Semester

Information Technology

DATA STRUCTURES

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Write statements to declare integer pointer and float pointer. Also write the statement to convert float pointer into integer pointer.

2. What is a stack? Mention the order followed to add or delete an element.

3. What is meant by underflow?

4. Distinguish ascending priority queue from descending priority queue.

5. Define the term, "completely binary tree".

6. What is an AVL tree? Write its running time.

7. Write the difference between internal sorting and external sorting.

8. Define "max heap". Also write the time complexity of heapsort.

9. What is meant by Hash collision? Name the methods that are used to deal the crisis.

10. Write down the condition of a spanning forest for a given graph.

PART B — ($5 \times 11 = 55$ marks)

Answer ALL questions, ONE from each Unit.

All questions carry equal marks.

UNIT I

11. Give a detailed description on postfix operation illustrate with an expression. Also write the program to evaluate it.

Or

12. Summarize the concept of recursion with tower of Hanoi problem. Also write down the program for the problem.

UNIT II

13. Give a detailed note on linked list. Also narrate the procedure of inserting and deleting nodes from a list with suitable illustration.

Or

14. With C programs, explain the various manipulations that can be applied to a queue.

UNIT III

15. Compare and contrast B-tree with B^+ tree through suitable examples.

Or

16. List down the various tree traversal notations and explain with examples and program segments.

UNIT IV

17. With program coding, explain the procedure of doing bubble sort for a given set of n numbers.

Or

18. Explain the concept of radix sort with suitable illustration and program.

UNIT V

19. Describe the concept of hash function. Also explain any two hash methods in detail.

Or

20. Give a detailed note on depth-first search traversal with suitable example and program.

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