

G 1848

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch : Electronics and Communication Engineering

**ADVANCED COMMUNICATION SYSTEMS (L)**

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all the questions.*

**Part A**

*Each question carries 4 marks.*

1. Name and explain the orbital parameters required to determine a satellite's orbit.
2. What is meant by Station Keeping of Satellite ? Explain its significance.
3. What is "energy dispersal" ? Discuss its application for satellite communication.
4. What is CDMA ? Discuss in what way is it superior to TDMA.
5. Explain about channel assignment ?
6. Explain the fundamental principle of Blue-tooth technology.
7. Explain the concept of paging system.
8. Discuss the features of GSM.
9. What is meant by Spread Spectrum ? How can it be used for communication purpose ?
10. What is PN sequence ? Discuss its characteristics.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. (a) What is meant by look angles ? Explain them with reference to a geostationary satellite and the earth station. (6 marks)
- (b) Discuss the factors that affect the uplink design and the downlink design in satellite communications. (6 marks)

Or

Turn over

12. (a) What is the telemetry, tracking and command sub-system ? Explain its functioning. (6 marks)  
 (b) Explain with suitable diagram the working of various antenna systems to be used in earth stations. (6 marks)

13. (a) What is Satellite Switching ? Explain the difference between static and dynamic switching. (5 marks)  
 (b) Explain the operation of a SS-TDMA system. How is it different from a beam hopping TDMA ? (7 marks)

Or

14. (a) Draw the block diagram of direct broadcasting and community broadcasting systems and explain. (8 marks)  
 (b) Explain the difference between Pre-assignment and Demand assignment multiple access systems. (4 marks)

15. Explain in detail various handoff strategies used for cellular communication system. (12 marks)

Or

16. Explain the various techniques used in practice to expand the capacity of cellular system. (12 marks)

17. Draw the block diagram of GSM system architecture and explain in detail. (12 marks)

Or

18. (a) Compare second generation cellular networks with third generation cellular networks. (6 marks)  
 (b) Explain about GSM traffic channels. (6 marks)

19. Explain the direct sequence and frequency hopping techniques of spread spectrum communication system. (12 marks)

Or

20. Derive an expression for jamming margin and processing gain. (12 marks)  
 [5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch : Electronics and Communication Engineering/Applied Electronics and E & I Engineering

**ADVANCED MICROPROCESSOR (LAS)**

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

*Each question carries 4 marks.*

1. List the tasks performed by the BIU (Bus Interface Units) and EU (Execution Units) of 8086 microprocessor.
2. Distinguish between Logical and Physical address.
3. List the addressing modes used in the instruction set of 8086.
4. Explain the use of 'D' (direction) flag by the string addressing mode instructions.
5. Differentiate between real and protected mode of operation.
6. Discuss about the hardware features of 80286.
7. Explain the virtual 8086 mode of operation of 80386.
8. What is an interrupt vector table ? Where it is located ? What does it contain ?
9. What are superscalar machines ? Why pentium is called as a superscalar machine ?
10. Compare RISC architecture with CISC architecture.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. Explain in detail the segmented memory operation of 8086. Also explain how 8086 generates the 20 bit physical address.

Or

12. With the help of diagram explain how 8086 processor can be interrupted using INTR pin. Also explain how 8086 respond to interrupt request on this pin.

**Turn over**

13. Discuss about the following addressing modes of 8086 processor with suitable example :—

- (i) Register addressing. (ii) Immediate addressing.  
(iii) Direct addressing. (iv) Base plus index addressing.

Or

14. Explain in detail about program memory addressing modes, with examples.

15. Describe the paging mechanism of 80486 processor.

Or

16. Discuss about the following :—

- (i) Segment privilege level and protection.  
(ii) Interrupts and exception handling.  
(iii) Task switching.

17. Draw the internal architecture of 80286 in simplified block diagram form and explain.

Or

18. List the various registers of 80286 and explain the use of each one.

19. Why Pentium architecture is called as superscalar architecture ? Discuss about branch prediction logic.

Or

20. Name the different ways of organizing a cache memory and discuss about Pentium's instruction and data cache organization.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch : Electronics and Communication Engineering

**TELEVISION ENGINEERING (L)**

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all the questions.

**Part A**

Each question carries 4 marks.

1. What is meant by Flickering and Interlaced Scanning ? Explain.
2. Explain the advantages and applications of VSB transmission.
3. Compare Positive Modulation and Negative Modulation.
4. Give an account on (i) Delta Gun, (ii) PII.
5. What is BALUN ? Explain the types of baluns with neat sketches.
6. Compare SMPS with linear mode power supplier.
7. Explain the colour response of human eye with a neat diagram.
8. Explain the principle of additive mixing of colours.
9. What is LNB ? Explain it in detail.
10. Explain the principle of digital recording in detail.

(10 × 4 = 40 marks)

**Part B**

Each question carries 12 marks.

11. Draw the basic block schematic diagrams of TV transmitter and receiver. Explain them in detail.

Or

Turn over

12. Define and explain :

- (i) Color resolution and Bandwidth. (4 marks)
- (ii) Composite Video signal. (4 marks)
- (iii) Synchronization. (4 marks)

13. Explain the working principles of Vidicon and Plumbicon with neat schematic diagrams.

Or

14. Compare and contrast high level and low level modulation. Explain the comparison.

15. Explain the radiation principle of YAGI Antenna with a neat sketch. Explain its design details.

Or

16. Draw a neat block diagram of SMPS and explain its functioning in detail.

17. Explain in detail the PAL system with a neat diagram.

Or

18. Explain in detail the polarity of colour difference signal.

19. Explain the fractional block schematic of CCTV with a neat diagram.

Or

20. Write short notes on :

- (i) Dish Antenna. (4 marks)
- (ii) DVD. (4 marks)
- (iii) Laser source. (4 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch : E.C.E./Applied Electronics and Instrumentation/E.I.E.

**COMPUTER NETWORKS (LAS)**

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all the questions.*

**Part A**

*Each question carries 4 marks.*

1. What is TCP/IP ? Explain.
2. Explain asynchronous transmission with an example.
3. Short note on "serial communication standard".
4. What is Polling ? Explain.
5. Write short note on "ring network".
6. What is X-25 ? Explain its protocol.
7. What is ARPANET ? Explain.
8. Write short note on "remote procedure call".
9. What are the roles of the application layer ?
10. What is SONET ? Explain its principle.

(10 × 4 = 40 marks)

**Part B**

*Answer any five questions.  
Each question carries 12 marks.*

11. Explain the OSI network model in detail.

*Or*

12. What is Network Topology ? Explain the various network topologies.

Turn over

13. Write short notes on :

- (i) **Data rate** (4 marks)  
 (ii) **Multiplexing** (4 marks)  
 (iii) **X-21** (4 marks)

Or

14. What is Routing ? Explain in detail.

- (i) What is LAN ? and differentiate base band and broad band LAN. (6 marks)  
 (ii) Explain IEEE-802 standards. (6 marks)

Or

- (a) What is Flow Control ? Explain the various issues in it. (8 marks)  
 (b) Short note on "Carrier Sense Network". (4 marks)

17. Explain the role of session layer in detail.

Or

18. Explain the role of presentation layer in detail.

19. What is SDH ? Explain.

Or

20. Write short notes on :

- (i) Virtual terminal. (4 marks)  
 (ii) E-mail. (4 marks)  
 (iii) Distributed system. (4 marks)

[5 × 12 = 60 marks]



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**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch : ECE/Applied Electronics and Instrumentation Engineering

VHDL (Elective II) [L A]

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

*Each question carries 4 marks.*

1. Give example of entity declaration.
2. Discuss about operators.
3. Discuss the syntax of conditional signal Assignment.
4. Discuss about Multiple drivers.
5. Discuss the syntax of component instantiation.
6. Explain incremental Binding with example.
7. Explain the syntax of package body.
8. Write notes on operator overloading.
9. Discuss guarded signals.
10. Discuss about Interacting state machine.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. Write notes on :
  - (a) Configuration declaration.
  - (b) Package declaration.

(6 + 6 = 12 marks)

*Or*

12. Discuss various operators used in VHDL.

(12 marks)

13. Write notes on :

- (a) process statement. (6 marks)  
 (b) Sequential statement. (6 marks)

Or

14. Write a VHDI model of an 'n' bit parallel to serial converts. (12 marks)  
 15. Obtain a structural model of 3 input bit up-down counter circuit. (12 marks)

Or

16. Describe configuration specification with examples. (12 marks)  
 17. Discuss about sub-program overloading with example. (12 marks)

Or

18. Write notes on :

- (a) Package declaration. (6 marks)  
 (b) Implicit, explicit visibility. (6 marks)

19. Discuss about type conversion. (12 marks)

Or

20. Discuss about state Machine Modelling. (12 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2010**

**Eighth Semester**

Branch—Electronics and Communication Engineering, AE and I,  
Electronics and Instrumentation Engineering

MULTIMEDIA SYSTEM (Elective – III) (LAS)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all the questions.*

**Part A**

*Each question carries 4 marks.*

1. What is Multimedia ? Explain with an example.
2. Explain Adobe video editing multimedia tool.
3. Compare different image compression standards.
4. Short note on 'Capture and play back technique.
5. Compare compact disk and floppy disk.
6. Explain the various modes of CD ROM.
7. What are format classes in a Multimedia framework ?
8. What is multimedia network ? Explain.
9. What is Database integration ? Explain.
10. What is Interactive capacity ? Explain.

(10 × 4 = 40 marks)

**Part B**

*Answer any five questions.  
Each question carries 12 marks.*

11. (i) Compare analog and digital video. (6 marks)
  - (ii) Explain video editing tools. (6 marks)
- Or*
12. Discuss in detail about the various multimedia authoring tools. (12 marks)
  13. (i) What is MPEG ? Explain. (9 marks)
  - (ii) Compare MPEG and JPEG. (3 marks)

*Or*

**Turn over**

- 14. Explain GIF and TIFF file formats used for images. (12 marks)
- 15. What is CD ? Explain about packets required for CD quality bit stream without compression. (12 marks)

Or

- 16. What is Quick time ? Explain in detail. (12 marks)
- 17. Explain media classes and component classes in detail. (12 marks)

Or

- 18. (i) List the various problems related to programming and explain. (8 marks)
- (ii) Short note on Database integration. (4 marks)
- 19. Brief note on Future multimedia. (12 marks)

Or

- 20. Explain any two video capture techniques. (12 marks)
- [5 × 12 = 60 marks]