

Hall Ticket Number :

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R-14

Code: 4G479

IV B.Tech. I Semester Supplementary Examinations May 2018

Computer Networks

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain briefly about Public Switching Telephone Networks 7M
- b) Define Multiplexing and classify its types .Differentiate Multiplexing Techniques 7M

OR

2. a) Explain OSI - ISO Reference model 10M
- b) Compare LAN, MAN, WAN 4M

UNIT-II

3. a) Explain the Frame Structure of 802.11 7M
- b) Demonstrate Channel Allocation Problem 7M

OR

4. Illustrate Ethernet MAC Sublayer protocol. Describe Sliding Window protocols with an examples 14M

UNIT-III

5. a) Classify the Routing Algorithms. Describe in detail about Shortest Path 8M
- b) Describe in detail about Hierarchical Routing 6M

OR

6. a) State the Design Issues of Network layer 6M
- b) Explain about Internetworking 8M

UNIT-IV

7. a) Describe Transport Services 6M
- b) Explain the IPV6 header format with neat sketch 8M

OR

8. a) Compare UDP and TCP Transport Protocols 8M
- b) List the advantages of Internet Transport Protocols 6M

UNIT-V

9. a) Explain in detail about Electronic Mail 7M
- b) Write a short note on Multimedia 7M

OR

10. a) Define Cryptography .Explain Digital Signature 6M
- b) Describe Symmetric Key Algorithm with an example 8M

Hall Ticket Number :

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R-14

Code: 4G373

IV B.Tech. I Semester Supplementary Examinations May 2018

Digital Design Through Verilog HDL

(Electronics & Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Describe Verilog identifiers with examples. 7M
- b) List out various system tasks with examples. 7M

OR

2. a) Define simulation. 4M
- b) Describe test benches in Verilog HDL with examples. 10M

UNIT-II

3. a) Describe multiple outputs gates and tristate gates in Verilog Primitives. 7M
- b) Design JK-Flip Flop using gate level modeling in Verilog HDL. 7M

OR

4. a) Design 2 X 1 Multiplexer using CMOS built in primitive of Verilog HDL. 7M
- b) Distinguish net and trireg net in Verilog HDL. 7M

UNIT-III

5. a) Distinguish initial and always procedural constructs. 7M
- b) Explain assign and de-assign constructs in Verilog HDL. 7M

OR

6. a) Distinguish sequential and parallel blocks. 7M
- b) Describe case statements used in Verilog HDL. 7M

UNIT-IV

7. a) Distinguish Mealy and Moore Machines. 6M
- b) Explain module parameters with examples 8M

OR

8. a) Explain about file –based tasks and functions used in Verilog HDL. 7M
- b) Describe the UDP used in Verilog HDL with an example. 7M

UNIT-V

9. a) Advantages of One-Hot State Assignment? 6M
- b) Explain about Altera FLEX 10K Series CPLDs. 8M

OR

10. a) Design 1KB Static RAM Memory in Verilog HDL. 8M
- b) Explain about State Machines. 6M

Hall Ticket Number :

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R-14

Code: 4G372

IV B.Tech. I Semester Supplementary Examinations May 2018

Electronic Measurements and Instrumentation

(Electronics & Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain the following terms in detail.(i) Significant figures ii) Resolution 7M
- b) Discuss about dual slope integrator in detail with the help of necessary diagrams. 7M

OR

2. a) Explain the basic principle of a digital Multimeter. 7M
- b) Explain with the help of circuit diagram the construction and working of a series type ohm meter. 7M

UNIT-II

3. a) Discuss briefly about operation of Spectrum Analyzer. 7M
- b) Explain in detail about the principle and operation of Arbitrary Wave Generator with the help of neat block diagram. 7M

OR

4. a) Write about fixed frequency AF oscillator and variable AF oscillator. 7M
- b) Describe with the help of a sketch the basic sine wave generator. 7M

UNIT-III

5. a) How does the sampling oscilloscope increase the apparent frequency response of an oscilloscope? 7M
- b) What is the relationship between the period of a waveform and its frequency? How is an oscilloscope used to determine frequency? 7M

OR

6. a) Draw the neat diagram of vertical deflection system and explain briefly about their working. 7M
- b) Draw the block diagram of a dual beam oscilloscope and explain its working. 7M

UNIT-IV

7. a) Draw the Anderson bridge and derive the balancing conditions. 7M
- b) An ac bridge is fed with a source of frequency 1KHZ, across BD. The detector is connected across AB. The arm AB has $R=450\ \Omega$, arm BC has $R=300\ \Omega$ in series with $C=0.256\ \mu\text{F}$; arm CD has the unknown component; arm DA has $R=200\ \Omega$ in series with $L=15.9\ \text{mho}$. Find the constants of arm CD. 7M

OR

8. a) A Maxwell bridge is used to measure and inductive impedance at a frequency of 3 KHZ. The bridge constants at balance are arm 1: a capacitor of value $0.02\ \mu\text{F}$ in shunt with $390\ \text{k}\Omega$; arm 3 opposite to the arm 1 is having the unknown component; the other arms have each $18\ \text{k}\Omega$ resistor. Find the equivalent series circuit of the unknown impedance. What is the value of the quality factor? 7M
- b) What is the usual procedure for balancing the Maxwell Bridge and discuss the necessity to follow such procedure? Explain with the circuit diagram. 7M

UNIT-V

9. a) Write a brief note on different types of data acquisition systems. 7M
 - b) Explain IEEE-488 General Purpose Interface Bus. 7M
- OR**
10. a) Explain the working of a piezoelectric transducer with suitable equations and sketches. 7M
 - b) Derive and expression for gauge factor for a strain gauge. 7M

Code: 4G374

IV B.Tech. I Semester Supplementary Examinations May 2018

Embedded Systems

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Draw the architecture of 8051 and explain 8M
- b) Explain the addressing modes of 8051 with examples 6M

OR

2. a) Define interrupt priority and classify the INT structures 6M
- b) Write a program for 8051 to display a message on LED "WELCOME" when switch is pressed and "THANK U" when the switch is not pressed. Draw the neat interface diagram. 8M

UNIT-II

3. a) Draw the architecture of Embedded system and explain 6M
- b) Considering washing machine example ,explain the power ,features and comfort by using embedded system 8M

OR

4. What is an embedded system? Write short notes on different development tools available for an embedded system 14M

UNIT-III

5. a) Explain the process of generating executable image in an embedded system 6M
- b) Write a short notes on application software and debug port 8M

OR

6. a) What are the services provided by an operating system 8M
- b) Write a short notes on I/O devices and chip select 6M

UNIT-IV

7. a) Comparison between RS232 and RS422 6M
- b) Explain the need for communication interface and infrared 8M

OR

8. Write a short notes on
 - a) IEEE 1394 fire wire 4M
 - b) IEEE 802.11 4M
 - c) Bluetooth 4M
 - d) USB 2M

UNIT-V

9. a) Explain the tasks and task scheduler and ISR 6M
- b) Explain the inter process communication 8M

OR

10. a) Explain the real time operating systems and any two applications 8M
- b) Explain the handheld operating systems and its merits 6M

Code: 4G371

IV B.Tech. I Semester Supplementary Examinations May 2018

Optical Communication

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Discuss the mode theory of circular waveguide. 7M
- b) Briefly explain about the overall dispersion in single mode fibre. 7M

OR

2. a) Draw the block diagram of a fiber optic communication system. 7M
- b) List out the requirements for selecting materials in optical fibers and also explain about the following (i) Halid glass fibers (ii) Active glass fibers 7M

UNIT-II

3. a) Draw a schematic of edge emitting double hetero-junction LED and explain its working in detail. 7M
- b) List the factors involved in launching optical power from a light source to a fiber. 7M

OR

4. a) Explain different structure of lasers with neat sketches 7M
- b) Write short notes on external quantum efficiency. 7M

UNIT-III

5. a) Compare different photo detectors. 7M
- b) An InGaAs PIN photodiode has the following parameters at a wavelength of 1300 nm, $I_D = 4 \text{ nA}$, $\eta = 0.90$, $RL = 1000$ and the surface leakage current is negligible. The incident optical power is 300 nW and the receiver bandwidth is 20 MHz. Find: (i) Quantum noise current. (ii) Dark current noise. (iii) Thermal noise current. 7M

OR

6. a) Derive a relation for signal to noise ratio in optical detector. 7M
- b) Calculate the responsivity of a defector of with quantum efficiency of 10% at 800 nm. 7M

UNIT-IV

7. a) Explain material dispersion, waveguide dispersion and find expression for material and waveguide dispersion. 7M
- b) Write notes on fiber splices and connectors. 7M

OR

8. Describe three types of misalignment that contribute to insertion loss at an optical fiber joint. 14M

UNIT-V

9. a) Explain the system considerations in point-to-point links. 7M
- b) Explain about NRZ and RZ codes. 7M

OR

10. a) What are the underlying principles of the WDM techniques? 7M
- b) List the advantages and disadvantages of using WDM in optical fiber communication system 7M

Code: 4G47A

IV B.Tech. I Semester Supplementary Examinations May 2018

Object Oriented Programming

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Discuss various control statements in Java. 7M
- b) Explain about overloading methods and constructors with example program in Java. 7M

OR

2. a) Explain the following concepts with examples.
 - i) Scope and life time of Variable
 - ii) Type conversion and casting
 7M
- b) Write short notes on
 - i) Garbage collection
 - ii) Recursion
 7M

UNIT-II

3. a) Define Inheritance. Explain different forms of inheritance. 10M
- b) Explain the importance of CLASSPATH. 4M

OR

4. Define an Interface. Explain with an example how interfaces are accessed and implemented. 14M

UNIT-III

5. a) With example, explain the usage of try catch block in exception handling. 7M
- b) Explain about the life cycle of threads. 7M

OR

6. a) Define a thread. Explain how to creating a thread using a class and an interface. 7M
- b) Write a program that creates a three child threads. 7M

UNIT-IV

7. a) Explain TCP/IP Client sockets in detail. 7M
- b) Explain about applet life cycle. 7M

OR

8. a) Write a Java program the convert ArrayList into Array. 7M
- b) Differentiate between applets and applications. 7M

UNIT-V

9. a) Define Event. Explain about Delegation event model. 7M
- b) Write a Java program that demonstrate JScrollPane. 7M

OR

10. a) Write short notes on MVC architecture. 5M
- b) Write a java program using the following
 - i) JTable
 - ii) Checkboxes
 - iii) JTabbedPane.
 9M

Code: 4G375

IV B.Tech. I Semester Supplementary Examinations May 2018

Television Engineering

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) Explain the importance of interlaced scanning with a neat diagram? 7M
- b) What is meant by VSB transmission? Explain how it is suitable for T.V transmission? 7M

OR

2. a) With a neat block diagram, explain the working of a T.V transmitter in detail? 7M
- b) Write short notes on: (i) Aspect Ratio (ii) Kell factor (iii) Persistence of vision (iv) Resolution 7M

UNIT-II

3. a) Explain about various T.V. standards used all over the world? 7M
- b) Write about electrostatic focusing process in picture tubes? 7M

OR

4. a) With neat sketch explain the operation of picture tube? 7M
- b) Discuss about CCD sensors? 7M

UNIT-III

5. a) Discuss briefly about sync separation and processing in monochrome T.V receiver? 7M
- b) Explain the functioning of IF subsystem in monochrome T.V. receiver? 7M

OR

6. a) Explain about PAL-D color receiver? 7M
- b) Write short notes on the types of RF tuners? 7M

UNIT-IV

7. With neat sketches explain about VHF and UHF tuners? 14M

OR

8. a) Draw the block diagram of VHF tuner of T.V. Receiver & Explain? 7M
- b) Explain how accuracy is achieved and maintained by using digital tuning of electronic tuners with block diagram? 7M

UNIT-V

9. a) Explain the PAL-D decoder with the help of a neat block diagram? 7M
- b) Write about digital terrestrial T.V.? 7M

OR

10. a) Explain the working principle of color killer circuit with a neat sketch? 7M
- b) Why a burst of sub-carrier is sent along with the sync & blanking pulses? 7M
