

VSB ENGINEERING COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
EC6501 -DIGITAL COMMUNICATION
V SEMESTER
Assignment Questions

1. Explain the Digital Amplitude Modulation With its Applications in Detail.
2. Describe Binary Phase Shift Keying with its Application in Detail.
3. Application of Angle Modulated Waves.
4. Mention the application of NBFM
5. Explain the Application of Anti-Aliasing Filter.
6. Explain PTM with its Application.
7. Explain On-Off Keying (OOK) with its Application.
8. Applications of Digital Modulation schemes.
9. Application of Symmetric Channel
10. Application of Binary Channel
11. Explain the Application of FDMA
12. Explain the Application of SDMA
13. Explain the Application of CDMA
14. The generator Polynomial of a (7,4) Cyclic Code is $G(p)=P^3+PH$. Find all the Code Vectors for the Code in Non-Systematic Form.
15. Explain the Basic Digital Communication System With Merits and Demerits.
16. Find out the Generator Matrix for Systematic (7,4) Cyclic Code of $G(P)=P^3+P+1$. Also Find out the Parity Check Matrix.
17. Explain the Applications of angle Modulation.
18. Application of Linear Prediction
19. Explain How Encoding is done by Convolutional Codes With an Example.
20. Application of ADPCM

21. The Binary data 001101001 are applied to the input of a duo binary system. construct the duo binary coder output and corresponding receiver output with a precoder.
22. Application of LPC
23. Construct a single error correlating (7,4) linear block code and the corresponding decoding table.
24. Design a convolutional coder of constraint length 6 and rate efficiency $1/2$. Draw its tree diagram and trellis diagram.
25. Application of PSK
26. Explain in detail about QAM With its Application.
27. Explain the Practical Aspects of Sampling.
28. Explain the Application of Delta Modulation in Detail.

VSB ENGINEERING COLLEGE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
EC6502 PRINCIPLES OF DIGITAL SIGNAL PROCESSING

Assignment Questions

1. Applications of FIR & IIR filters in medical.
2. Applications of adaptive filter.
3. Sampling rate conversion of band pass signals.
4. Discrete wavelet transforms.
5. Design of digital systems for arbitrary sampling rate conversion.
6. Application of DSP in Biomedical Engineering.
7. Difference between Fourier series & Fourier transform.
8. Windowing in computer graphics.
9. Artificial bee colony algorithm for digital IIR filter.
10. Applications of IIR filters.
11. Applications of digital filters.
12. FFT audio analyzer.
13. Applications of FIR filters.
14. Analog filters for data conversion.
15. Optimal filters.
16. Moving average filters.
17. Windowed sinc vs. chebyshev.
18. The breadth & depth of DSP.
19. FFT sound analyzer.
20. Filter compression.
21. Harmonic analysis in Fourier series.
22. Applications of DFT.
23. Real world application of Fourier series.
24. Windowing & clipping in 2D.
25. Sampling rate conversion by arbitrary sectors.
26. Quantization in image processing.
27. FFT spectrum analyzer.
28. Quantization in image processing.
29. Applications of DFT
30. Adaptive filter in image processing.

V.S.B. ENGINEERING COLLEGE, KARUR
Department of Electronics and Communication Engineering
Academic Year: 2018-2019 (ODD Semester)

EC6503 TRANSMISSION LINES AND WAVEGUIDES

ASSIGNMENT QUESTIONS:

1. List and explain the applications of Electromagnetic field theory.
2. Discuss the difference between circuit theory and electromagnetic field theory.
3. Write briefly about Co-ordinate systems.
4. Explain the applications of Electrostatic field.
5. Write about the energy stored in an electrostatic field.
6. List all the applications of magneto static fields and explain them in brief.
7. Write about a force on a moving charge due to electric and magnetic fields.
8. Discuss the materials used in magnetic fields.
9. For a circular current element of radius = 2m. Determine the magnetic field H on the axis of the loop if $I=2A, h=2m$. Also find H at the centre of the loop.
10. Three thin conductors along x, y, z axes carry a current of 1mA. Determine the magnetic field H at the point (2, 3, 4).
11. If the separation between two infinitely long current elements is 5m and the elements carry 2A in opposite direction. Find the magnetic field at 1m from one current element.
12. Explain in details about the application of EM Waves.
13. Write about the wave equations in phasor form.
14. Discuss about wave propagation in lossless medium.
15. Explain in brief about the propagation constant characteristics of EM waves in free space and in conducting medium.
16. Explain about the wave propagation characteristics in good dielectrics and in good conductors.
17. Write about the polarization of a wave.
18. Explain about the waves on a perfect conductor normal incidence.
19. Explain about the waves on a dielectric normal incidence.
20. Explain about the oblique incidence of a plane wave on dielectric.
21. An EM waves in free space is incident normally on a dielectric whose $E_r=50$. Find the reflection and transmission coefficients.
22. Derive the field equations between parallel plates and propagation constant.
23. Explain the field equations in rectangular hollow waveguides.
24. Discuss about the propagation parameters of TE & TM waves in rectangular waveguides.
25. Write about the salient features of cavity resonators.
26. Explain about the types and applications of Transmission lines.
27. Explain briefly about the antenna, antenna parameters and its radiation mechanism.

28. Write about the Electromagnetic interference and Compatibility. (EMI/EMC)
29. Discuss about the methods to eliminate EMI or design methods for EMC.
30. Discuss about the EMC standards.
31. Write about the numerical techniques for the analysis of Electromagnetic fields.
32. List and explain the applications of Electromagnetic field theory.
33. Discuss the difference between circuit theory and electromagnetic field theory.
34. Write briefly about Co-ordinate systems.
35. Explain the applications of Electrostatic field.
36. Write about the energy stored in an electrostatic field.
37. List all the applications of magneto static fields and explain them in brief.
38. Write about a force on a moving charge due to electric and magnetic fields.
39. Discuss the materials used in magnetic fields.
40. For a circular current element of radius = 2m. Determine the magnetic field H on the axis of the loop if $I=2A, h=2m$. Also find H at the centre of the loop.
41. Three thin conductors along x, y, z axes carry a current of 1mA. Determine the magnetic field H at the point (2, 3, 4).
42. If the separation between two infinitely long current elements is 5m and the elements carry 2A in opposite direction. Find the magnetic field at 1m from one current element.
43. Explain in details about the application of EM Waves.
44. Write about the wave equations in phasor form.
45. Discuss about wave propagation in lossless medium.
46. Explain in brief about the propagation constant characteristics of EM waves in free space and in conducting medium.
47. Explain about the wave propagation characteristics in good dielectrics and in good conductors.
48. Write about the polarization of a wave.
49. Explain about the waves on a perfect conductor normal incidence.
50. Explain about the waves on a dielectric normal incidence.
51. Explain about the oblique incidence of a plane wave on dielectric.
52. An EM waves in free space is incident normally on a dielectric whose $E_r=50$. Find the reflection and transmission coefficients.
53. Derive the field equations between parallel plates and propagation constant.
54. Explain the field equations in rectangular hollow waveguides.
55. Discuss about the propagation parameters of TE & TM waves in rectangular waveguides.
56. Write about the salient features of cavity resonators.
57. Explain about the types and applications of Transmission lines.
58. Explain briefly about the antenna, antenna parameters and its radiation mechanism.
59. Write about the Electromagnetic interference and Compatibility. (EMI/EMC)
60. Discuss about the methods to eliminate EMI or design methods for EMC.

V.S.B. ENGINEERING COLLEGE, KARUR
Department of Electronics and Communication Engineering
Academic Year: 2018-2019 (ODD Semester)
Assignment questions(Case studies)

Sub: GE6351

Environmental Science and Engineering

Assignment questions(Case studies)

Compare any two ecosystems.

Case study of richness of Biodiversity in Tamilnadu

Discuss in detail about human-wildlife conflicts

A detailed note on Bhopal gas tragedy

Chernobyl nuclear accident. A case study

Case study of groundwater pollution.

Pollution on Indian Ocean. A review

Case study of Sterlite Industrial problem in Tuticorin.

Elaborate the Hiroshima and Nagasaki tragedy during the World war-II.

Pollution problem in dyeing industries in Tirupur District –A study.

Overview of marine pollution.

A study on Thermal pollution in IGCAR and KKNPP

Case study of mining and quarrying

What is your observation on effect of modern agriculture

Case study of bio gas conversion process.

Renewable energy resources utilization in Tamilnadu State

Case study on renewable energy resources-A World scenario

Case study of land degradation

Assignment questions(Case studies)

Case study on Methane gas in delta areas

Resettlement and rehabilitation of Tribal people- A study

Wasteland reclamation process- A case study

A detailed note on the major projects(Tehri dam, Sardar Sarovar dam)

What do you understand about the sustainable use on rain water harvesting

A world scenario on - HIV /AIDS

Women and child welfare programmes- A National view

Mention the importance of family planning programs

How information technology helps in protecting the Environment.

Women's self help group effectively progressing in Tamilnadu- A study

V.S.B. ENGINEERING COLLEGE, KARUR
Department of Electronics and Communication Engineering
Academic Year: 2018-2019 (ODD Semester)
EC 6504- Microprocessor and Microcontroller
V SEMESTER
Assignment Questions

- 1 Write an 8086 ALP to find sum of numbers in the array.
- 2 Write an 8086 ALP to add two 16 bit hexadecimal numbers.

Design an 80896 based system with the following specifications.
(i)8086 in maximum mode
- 3 (ii)64K byte EPROM
(iii)64Kbyte RAM
Draw the complete schematic of the design indicating address map.

Design an 8086 based microprocessor system with the following specifications.
(i)8086 mp working at 8 MHZ.
- 4 (ii)32K byte EPROM using 16KB devices.
(iii)64K byte SRAM using 16KB device.
Explain the design and show the memory chip.

Draw a block diagram to interface two 16K x 8SRAM to the 16-bit data bus of 8086 based system.
Design an address decoder for the address range from 00000H-07FFFFH for both the SRAMS.
- 5 Generate chip select signals with the help of 74LS138 to six memory chips of size 16KB with the
6 address map from 00000H to 17FFFFH.
Write a program that will check the switch1 status and do accordingly.
- 7 (i)S1=0;Blink lower nibble LEDs.(ii) S1=1;Blink Higher nibble LEDs.Assume delay routine is
available.
Write an ALP using 8086 instruction to read byte of data from port A and display its parity status as
- 8 00H or FFH for odd and even parity respectively, on port B.
The I/O circuitry in an 8086 based system, consists of 5 I/O devices with one status signal for each
9 device. Design the required hardware providing two address locations to each device, one for status
and the other for data. In the range 0F00H to 0F0FH.Write an instructions sequence to read the
status of each device and store it.
- 10 Interface 8255 PPI with 8086 mp in maximum mode. Draw interfacing diagram and mention address
map for 8255.
- 11 Interface 4x4 keyboard with 8086 mp.
- 12 Interface an 8-digit 7 segment LED display using 8255 to the 8086 mp system and write an 8086
ALP routine to display message on the display.
- 13 Write a program to generate triangular waveform of period 10ms.The CPU runs at 5MHz Clock
frequency.
- 14 Interface a typical 12 bit DAC with 8255 and write a program to generate triangular waveform of
period 10ms.The CPU runs at 5MHz Clock Frequency.
Design a programmable timer using 8253 and 8086.Interface 8253 at address 0040H for counter
- 15 0.Draw interfacing diagrams operating frequency for the 8086 and 8253 is 6MHz AND 1.5MHz
respectively. Write ALP to generate square wave of 1ms.Show control word formation and delay
calculations clearly.
- 16 Design a pre-settable alarm system using 8253/54 timer. Use thumbwheel switches to accept 4 digit
value in seconds. Alarm should last for 5 seconds. Do not use interrupt.
- 17 Interface an 8 x 8 matrix keyboard to 8086 through 8279 in 2 –key lockout mode and write an ALP to
read key code of the pressed key. The external clock frequency is 2 MHz. Use I/O mapped technique.
- 18 Interface an 8x 4 matrix keyboard using 8279.

- 19 Interface 8/7-segment digit(common cathode) to 8086 through 8279 and write an ALP to display 1 to 8 on the eight 7 segment digits. External clock frequency is 3MHz.
- 20 Program to convert 8-bit binary number to its equivalent BCD using 8051.
- 21 Program to add two 16-bit BCD numbers using 8051.
- 22 Implementing a BCD multiply using MUL & DIV (8051).
- 23 Find the maximum number from a given 8-bit number(8051).
- 24 Program to count number of one's in a number(8051).
- 25 Program to find the sum of 10 numbers stored in an array.
- 26 Program to data transfer from memory block B1 to memory block B2.
- 27 Assume that XTAL=11.0592 MHz. Write a program to generate a square wave of 2KHz frequency on pin P1.5.
When 8051 is powered up ports are configured as input ports. To make them work as output port We have to send high output on it. Therefore to behave T1 as P3.5 is set. Write a program display counter 0 an 7 segment LEDS. Assume clock input is connected to pin(p3.4)
- 28 Generate a square wave of frequency 1KHz using timer 1 in mode1 on pin P1.2. Explain the TMOD word used to configure the timer1 for this application. Show the necessary calculations to find the value of Cout to be loaded in to TH1 and TL1 Registers. Assume XTAL freq=11.0592 MHz.
- 29 Explain the steps to program timers in model and write an 8051 program to generate a square wave of 50% duty cycle on the pin P1.5.
- 30 Write an ALP to generate square wave on pin P1.5 OF 500MHz with subroutine to provide a time delay of 30.38 μ s using timer0. Assume that crystal frequency of 8051 is 11.0592Hz.
- 31 Write a program to receive message from PC to 8051. Message string is "Hello. After this microcontroller sends message to PC "Fine"
- 32 CISC Processor
- 33 Write an 8051 ALP that continuously 8-bit data from port2 and sends it to port 0. At the same time it should be read incoming data from serial ports at baud rate 9600 and send its port 1. Assume that crystal frequency=11.0592 MHz.
- 34 Interface 8-bit, 8 channel ADC to 8051. Write assembly language program to convert CH0, CH3 and CH1 and store result in external memory location starting from C000h. Repeat procedure for every 1 sec.
- 35 To generate square wave first we have to output FF and then 00 on port1 of 8051, The port1 is connected as an input to the DAC 0808. According to frequency requirement delay is provided between these two outputs.
- 36 Design a system for temperature measurements using 89c51MC along with switchable sensor and signal conditioning. Display the temperature on LCD. If the temperature rises above 100⁰C, signal it using a buzzer. Draw the complete block diagram and flowchart. Also write algorithm and program for the system, Discuss the hardware and software requirements in detail.
- 37 Draw and Explain the ARM7 architecture, addressing modes.
- 38 Explain about ARM 9 processor and applications.
- 39 Explain PIC microcontroller.
- 40 Explain about 8096 microcontroller architecture.
- 41 Draw and Explain 8096 general purpose I/O ports.
- 42 8096 Addressing modes.
- 43 Explain 8096 resets and self protection options.
- 44 Explain 8086 Microprocessor.
- 45 Write in detail about 80286 processor.
- 46

- 47 Explain 80386 processor.
- 48 Explain 64-bit advanced processor.
- 49 Explain Microcontroller with one real time application.
- 50 Draw and Explain numeric Co-Processor.
- 51 Explain 32 bit processor.
- 52 Explain Embedded system processor.
- 53 Draw and Explain Hardware real time microprocessor.
- 54 RISC Processor