

(DEC 311)

B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Third Semester)

Electronics and Communications

Paper I – LINEAR CONTROL SYSTEMS

Time : Three hours

Maximum : 75 marks

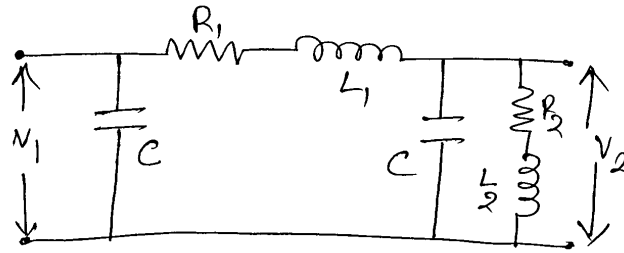
Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

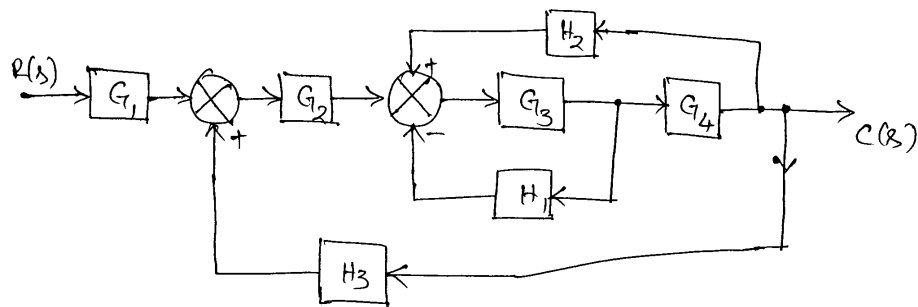
1. (a) What are the advantages of closed-loop system?
- (b) Compare the terms stability and sensitivity.
- (c) What is mathematical model of a system?
- (d) What is signal flow graph?
- (e) What is transient and steady state response?
- (f) What are generalised error constants?
- (g) What is steady state error?
- (h) Define characteristic equation.
- (i) What is frequency response analysis?
- (j) What are the advantages of bode plot?
- (k) What are the effects of adding poles to transfer function?
- (l) What are breakaway points?
- (m) What are state variables?
- (n) Define state transition matrix.
- (o) Draw the polar plot of a lag lead compensator.

UNIT I

2. (a) Find the transfer function of

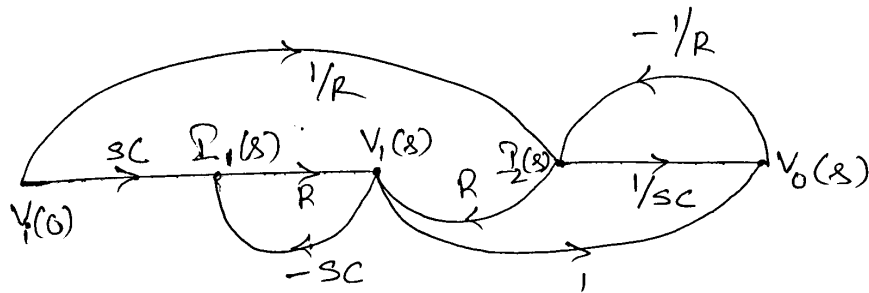


- (b) Draw the signal flow graph of the given block diagram and find its transfer function using Mason's gain formula.

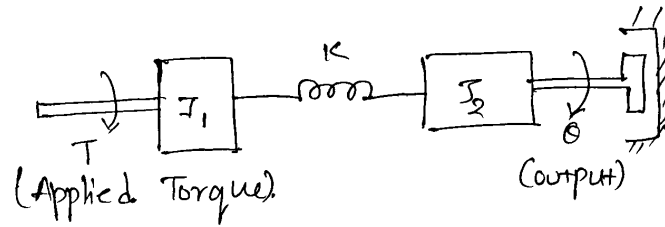


Or

3. (a) Find transfer function.



- (b) Obtain the transfer function of the mechanical system as shown in fig.



UNIT II

4. (a) For a system $G(s)H(s) = \frac{k}{s^2(s+2)(s+3)}$. Find the value of k to limit steady state error to 10 when input to system is $r(t) = 10 + 20t + \frac{40}{2}t^2$.
- (b) The transfer function of a closed loop system with unity feedback is $G(s) = \frac{k(s+2)(s+1)}{(s+0.1)(s-1)}$. Comment on stability.

Or

5. (a) Derive the expressions for rise time, peak time, peak overshoot.
- (b) Using Routh criterion, determine the stability of the system whose characteristic equation is $s^4 + 8s^3 + 10s^2 + 10s + 5 = 0$. Comment on the location of the roots.

UNIT III

6. (a) Sketch the root locus for the system and comment on stability.

$$G(s)H(s) = \frac{k(s+4)(s+5)}{(s+3)(s+1)}, k > 0.$$

- (b) State and explain Nyquist stability criterion.

Or

7. Sketch the Bode for the transfer function $G(s) = \frac{10(s+3)}{s(s+2)(s^2+4s+100)}$. Find gain margin and phase margin. Also find

- (a) Gain cross over frequency
- (b) Phase cross over frequency.

UNIT IV

8. (a) Obtain the state model for system represented by $\frac{d^3 y}{dt^3} + 5\frac{d^2 y}{dt^2} + 10\frac{dy}{dt} + 9y = 2u$.
- (b) What is compensation? Why it is needed for control system? Explain the types of compensation.

Or

9. (a) Obtain a state space model of the system with transfer function $\frac{y(s)}{u(s)} = \frac{6}{s^3 + 6s^2 + 11s + 6}$.
- (b) Explain the design procedure for lag-lead compensation.

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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

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Electronics and Communications

Paper II — ELECTRONICS CIRCUITS – II

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsory. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1.
 - (a) Define conversion efficiency of power amplifiers.
 - (b) State the efficiency of class B power amplifier.
 - (c) What is cross over distortion?
 - (d) What is the advantage of class C power amplifier?
 - (e) State Barkhausen criterion.
 - (f) Write the desensitivity factor in negative feedback amplifier.
 - (g) Write the expression for frequency of oscillations in Hartley oscillator.
 - (h) Which feedback is used in oscillators?
 - (i) What is tuned amplifier?
 - (j) What is chopper amplifier?
 - (k) What is the advantage of stagger tuned amplifier?
 - (l) Classify voltage regulators.
 - (m) Define load regulation.
 - (n) What is meant by regulated power supply?
 - (o) What is UPS?

UNIT I

2. (a) Draw the circuit of class A power amplifier with transformer coupling and explain its working.
(b) Discuss about Harmonic distortion in amplifiers.

Or

3. (a) Classify power amplifiers in detail.
(b) Explain about class B push pull complementary symmetry power amplifier with neat sketches.

UNIT II

4. (a) Draw and explain RC phase shift oscillator using BJT.
(b) Discuss about different topologies of negative feedback amplifiers.

Or

5. (a) Draw the circuit diagram of negative feedback amplifier and obtain expression for gain.
(b) Explain about crystal oscillator with its equivalent circuit.

UNIT III

6. (a) Explain about single tuned amplifier with the help of neat diagrams.
(b) What is stagger tuned amplifier? Draw its circuit and explain its working.

Or

7. (a) Draw the circuit diagram of double tuned amplifier and explain its operation.
(b) Discuss about FET as a chopper.

UNIT IV

8. (a) Explain about shunt regulators with neat circuits diagrams.
(b) What are various parameters in connection with regulators?

Or

9. (a) Draw the circuit diagram of series regulator and explain its operation.
(b) Discuss about switching mode power supplies.
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B. Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Third semester)

Electronics and Communications

Paper III — COMPUTER ORGANIZATION

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit (4 × 15 = 60)

1.
 - (a) Define register transfer language.
 - (b) Define BUS.
 - (c) Define instruction cycle.
 - (d) Define interrupt.
 - (e) Define the purpose of program counter.
 - (f) Define stack.
 - (g) Define instruction format.
 - (h) Define cache.
 - (i) Define data transfer.
 - (j) Define the purpose of instruction register.
 - (k) Define address bus.
 - (l) Define the purpose of address register.
 - (m) Define interface.
 - (n) Define the purpose of control unit.
 - (o) Calculate the size of memory unit, When computer has 20 address lines.

UNIT I

2. (a) Explain clearly Arithmetic micro operations.
- (b) Draw and explain about arithmetic logic shift unit.

Or

- (c) Explain clearly about memory- reference instructions.
- (d) Explain about interrupt cycle with flow chart.

UNIT II

3. (a) Explain about address sequencing with proper diagram.
- (b) Explain about design of control unit.

Or

- (c) Explain about various addressing modes.
- (d) Explain the concept of stack organization.

UNIT III

4. (a) Explain about multiplication algorithm.
- (b) Explain about floating-point operations.

Or

- (c) Explain clearly about memory hierarchy.
- (d) Explain about mapping process in associative memory.

UNIT IV

5. (a) Explain about asynchronous data transfer.
- (b) Explain about modes of transfer.

Or

- (c) Explain about serial communication.
 - (d) Discuss about DMA.
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Electronics and Communications

Paper IV — PULSE CIRCUITS

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1. (a) Define peaking.
- (b) Sketch the output response of RC high pass circuit with ramp input.
- (c) What is the condition for good integrator?
- (d) State the application of an attenuator.
- (e) What is a limiter?
- (f) Define storage time.
- (g) Define Rise time.
- (h) What is stable state?
- (i) What is the purpose of commutating capacitors?
- (j) Write the applications of Schmitt trigger.
- (k) What is the pulse width expression of monostable multi?
- (l) Define transmission error.
- (m) Write the expression for slope error interms of time constant.
- (n) What is the application of sweep circuit?
- (o) What is trapezoidal waveform?

UNIT I

2. (a) Obtain the response of RC high pass circuit with pulse input at different time constants.
- (b) Briefly explain about ringing circuit.

Or

3. (a) Prove that RC low pass circuit behaves as an integrator.
- (b) Explain about uncompensated attenuators and how compensation is achieved?

UNIT II

4. (a) Draw the two level clipper circuit and explain its working with neat waveforms and transfer characteristics.
- (b) What is clamper? Explain about negative clamper with neat sketches.

Or

5. (a) Explain about positive peak clipper with neat waveforms and transfer characteristics.
- (b) State and prove clamping circuits theorem.

UNIT III

6. (a) Draw the Schmitt trigger circuit and explain its operation.
- (b) Explain the working of astable multivibrator with neat waveforms.

Or

7. (a) What is Bistable multivibrator? Explain various triggering schemas of bistable multivibrator.
- (b) Draw the circuit of monostable multivibrator and explain its operation with the help of waveforms.

UNIT IV

8. (a) Explain Miller sweep circuit with neat sketches.
- (b) Draw the simple current sweep circuit and explain the working of it with neat waveform.

Or

9. (a) Explain about exponential sweep circuit with neat sketches and obtain expression for slope error.
- (b) Draw the circuit of monostable blocking oscillator with emitter timing and explain its working.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Third Semester)

Electronics and Communications

Paper V — OOPS and OS

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer One questions from each unit. (4 × 15 = 60)

1. (a) Define Token.
- (b) Define Type cast operator
- (c) Define keyword
- (d) Define ADT
- (e) Define Derived data type
- (f) Define call by reference
- (g) Define class
- (h) Define Destructor
- (i) Define process
- (j) Define Thread
- (k) Define Algorithm
- (l) Define Paging
- (m) Define Scheduling
- (n) Define Function
- (o) Define object.

UNIT I

2. (a) Explain clearly various applications of OOPS.
- (b) Explain Advantages of C++.

Or

- (c) Explain various data types in C++.
- (d) What are the rules involved while declaring variables in C++.

UNIT II

3. (a) Explain the concept of function overloading with example.
- (b) Explain friend and virtual functions.

Or

- (c) Explain about pointers with examples.
- (d) Explain about Functions Prototyping.

UNIT III

4. (a) Explain the concept of Process Scheduling.
- (b) Explain about Inter Process Communication.

Or

- (c) Explain about Multiprocessor Scheduling.
- (d) Discuss about Red time Scheduling.

UNIT IV

5. (a) Explain the concept of segmentation with paging.
- (b) Explain about continuous allocation.

Or

- (c) Explain about Page replacement algorithm.
 - (d) Discuss about Demand Segmentation.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.
(Examination at the end of Third Year and Third Semester)

Electronics and Communications

Paper VI — ANALOG COMMUNICATION

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1. (a) What are the drawbacks of PAM?
- (b) Mention the applications of PWM.
- (c) Write the importance of Balanced modules.
- (d) Define modulation.
- (e) Define frequency division multiplexing.
- (f) Define noise figure.
- (g) State sampling theorem.
- (h) State Carson's rule.
- (i) Explain PLL.
- (j) What is the importance of VSB modulation?
- (k) Write any two differences between DSB-SC and AM.
- (l) Draw the circuit diagram of square law modulator.
- (m) What is meant by zero crossing detectors?
- (n) Explain TDM.
- (o) Define phase modulation.

UNIT I

2. (a) Explain DSB–SC modulation.
- (b) Explain the generation of AM by square law modulator.

Or

- (c) Write about quadrature–carrier multiplexing.
- (d) Explain the operation of balanced modulator.

UNIT II

3. (a) Explain the generation of SSB-SC wave.
- (b) Explain frequency division multiplexing.

Or

- (c) Explain frequency discrimination method.
- (d) Differentiate between complex envelope and natural envelope.

UNIT III

4. (a) Explain the operation of zero crossing detector.
- (b) Write the applications of FM.

Or

- (c) Write a short notes on phase modulation.
- (d) Explain the Armstrong method of FM generation.

UNIT IV

5. (a) Explain the generation of PAM.
- (b) Explain the time division multiplexing.

Or

- (c) Compare PWM and PPM.
 - (d) Compare any two discrete modulation techniques.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper I — LINEAR INTEGRATED CIRCUITS
AND APPLICATIONS

Time : Three hours

Maximum : 75 marks

Answer Question No.1 compulsorily ($15 \times 1 = 15$)

Answer ONE question from each Unit ($4 \times 15 = 60$)

1.
 - (a) Define slew rate.
 - (b) What is the gain of noninverting amplifier?
 - (c) Write the expression for integrator.
 - (d) What is precision diode?
 - (e) Write the condition for oscillator.
 - (f) What is VCO?
 - (g) Write the expression for frequency of oscillations in RC phase shift oscillator.
 - (h) Draw the o/p waveform for inverting comparator.
 - (i) What is the drawback of weighted Resistor D/A converter?
 - (j) Define Resolution of ADC.
 - (k) What is Pin No.7 of 555 timer?
 - (l) Write the application of monostable multi using 555 timer.
 - (m) Define line regulation.

- (n) What is Notch filter?
- (o) What are the advantages of active filters?

UNIT I

- 2. (a) Draw the internal block diagram of operational amplifier and explain each block in detail.
- (b) Obtain an expression for voltage to current converter.

Or

- 3. (a) Draw the circuit of summing amplifier in inverting mode and obtain an expression for output voltage.
- (b) Sketch the differentiator circuit and explain its working with relevant waveforms.

UNIT II

- 4. (a) Explain about Wien bridge oscillator with neat waveforms.
- (b) Describe the working of Schmitt trigger with neat sketches.

Or

- 5. (a) Draw the circuit of square wave generator and explain its working.
- (b) Explain about zero crossing detector with neat waveforms.

UNIT III

- 6. (a) Draw the sample and Hold circuit and explain its working with neat waveforms.
- (b) Explain the operation of R-2R ladder D/A converter with neat diagrams.

Or

- 7. (a) Describe the working principle of Peak detector with relevant diagrams.
- (b) Explain the operation of successive approximation A/D converter with neat sketches.

UNIT IV

8. (a) Draw the astable multivibrator using 555 timer to achieve 50% duty cycle.
(b) Explain about first order low pass filter with its circuit diagram.

Or

9. (a) Discuss about the operating principle of phase locked loop.
(b) Briefly explain about 723 voltage regulator.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper II — MICROPROCESSORS AND INTERFACING

Time : Three hours

Maximum : 75 marks

Answer Question No.1 compulsorily. ($15 \times 1 = 15$)

Answer ONE question from each Unit. ($4 \times 15 = 60$)

1. (a) Name the 8-bit registers of 8086.
- (b) Which unit is responsible for performing arithmetic calculations?
- (c) What does the instruction CMP AX, BX do?
- (d) Explain instruction STC.
- (e) Distinguish between a near jump and far jump.
- (f) What is the role of the direction flag in string instructions?
- (g) Explain DT/\overline{R} is high, what is indicated?
- (h) Explain the term Interrupt Service Routine.
- (i) What is the importance of the BSR mode of the 8255?
- (j) What is meant by reading a count 'on the fly'?
- (k) What is RS-232C?
- (l) What is meant by handshaking operation?
- (m) Distinguish between a near and a far call.
- (n) When is the CWD instruction used?
- (o) Differentiate between microprocessor and microcomputer.

UNIT I

2. (a) Draw and explain the internal architecture of 8086.
(b) Compare procedures and macros.

Or

3. (a) Explain the functions of the following signals of 8086 :
(i) INTR (ii) READY (iii) RESET (iv) $\overline{\text{DEN}}$
(v) $\overline{\text{TEST}}$ (vi) NMI (vii) $\overline{\text{BHE/S7}}$ (viii) HLDA
(b) Explain the various addressing modes of 8086.

UNIT II

4. (a) Explain the following instructions :
(i) `CMP 34H [DI] [BX], DL`
(ii) `OR AL, BL`
(iii) `ADD CX, [SI]`
(iv) `MOV DS, AX`
(b) Write a program to add the contents of two words which are in memory and store the sum in a third address.

Or

5. (a) Bring out the differences between the jump and call instructions.
(b) Write a program to add two BCD numbers.

UNIT III

6. (a) Explain the interrupt response sequence of 8086.
(b) Draw and explain the interfacing diagram of ADC to 8086.

Or

7. (a) Explain modes of operation of 8255.
(b) Explain the interrupt vector table of 8086.

UNIT IV

8. (a) Explain the maximum mode of operation of 8086.
(b) Explain RS232C serial data standard.

Or

9. (a) Draw and explain the block diagram of 8251.
(b) Explain any three modes of operation of 8253/8254.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper III — DIGITAL SIGNAL PROCESSING

Time : Three hours

Maximum : 75 marks

Answer Question No.1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1. (a) What are the applications of DSP?
- (b) What is LTI system?
- (c) What is meant by Region of convergence in Z-transforms?
- (d) State initial and final value theorem.
- (e) Distinguish between DFT and DTFT?
- (f) What are difference between Butterworth and Chebyshev filter?
- (g) Why FFT design is important over DFT?
- (h) What is window and why it is necessary?
- (i) What is meant by Gibb's phenomenon?
- (j) What is zero padding? Explain its uses.
- (k) Give the expression for Blackman and Barlett window.
- (l) What is recursive and non-recursive realizations?
- (m) Define phase delay and group delay.
- (n) What is meant by frequency warping?

UNIT I

2. (a) Determine whether the following system is (i) Linear, (ii) Causal, (iii) Stable and (iv) Time Invariant $y(n) = \log_{10} |x(n)|$. Justify your answer.
(b) State the conditions for a digital filter to be causal and stable.

Or

3. (a) Let $x_1(n) = x_2(n) = \begin{cases} 1; & 0 \leq n \leq N-1 \\ 0; & \text{otherwise} \end{cases}$

Find out the circular convolution of these equations.

- (b) Find the DFT of a sequence using DIT algorithm $x_1(n) = \{1, 2, 3, 4, 4, 3, 2, 1\}$

UNIT II

4. (a) State and prove the time reversal and circular frequency shift property of DFT.
(b) What is FFT? Calculate the number of multiplications need in the calculation of DFT using FFT algorithm with 32-bit sequence.

Or

5. Given $x(n) = (-2)^n$ and $N = 4$ find $X(K)$ using both DIF-FFT and DIT-FFT algorithms.

UNIT III

6. (a) Difference between Butterworth and Chebyshev filter method.
(b) Comparison of IIR and FIR filters.

Or

7. Design a butterworth filter using the impulse invariance method for the following specifications :

$$0.8 \leq |H(w)| \leq 1 \quad 0 \leq w \leq 0.2\pi$$

$$|H(w)| \leq 0.2 \quad 0.6\pi \leq w \leq \pi$$

Implement this using parallel form structure.

UNIT IV

8. (a) What is meant by Gibb's phenomenon?
(b) Compare different windowing techniques.

Or

9. (a) What are the important properties of linear phase filters?
(b) Give the design procedure for FIR filter design by windowing technique.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper IV — ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

Time : Three hours

Maximum : 70 marks

Answer Question No. 1 compulsorily. (14 × 1 = 14)

Answer ONE question from each Unit. (4 × 14 = 56)

1. (a) What is the difference between accuracy and precision?
- (b) What is the difference between primary and secondary standards?
- (c) Define instrumental error and limiting error.
- (d) Draw the wheat stone bridge and write balance equation.
- (e) Define gross error.
- (f) What is piezo electric effect?
- (g) What is SINAD meter?
- (h) Define gage factor.
- (i) Why an alternator prove is used in Oscilloscope?
- (j) What is calibration of a meter?
- (k) List the advantages of thermocouples.
- (l) What is meant by data acquisition?
- (m) Define transducer.
- (n) Write any two principles of electrocardiographs.

UNIT I

2. (a) Explain the operation of a wein bridge.
(b) Draw the block diagram of a multimeter and explain its function in detail.

Or

- (c) Explain the operation of a wheat stone Bridge and derive the balanced bridge condition.
(d) Define :
(i) Sensitivity
(ii) Resolution
(iii) Static sensitivity
(iv) Absolute error.

UNIT II

3. (a) With neat sketch explain cathode ray Oscilloscope.
(b) Explain sampling Oscilloscope, with neat sketch.

Or

- (c) Explain the operation of a spectrum analysis.
(d) Discuss the working and applications of Q.meter.

UNIT III

4. (a) What are the various principles of operation of capacitive transducers? Explain them.
(b) Explain thermocouple construction and advantages and disadvantages of thermocouple.

Or

- (c) Compare and contrast RTD and thermistor for usage of temperature measurement.
(d) Explain the principle of following transducers for measuring linear displacement.
(i) Strain gauges (ii) Thermometers (iii) Piezo-electric transducers.

UNIT IV

5. (a) What are the objects of a DAS? What are the factors that decide the configuration of DAS?
- (b) Explain about digital data acquisition system.

Or

- (c) Explain with the help of Block diagram explain EEG recording system.
- (d) Explain electromyograph.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper V — DIGITAL COMMUNICATIONS

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1.
 - (a) Define quantization process.
 - (b) Write the applications of PCM.
 - (c) What are the advantages of adaptive quantization?
 - (d) Define Nyquist rate.
 - (e) Define Intersymbol interference.
 - (f) What are the advantages of Duobinary signalling?
 - (g) Write the properties of Entropy.
 - (h) Write source coding theorem.
 - (i) Write the properties of linear block codes.
 - (j) Define probability of error.
 - (k) Write the error correcting properties of hamming codes.
 - (l) What are the differences between BFSK and Non coherent BFSK.
 - (m) What are the advantages of DPCM.
 - (n) Define constraint length.
 - (o) Write the properties of convolutional codes.

UNIT I

2. (a) Explain the generation of DPCM.
(b) Write about quantization noise.

Or

- (c) Explain the encoding process of PCM.
(d) Explain the operation of delta modulation.

UNIT II

3. (a) Explain gram schmidt orthogonalization procedure.
(b) Explain about DPSK.

Or

- (c) Explain the procedure of coherent detection of signals in noise.
(d) Explain about QPSK.

UNIT III

4. (a) State and prove shannon fano coding.
(b) Define mutual information and write their properties.

Or

- (c) State and prove the shannon's capacity theorem.
(d) With an example explain Huffman coding.

UNIT IV

5. (a) Explain the generation of linear block codes.
(b) Draw the cycle encoder for a (7,4) cyclic code.

Or

- (c) Explain the generation of convolution codes.
(d) Explain the generation of Hamming code.
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B.Tech. DEGREE EXAMINATION, DECEMBER 2012.

(Examination at the end of Third Year Fourth Semester)

Electronics and Communications

Paper VI — COMMUNICATION SYSTEMS

Time : Three hours

Maximum : 75 marks

Answer Question No. 1 compulsorily. (15 × 1 = 15)

Answer ONE question from each Unit. (4 × 15 = 60)

1. (a) Define fading.
- (b) What is the need of Mixer in receiver section?
- (c) Define switching system
- (d) What is the difference between centralized SPC and distributed SPC?
- (e) Give the IF amplifier specifications.
- (f) Define switching in telecommunications
- (g) Define diversity
- (h) Define Amplitude modulations.
- (i) Define AGC
- (j) What are the different measurements in receivers is used?
- (k) Write different types of Camera tubes.
- (l) Expand NTSC and PAL systems
- (m) Write different types of picture tubes
- (n) What is meant by Superheterodyne?
- (o) Define frequency allocation.

UNIT I

2. (a) Draw and explain the block diagram of radio transmitter.
(b) Explain about alignment and tracking of radio receiver.
Or
(c) Explain the frequency allocation for radio communication system.
(d) Explain about the superheterodyne receiver.

UNIT II

3. (a) Explain about the electronic space division switching.
(b) Write about n-stage combination switching.
Or
(c) Explain about time division switching.
(d) Write about simple telephone communication.

UNIT III

4. (a) Draw and explain the composite video signal.
(b) Draw and explain the broadcast TV receiver.
Or
(c) Draw and explain the broadcast TV transmitter.
(d) Explain the principle of operation of plumbicon.

UNIT IV

5. (a) Explain TV transmission.
(b) Write about Digital TV.
Or
(c) Write a short notes on DTH.
(d) Explain TV reception.
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