

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Computer Organization and Operating Systems

Branch: ECE

Time: 3 hours

Max. Marks: 60

PART - A

Answer ALL questions of the following

5x2Mark=10 Marks

1. Explain about Various types of Computers
2. Give any four differences between microprogramming & nano programming.
3. Discuss about Peripheral Devices.
4. What are system calls?
5. What is File System Mounting?

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. a) How common bus system is implemented for transferring information between registers in a multiple register configuration?
b) What is use of buffers? Explain about tri-state buffers. Explain about high Impedence State.
2. a) How do you map micro operation to a micro instruction address?
b) Find 2's complement of the following
i) 10010 ii) 111000 iii) 0101010 iv) 111111
3. a) Hard wired control unit is faster than Microprogrammed control unit. Justify this statement.
b) What are the different types of Mapping Techniques used in the usage of Cache Memory? Explain.
4. a) Show the memory hierarchy. Give the brief explanation
b) Explain how the bit cells are organized in a Memory chip. Explain the organization of 1K X 1 Memory with a neat sketch.
5. a) Discuss in brief about Standard Serial Communication Protocols.
b) What is Interrupt? Explain about Priority interrupts.
6. a) What is DMA? Explain how processor will get benefit with this.
b) Explain about Asynchronous Data Transfer.
7. a) Explain about Page Replacement Algorithms.
b) Explain about OS services.
8. a) Explain various techniques implemented for free space management, discuss with suitable examples.
b) Describe indexed file, indexed sequential file organization.

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II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Digital Electronics

Branch: ECE

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2M=10 Marks

1. Convert the decimal number 431 to binary in two ways:
 - a) Convert directly to binary;
 - b) Convert first to hexadecimal and then from hexadecimal to binary.
2. Distinguish prime implicants and essential prime implicants.
3. Design a full adder using half adders
4. What are the applications of Flip flops?
5. Differentiate between Mealy machine and Moore machine.

PART – B

Answer any FIVE questions of the following

5x10M=50 Marks

1. a) Convert the decimal numbers 250.5, 12.0625, 673.23 to binary, base 8 and base 16. (6M)
b) Explain any two non-weighted codes with example. (4M)
2. a) Describe the procedure for generating Hamming code with an example. (7M)
b) Write short notes on Hardware Description Languages. (3M)
3. a) Implement the Boolean function: $F = xy + x'y' + y'z$
 - i) With AND, OR, and inverter gates
 - ii) With OR and inverter gates
 - iii) With AND and inverter gates [3X2M=6M]
b) Develop a HDL code for Universal Gates. [4M]
4. a) Prove the Boolean expression using truth table: $AB + BC + CA' = AB + A'C$
b) Design XOR gate using only NAND gates.
5. Use a multiplexer having three data select inputs to implement the logic for the function $F = \sum(0,1,2,3,4,10,11,14,15)$
6. a) Write a short note on Comparator
b) Write about HDL code for Half Adder
7. a) Explain D Flip-flop operation with the help of characteristic table and characteristic equation. Give the symbol of edge triggered D flip flop. [6M]
b) Design a Parallel in Parallel out Shift Register. [4M]
8. a) Write short notes on partition techniques
b) Write about Moore type FSM.

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II B.TECH II SEMESTER REGULAR AND SUPPLEMENTARY EXAMINATIONS, MAY-2018Subject: Special Functions and Complex Analysis

Branch: Common to EEE & ECE

Time: 3 hours

Max. Marks: 60

PART-A

Answer ALL questions of the following

5 x 2 M=10 M

1. Evaluate $\int_0^1 \frac{x^2 dx}{\sqrt{1-x^4}}$ using β , Γ functions.
2. Evaluate $\int x^3 J_0(x) dx$
3. Prove that the real and imaginary parts of an analytic function $f(z) = z^2$ satisfy Cauchy-Riemann equations.
4. Expand $\log(1+z)$ by Taylor series about $z=0$
5. Under the transformation $\omega = \frac{z-i}{1-iz}$, find the image of the circle $|\omega|=1$.

PART-B

Answer any FIVE questions of the following

5 x 10 M=50 M

1. Using the Frobenius method find the series solution of the differential equation $x^2 y'' - xy' + (1-x)y = 0$ about its regular singular point.
2. Solve in series the equation $\frac{d^2 y}{dx^2} + x^2 y = 0$
3. a) Express $P(x) = x^4 + 2x^3 + 2x^2 - x - 3$ in terms of Legendre Polynomials
b) Prove that $\int_{-1}^1 x P_n(x) P_{n-1}(x) dx = \frac{2n}{4n^2 - 1}$
4. a) Prove $\int_0^1 p_n(x) dx = 0$, when n is even
b) Prove that $x J_n'(x) = n J_n(x) - x J_{n+1}(x)$
5. Show that the function $f(z) = \begin{cases} \frac{z^5}{|z|^4}, & z \neq 0 \\ 0 & z = 0 \end{cases}$ satisfied the Cauchy - Riemann equations but $f(z)$ is not differentiable at 0.
6. a) Evaluate $\int_C \frac{dz}{z^2+9}$ where C is circle $|z-3i|=4$
b) Use Cauchy integral formula to evaluate $\int_C \frac{\sin \pi z^2 + \cos \pi z^2}{(z-1)(z-2)} dz$, where C is the circle $|z|=3$
7. a) Find the poles of the function $f(z) = \frac{1}{(z+1)(z+3)}$ and residues at these points.
b) Evaluate $\int_C \frac{ze^z}{z^2+9} dz$ where C is $|z|=5$ by Cauchy's Residues theorem.
8. a) Show that the image of the hyperbola $x^2 - y^2 = 1$ under the transformation $w = \frac{1}{z}$ is the lemniscate $p^2 = \cos(2\varphi)$.
b) Find the image of the circle $|z-2i|=2$, under the transformation $w = \frac{1}{z}$

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF MATHEMATICS

1954-1955

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II B.TECH II SEMESTER REGULAR AND SUPPLEMENTARY EXAMINATIONS, MAY-2018Subject: Electromagnetic Theory and Transmission Lines

Branch: ECE

Time: 3 hours

Max. Marks: 60

PART-A

Answer ALL Questions of the following

5x2M=10M

1. State and briefly discuss the basic definition of the curl of a vector.
2. Explain the basis for magnetic scalar potential.
3. Derive relation between depth of penetration and attenuation constant.
4. Give the condition for lossless transmission in transmission lines.
5. What are the limitations of single stub matching sections?

PART-B

Answer any FIVE Questions of the following

5x10M=50M

1. Derive the dielectric –dielectric boundary conditions in static electric field.
2. a) State Gauss's law and write Maxwell's first equation.
b) By using Gauss's law, find D, E due to point charge and infinity sheet charge.
3. Define magnetic vector potential. Given $\vec{A} = -\frac{\rho^2}{4} \hat{a}_z$ wb/m. Calculate the total magnetic flux crossing the surface $1 \leq \rho \leq 2\text{m}$, $0 \leq z \leq 5\text{m}$.
4. a) What are convection and conduction current densities?
b) What is the inconsistency in Ampere's Law? How it can be avoided?
5. State & Prove Poynting theorem
6. a) Derive the expressions for α and β in a good conductor.
b) Find wave length and phase velocity of propagation through copper at a frequency of 50MHZ if $\mu = 4\pi \times 10^{-7} \text{ H/m}$ and $\sigma = 508 \times 10^7 \text{ mho/m}$
7. a) With a neat diagram, derive the general transmission line equations.
b) Show that $\lambda/4$ line acts like impedance inverter.
8. Find the length and position of single stub matching section to match 100Ω line to load impedance of $200+j300 \Omega$. Use smith chart.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF POLITICAL SCIENCE
INSTITUTIONAL ANALYSIS
POLITICAL SCIENCE 301

INSTITUTIONAL ANALYSIS

Spring 1998

Section 1: Introduction to Institutional Analysis
Section 2: The Role of Institutions in Political Systems

Section 3: The Role of Institutions in Political Systems

Section 4: The Role of Institutions in Political Systems

Section 5: The Role of Institutions in Political Systems

Section 6: The Role of Institutions in Political Systems

Section 7: The Role of Institutions in Political Systems

Section 8: The Role of Institutions in Political Systems

Section 9

Section 10: The Role of Institutions in Political Systems

Section 11: The Role of Institutions in Political Systems

Section 12: The Role of Institutions in Political Systems

Section 13: The Role of Institutions in Political Systems

Section 14: The Role of Institutions in Political Systems

Section 15: The Role of Institutions in Political Systems

Section 16: The Role of Institutions in Political Systems

Section 17: The Role of Institutions in Political Systems

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Section 19: The Role of Institutions in Political Systems

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Section 25: The Role of Institutions in Political Systems

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II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Analog Communications

Branch: ECE

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. What is time domain description?
2. Write the applications of Vestigial Side Band Modulation.
3. What is wideband FM and Narrow band FM?
4. Define Solar Noise?
5. Explain super heterodyne working principle.

PART-B

Answer any FIVE questions of the following

5x10 Marks= 50Marks

1. Compare different modulation techniques of AM.(AM,DSB & SSB)
2. a) Derive the equation of DSB-SC and plot the waveforms?
b) Write about need for Modulation
3. Explain the frequency discrimination method and phase discrimination method of generating SSB wave and compare both methods.
4. a) Plot the spectrums of DSB & SSB?
b) Explain with neat diagram the operation of phase shift method of generation of SSB wave.
5. a) Derive the single tone time domain equation of FM.
b) What is the main difference between narrow band FM & wide band FM?
6. Define amplitude modulation and derive equation for AM wave.
7. Explain phase locked loop direct FM transistor, how PLL makes the direct FM signal generation more effective?
8. a) Explain with a neat block diagram PAM generation and detection.
b) Give comparison of PAM, PWM and PPM.

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II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Pulse And Digital CircuitsBranch: **Common to EEE & ECE**Time: **3 hours**Max. Marks: **60****PART – A****I. Answer ALL questions of the following****5x2Mark=10 Marks**

1. Explain Balanced Attenuator
2. Explain the negative clamper circuit.
3. List the applications of Bi stable multivibrator.
4. Realize 2 input AND gate under DTL family?
5. What are the various methods of generation sweep voltages?

PART-B**Answer any FIVE Questions of the following****5x10 Marks= 50Marks**

1. A 1kHz symmetrical square wave of $\pm 12V$ is applied to RC circuit having 1ms time constant. Calculate and plot the output for the RC configuration as
 - i) High pass circuit
 - ii) Low pass circuit
2.
 - a) Write a short note on Compensated attenuator
 - b) Obtain the response of a high pass RC circuit for exponential input.
3.
 - a) Write a short note on Clamping theorem.
 - b) Explain positive clamper with neat diagram and wave forms.
4. Explain how to eliminate hysteresis in the regenerative comparator.
5.
 - a) Write a short note on Schmitt Trigger
 - b) Write a short note on Collector Catching diodes.
6.
 - a) Write a short note on Triggering Techniques.
 - b) Write a short note on Commutating capacitors.
7.
 - a) Sketch the circuit of XOR gate using basic gates and explain its truth table.
 - b) Draw the diagram of OR gate using diode and transistors and explain the operation.
8. Explain the principle of synchronization in sweep circuits and describe how frequency division synchronization is done in Astable relaxation circuits.

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II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Human Values and Professional Ethics

Branch: ECE

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. Differentiate Values, Morals and Ethics.
2. Define honesty. Why it is important?
3. Are customs & Religions important in multinational companies? Substantiate.
4. 'Goal setting helps an individual to channelize his/her efforts and strengths'. Substantiate.
5. What is respect? On what basis, you respect others.

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. Discuss in detail of the following.
 - a) Integrity
 - b) Work Ethics
2. Critically examine the issues in professional ethics in the current scenario. List any five unethical practices in profession today and the methods being tried to curb them.
3. Write short notes on Gilligan's theory of cognitive development.
4. Discuss Models of Professional Roles?
5. a) As time is more valuable and important, how do you utilize it – Explain.
b) Write about Life skills.
6. Provide a detailed note on the role of positive thinking and integrity in building one's personality?
7. a) What are the needs of 'Sukh' & 'Suvidha'?
b) Write about Respect and Differentiation.
8. What are the stages of human and why is human interaction important in maintaining good human relationships?

