

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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

III B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Microprocessors and Micro controllers

Branch: EEE

Time: 3 hours

Max. Marks: 60

PART – A

Answer ALL questions of the following

5x2Mark=10 Marks

1. List the different types of interrupts in 8086?
2. Define Macros.
3. Write the CWR format of BSR mode in 8255 PPI.
4. List the interrupt sources in 8051
5. Define TMOD and TCON registers

PART-B

Answer any FIVE Questions of the following

5x10 Marks= 50Marks

1. Draw and explain the write cycle timing diagram for minimum mode 8086 system. [10M]
2. Write an assembly language program in 8086 to Sort numbers in ascending order. [10M]
3. Draw the block diagram of DAC and explain the functions of each block. [10M]
4. Discuss the following instructions with examples [10M]
(i) SJMP (ii) AJMP (iii) LJMP (iv) LCALL (v) ACALL
5. Write an ALP for traffic light controller in 8051. [10M]
6. a) Explain the concept of memory segmentation. [5M]
b) Write an ALP for the addition of a series of ten, 8-bit numbers. [5M]
7. a) Explain the methods of data communication [5M]
b) Write an ALP to add the two 8-bit numbers in 8051. [5M]
8. Answer any TWO Questions of the following 2x5 Marks= 10Marks
 - a) State and explain the different instruction formats of 8086.
 - b) What is meant by Key Debounce.
 - c) What is the difference between Overflow (OV) and Carry flag (C) in 8051?

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III B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: VLSI DesignBranch: **EEE****Time: 3 hours****Max. Marks: 60****PART-A****Answer ALL Questions of the following****5x2M=10M**

1. What is the importance of the SiO₂ layer, MOSFET and how to form SiO₂ layer on the wafer?
2. Write the equations for output conductance and transconductance
3. Draw the layout diagram for 2 input NAND gate using CMOS logic family?
4. Draw the inverter schematic using CMOS logic
5. Compare FPGA and CPLD

PART-B**Answer any FIVE Questions of the following****5x10M=50M**

1. Explain about oxidation and lithography in IC fabrication. [10M]
2. Draw and explain the I_{ds} - V_{ds} relationship for nMOS. [10M]
3. What is the need for design rules? Explain different types of design rules? [10M]
4. What are the constraints considered for proper choice of layers in Gate Level Design? [10M]
5. What is channel-less gate array? Explain. [10M]
6. (a) What is depletion MOS transistor? Explain [5M]
(b) Explain about latch-up in CMOS circuits [5M]
7. (a) Draw the flow chart for VLSI design flow [5M]
(b) Explain pseudo n-MOS NAND gate with neat diagram [5M]
8. **Write short notes on TWO of the following:** **2 x 5M= 10M**
(a) IC technologies (b) Pull-up to Pull-down ratios (c) Dynamic CMOS logic

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III B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Switch Gear And ProtectionBranch: **EEE****Time: 3 hours****Max. Marks: 60****PART-A**

Answer ALL Questions of the following

5x2M=10M

1. Why plain break oil circuit breakers have a low speed of circuit interruption?
2. What are the fundamental requirements of a relay?
3. What are the faults which may occur on an alternator?
4. What is effectively grounded system?
5. What is earthing screen?

PART-BAnswer any **FIVE** Questions of the following**5x10M=50M**

1. a) Describe the current interruption phenomenon for AC systems (5M+5M)
b) Discuss about the properties of SF₆ gas and relate the properties to the circuit breaker operation.
2. a) Discuss with necessary circuit diagram, the principle of an induction disc relay. What are the merits of induction cup relays over induction disc relays. (5M+5M)
b) Explain the function of an IDMT relay? Discuss in detail about its advantages and disadvantages.
3. a) A 6.6 kV, 10MVA star-connected alternator has a reactance of 2Ω/phase and negligible resistance. Merz-Price protection is used for protection of winding. The neutral grounding resistance is 5 Ω. If only 10% of the winding is to remain unprotected, determine the setting of the relay. (5M)
b) Explain the protection of three phase generator from loss of excitation. (5M)
4. Describe the solid grounding scheme for three phase systems. Also mention its advantages & disadvantages. (10M)
5. a) Describe the construction and explain the operation of ZnO(Zinc Oxide) type lightning arrestor and explain for what part of the circuit it would be most satisfactory (7+3)
b) Define impulse ratio and discuss it should be low or high for better protection.
6. a) Derive the general Torque equation of an electromagnetic relay. (5M)
b) Explain about under voltage relay. (5M)
7. a) What are the abnormal conditions in a synchronous generator? Explain which protection is necessary for each abnormal condition (5M)
b) Explain solid and resistance grounding (5M)
8. **Answer any TWO of the following** **2x5M=10M**
a) Vacuum Circuit Breaker b) Reactance Relay c) Solid grounding

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III B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018Subject: Electrical Measurements and InstrumentationBranch: **EEE**Time: **3 hours**Max. Marks: **60****PART-A**Answer **ALL** questions of the following**5 x 2 M=10 M**

1. Distinguish between Accuracy & Precision?
2. State the advantages and disadvantages of Anderson's Bridge.
3. What are the causes of errors in Current Transformers?
4. What are the main parts of the cathode ray tube?
5. Define Telemetry.

PART-BAnswer any **FIVE** questions of the following**5 x 10 M=50 M**

1. a) Explain with neat sketch multirange Voltmeter. [5M]
b) Explain moving Iron repulsion type Instrument. [5M]

2. A balanced 1 KHz bridge has the following configuration:

Arm AB: $R_1 = 1000\Omega$ in parallel with $C_1 = 0.053\mu F$ Arm BC: $R_2 = 1500\Omega$ in series with $C_2 = 0.53\mu F$

Arm CD: the unknown

Arm DA: Pure capacitance $C_4 = 0.265 \mu F$.

Determine R and L or C constants of the unknown. Draw the phasor diagram of the bridge at above frequency. [10M]

3. a) Give comparison between A.C & D.C. potentiometers. [5M]
b) Explain with suitable diagram how A.C potentiometer can be used for calibration of voltmeter. [5M]
4. a) Explain about wave analyzer [5M]
b) Explain Potentiometric type digital voltmeter. [5M]
5. a) What is Piezo electric transducer? Explain its operation. [5M]
b) Explain the working of i) Photovoltaic cells ii) Thermistors. [5M]
6. a) What are indicating type of instruments and give its examples. [5M]
b) Write short notes on Hay's bridge [5M]
7. a) Explain Silsbee's method of testing the CT. [5M]
b) What is Electronic counter? How it measure frequency? [5M]

8. Write short notes on any **TWO** of the following:**2*5 =10M**

- a) Spectrum Analyzer b) LVDT c) Kelvin multi cellular voltmeter

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TO: [Name] [Address] [City] [State] [Zip]
FROM: [Name] [Address] [City] [State] [Zip]

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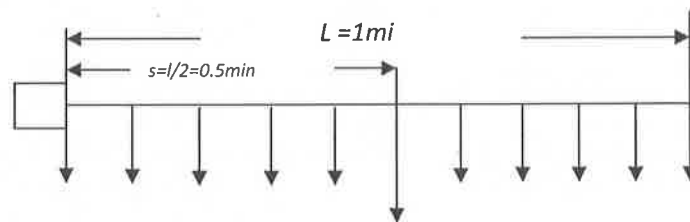
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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad**III B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2018**Subject: Electrical Distribution Systems & AutomationBranch: **EEE****Time: 3 hours****Max. Marks: 60****PART – A****Answer ALL questions of the following****5x2Mark=10 Marks**

1. Define utilization factor and connected load.
2. How the rating of a distribution substation found?
3. State the reasons for power loss in a 3-phase feeder.
4. Explain the concept of Line Sectionalizer in protection scheme
5. What is the need for distribution automation?

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

1. Illustrate the following: Diversity Factor, Load Diversity, Contribution Factor, Maximum demand. (10M)
2. An industrial area near a city was found to have a load density of 0.5MVA/KM^2 the total area was to be located between a rectangular strip of $8\text{KM} \times 4\text{KM}$. Determine suitable number of $33/11\text{KV}$ substations their capacity and feeder length. The loads are sending by 11KV feeders. (10M)
3. A single phase feeder circuit has total impedance $1+j3$ ohms, receiving end voltage is 2.4 kV and current is $30\angle -30^\circ$. Determine i) power factor of load ii) load power factor for which impedance is maximum. (10M)
4. a) Write short notes on driving factors of smart grid. (5M)
b) What are the merits and demerits of automatic line sectionalizers? (5M)
5. Illustrate the following terms related to the automation: automation switching controls, Ethernet and modem. [10M]



6. a) Write short notes on agricultural and industrial loads. (5M)
b) What are the factors governing the selection of site for substations? (5M)
7. a) Derive the voltage drop in single phase two wire laterals with ungrounded neutral. (5M)
b) Explain the recloser-to-fuse coordination in detail. (5M)
8. **Answer any TWO Questions of the following** **2X5M=10M**
 - a) What is meant by load forecasting? (5M)
 - b) Distinguish between radial and loop type primary feeders. (5M)
 - c) Illustrate the SLG faults in the distribution system. [5M]

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Time: 3 hours

Max. Marks: 60

PART-A

Answer ALL questions of the following

5 x 2 M=10 M

1. Define the nature of Managerial Economics.
2. What are the key terms used in break even analysis.
3. Differentiate features Perfect and Monopoly completion markets.
4. Identify any three differences between soletradership and partnership firms
5. Write journal entry for purchase of a Machinery from M/s, Girloskar Oil Machines Ltd. worth Rs.50.00 Lakhs and made advance payment in form of cash Rs.10000.00 and a bank cheque from The Karnataka Mercantile Bank Ltd. Rs. 4.90 Lakhs and remaining balance is on credit against erection of machinery.

PART-B

Answer any FIVE questions of the following

5 x 10 M=50 M

1. a) List different types of demand and draw graph for income demand? [3M]
 b) Determine Type of Elasticity if $P_1 = \text{Rs.}100/-$, $P_2 = 110/-$, $Q_1 = 1000$ Units, and $Q_2 = 950$ Units. [3M]
 c) Qualitative Methods of demand forecasting. [4M]
2. a) Differentiate Isoquants and Isocost curves?
 b) Depict graph for short run cost output relations covering AVC, AFC, ATC & MC curves and define fixed and variable costs
 c) Determine BEP volume and sales volume that is required to get a target profit of Rs. 20.00 Lakhs, if Fixed Cost is Rs.10.00 Lakhs, Per Unit is Rs.50/- and Variable Cost Per Unit is Rs.40/-.
3. a) Compare local, regional, national and international markets [3M+3M+4M]
 b) Compare features of perfect and monopolistic market structures.
 c) Differentiate Bundle Pricing, Block Pricing, Two Part Pricing and loss leader pricing methods.
4. a) Differentiate Private Limited Companies to that of Public Limited Companies in their features. [3M]
 b) Factors influencing working capital requirements [3M]
 c) Determine Pay Back Period if Initial Cost of Investment is Rs.2.00 Lakhs, Life of project is 5 Years, No Salvage Value, Cash flows are Rs.25000/-, Rs.75000/-, Rs..100,000/-, Rs.80000/- and Rs.50000/-. [4M]

5. From the following figures prepare Trading and Profit and Loss Account for the year ended 31st March, 2014 and a Balance Sheet as on that date:

Capital	86,800	Bad debts	700
Drawing	15,000	Bad debts provision	2,100
Investments	14,000	Sundry debtors	40,400
Cash	8,000	Sundry creditors	25,700
Rent and Insurance	3,000	Furniture	8,000
Opening Stock	36,600	Plant and machinery	50,000
Purchases	1,86,000	Salaries	11,000
Sales	3,05,000	Advertisement	4,400
Sales return	5,000	Goodwill	6,000
Wages	22,000	Freight	6,300
Carriage	4,200	Commission (Cr.)	1,000

Adjustments :

1. Stock on 31st march 2014 was Rs. 31,500
 2. Salary and wages for March 2010 were unpaid.
 3. Rent outstanding amounted to Rs. 600 and insurance unexpired amounted to Rs. 400.
 4. Commission amounting to Rs. 200 has been received in advance.
 5. Depreciate furniture and plant and machinery by 10% [10M]
6. a) What are the objectives, importance, uses and limitations of demand forecasting? [5M]
b) What are Assumptions and limitations of Break Even Analysis? [5M]
7. a) Write in brief about different pricing methods? [5M]
b) Enumerate the merits of partnership firm. [5M]
8. **Answer Any TWO questions of the following** **2 x 5 M=10 M**
Write short notes on: a) Ratio Analysis b) Break Even Analysis c) Monopolistic Competition