

Code : 13PS12E4

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester**ADVANCED DIGITAL SIGNAL PROCESSING
(Power Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION-I

1. State and prove the properties of DTFT.
2. Find the 4-point DFT of $x(n)=\{1,-1,2,-2\}$

SECTION-II

3. Draw the linear Transversal filter for the Wiener filter
4. Determine the coefficients $\{h(n)\}$ of a linear phase FIR filter of length $M=15$ which has a symmetric unit sample response and a frequency response that satisfies the condition

$$H_r\left(\frac{2\pi k}{15}\right) = \begin{cases} 1, & k = 0,1,2,3 \\ 0.4, & k = 4 \\ 0, & k = 5,6,7 \end{cases}$$

SECTION-III

5. Define CWT. State necessary conditions
6. Explain in detail about constant Q factor filtering interpretation of CWT.

SECTION-IV

7. Explain the architecture of TMS320C240 DSP controller.
8. Explain the memory and I/O spaces of TMS320C240 DSP controller.

SECTION-V

9. Explain in detail Branch instructions.
10. Explain the memory addressing modes used by the C2XX instruction set.

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

POWER SYSTEM DYNAMICS & STABILITY
(Power Systems)

Time : 3 hours

Max. Marks :60

Answer FIVE Questions. Choosing ONE Question from each section
All Questions carry equal marks

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SECTION - I

- 1 (a) Define Power System Stability. Explain in detail different types of stability.
- (b) A generator is supplying power to a load centre through a transmission line as shown in Figure 1. The Output power of the generator is increased slowly while maintaining the magnitudes of the voltages V_1 and V_2 constants at 1.0 p.u. by manual control. Find the steady state stability limit of power that can be transmitted. Assume $x_l = 0.2$, $x_l = 0.5$, $Z_T = j0.2$, $x_g = 0.4$ (all in p.u).

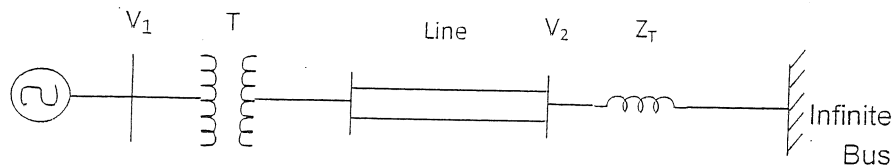


Fig. 1

- 2 (a) Discuss the analysis of Steady State Stability. Comment on the method.
- (b) Find the level of series compensation that will maximize the received power in a single machine system shown in Figure 2. The generator impedance is assumed to be $Z_g = R_g + jx_g$. Assume $E_g = E_b = 1.0$, $R_e = 0.1$, $x_e = 1.0$, $x_g = 0.1$, $R_g = 0.0$

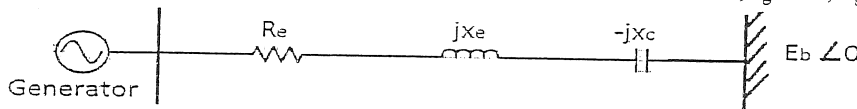


Fig. 2

SECTION - II

- 3 (a) What are the assumptions to be taken, while modeling the synchronous machine? What is the significance of damper winding? Starting from the flux linkages, derive the transformed flux linkage equations using park's transformation.
- (b) Explain the analysis of Steady State Performance of Synchronous machine as
(i) Unloaded Generator (ii) Loaded Generator

- 4 What are the advantages of Per Unit Quantities? What is the merit of choosing Park's transformation? Explain how stator and Rotor Base quantities are chosen in a synchronous machine.

SECTION – III

- 5 (a) Explain the function of each block of a general functional block diagram of excitation control system.
(b) Explain how the stable region of operation of the excitation system can be increased with the help of Excitation system stabilizer and Transient Gain Reduction?
- 6 (a) Derive the transfer function for separately excited DC generator exciter.
(b) Derive the state equations from transfer functions.

SECTION – IV

- 7 Discuss the application of model 1.1 to stator and rotor equation and hence derive the equivalent circuit of stator.
- 8 (a) Explain the procedure for computation of initial conditions
(b) A generator is connected to an infinite bus through an external impedance of jx_e . If $E_b=V_{to}=1.0$ p.u. $P_t=1.0$ p.u. Find the initial conditions. Assume $x_e=0.25$ p.u. The generator data: $x_d=1.8$, $x_q=1.7$, $x'_d=0.17$, $x'_q=0.23$, $R_a=0.0$, $T'_d=0.4$ sec, $T'_q=0.1$ sec, $H=4$ sec, $f_B=60$ Hz.

SECTION – V

- 9 (a) Explain the rotor mechanical equations and torque angle loop with the help of block diagram.
(b) Draw the system block diagram with rotor swing equations, flux decay and excitation system.
- 10 (a) Explain the function of power system stabilizer and the various control signals used as inputs to the stabilizer.
(b) Neglecting the exciter time constant, derive the stability criterion for the synchronous machine from the characteristic equation.

Code : 13PS1208

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**VOLTAGE STABILITY
(Power Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

SECTION - I

- 1 (a) Define the following i) Voltage Stability ii) Voltage collapse iii) Voltage Security
- (b) Write the relation between rotor angle stability and voltage stability?
- 2 Explain P-V and V-Q curves in voltage stability studies.

SECTION - II

- 3 Explain the significance of Reactive power capability of synchronous generator
- 4 Explain the system response to power impacts.

SECTION - III

- 5 Discuss in detail about super base case and load modeling.
- 6 Discuss about automatic control of mechanically switched capacitors with neat diagrams.

SECTION - IV

- 7 Discuss the different type of load models with their characteristics represented in power system.
- 8 Explain about LTC's and Distribution voltage regulator

SECTION - V

- 9 Explain about reactive power limitation in voltage stability of an EHV system
- 10 Discuss the relation between voltage and reactive power at a node in a power system.

M.Tech. II Semester

**REACTIVE POWER CONTROL
(Power Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

SECTION-I

1. Explain the importance of tap changing in transformers.
2. Write about the generation of harmonics in transformers.

SECTION-II

3. Write short notes on
 - (a) dynamic voltage stability,
 - (b) dynamics of load characters
4. What is static VAR Controller? Explain working of an SVC controller in detail.

SECTION-III

5. What meant by Planning of distribution system, Explain?
6. Explain the economic justification of reactive power planning.

SECTION-IV

7. Explain the reactive power requirements of lighting load in India.
8. How harmonics will be generated in lines? Explain.

SECTION-V

9. List out the various types of automatically controlled relays and explain the working principle of current sensing relay.
10. Briefly explain about the filters on LT & HT networks.

Code : 13PS1207

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**AI TECHNIQUES IN POWER SYSTEMS
(Power Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

- Explain about the following artificial neuron models
- 1 (a)
 - i. McCulloch-Pitts neuron model
 - ii. Integrate & Fire neuron model
 - iii. Spiking neuron model
 - (b) Compare Human and Computer in various aspects.
-
- 2 (a) What are the various learning mechanisms are available with neural network learning process?
Using Delta Learning Rule find the weight vectors to train the following input vectors, initial weight vectors are $X_1 = [1 \ -2 \ 0 \ -1]^T$, $X_2 = [0 \ 1.5 \ -0.5 \ -1]^T$, $X_3 = [-1 \ 1 \ 0.5 \ -1]^T$ and $W^1 = [1 \ -1 \ 0 \ 0.5]^T$ and its desired outputs are $d_1 = -1$, $d_2 = -1$ and $d_3 = 1$ respectively. Assume the activation function to be bipolar sigmoid function and learning rate coefficient is 0.1

SECTION - II

- 3 (a) Explain the Perceptron learning model with its schematic diagram.
 - (b) Explain the Single Layer Continuous Perceptron Training Algorithm (SCPTA) and give its summary.
-
- 4 Find the expression for finding the optimum weight value can be approached in a finite number of steps using the perceptron convergence theorem.

SECTION - III

- What are the different encoding techniques? Explain about the following encoding techniques with an example:
- 5 (a)
 - i. Binary Encoding
 - ii. Permutation Encoding
 - (b) Define Reproduction. Explain the following reproduction methods:

- i. Tournament selection
- ii. Roulette-Wheel selection

What is fitness function? When two uniform bars are connected by pairs at A and B supported at C shown in Fig. knowing the force, length of bars and its weight determine the equilibrium configuration of the system if friction at all joints are neglected.

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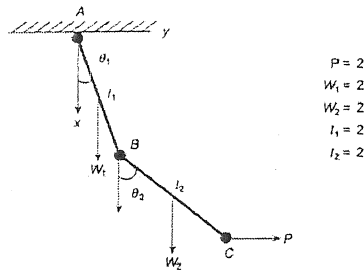


Fig. Two bar pendulum

SECTION - IV

- 7 (a) i. Union, Intersection, Compliment and Difference
 ii. Properties of Crisp sets
 (b) Explain the Fuzzy Cartesian product with an example.

Consider a set $P = \{P_1, P_2, P_3, P_4\}$ of four varieties of paddy plants, set $D = \{D_1, D_2, D_3, D_4\}$ of the various diseases affecting the plants and $S = \{S_1, S_2, S_3, S_4\}$ be the common symptoms of the diseases. Let R be a relation on $P \times D$ and S be a relation of $D \times S$.

8 (a)
$$\tilde{R} = \begin{bmatrix} 0.6 & 0.6 & 0.9 & 0.8 \\ 0.1 & 0.2 & 0.9 & 0.8 \\ 0.9 & 0.3 & 0.4 & 0.8 \\ 0.9 & 0.8 & 0.1 & 0.9 \end{bmatrix} \quad \tilde{S} = \begin{bmatrix} 0.1 & 0.2 & 0.7 & 0.9 \\ 1 & 1 & 0.4 & 0.6 \\ 0 & 0 & 0.5 & 0.9 \\ 0.9 & 1 & 0.8 & 0.2 \end{bmatrix}$$

Obtain the association of the plants with the different symptoms of the diseases using max-min composition

- (b) With the help of Venn diagrams prove De-Morgan's Laws for Crisp sets.
 Consider three set of inputs A, B and C

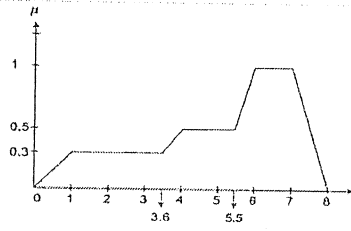
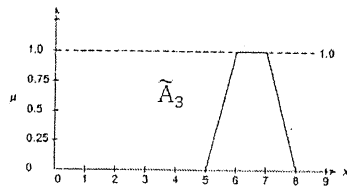
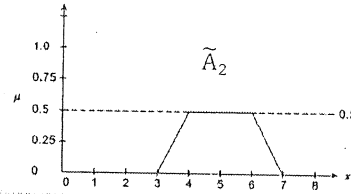
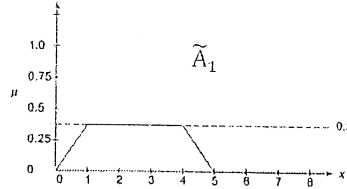
SECTION - V

- 9 (a) Explain about the Load frequency control using fuzzy logic.
 Let H = High, VH = very high, S = slow and Q (Quite slow) indicate, the associated fuzzy sets as follows.
 For $X = \{30, 40, 50, 60, 70, 80, 90, 100\}$, the set of temperatures and
 (b) $Y = \{10, 20, 30, 40, 50, 60\}$, the set of rotations per minute.
 $H = \{(70, 1) (80, 1) (90, 0.3)\}$ $VH = \{(90, 0.9) (100, 1)\}$
 $QS = \{(10, 1) (20, 0.8)\}$ $S = \{(30, 0.8) (40, 1) (50, 0.6)\}$
 Apply the fuzzy Modus ponens rule to deduce Rotation is quite slow given.

- i. If the temperature is high then rotation is slow.
- ii. The temperature is very high.

A_1 , A_2 , and A_3 are three sets as shown in Fig. and calculate the defuzzified value of fuzzy sets using the following methods Centriod method and Mean of Maxima method.

10



M.Tech. II Semester

**DSP PROCESSORS & ARCHITECTURE
(Digital Electronics & Communication Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

SECTION - I

- 1 A). Explain the procedure to design N^{th} order Butterworth filter.
B). With an example, explain the concepts of decimation & interpolation also mention their spectral components.
- 2 Write in brief about DFT & FFT transforms, show the relation between DFT & FFT transform.

SECTION - II

- 3 Explain the following A). A/D Conversion errors
B). Sources of errors in DSP implementation.
- 4 Explain about compensating filter, Dynamic range & precision with an example

SECTION - III

- 5 Explain the basic architectural features of TMS320C54XX processor along with neat sketch.
- 6 How the shifters are useful in DSP & Explain the functionality of barrel shifter.

SECTION - IV

- 7 Explain the following DSP algorithms A). Decimation filters
B). FIR Filters.
- 8 Explain 8point DIT-FFT with butterfly implementation having the scaling factor $\frac{1}{4}$ in TMS320C54XX processor.

SECTION - V

- 9 Write a short note on external Bus interfacing signals & Memory interface.
- 10 Explains in detail the synchronous serial interface of IC54XX processor with CODEC device.

Code: 13EC1203

M.TECH DEGREE EXAMINATION, AUGUST 2017

M.TECH. II SEMESTER

MODERN RADAR SYSTEMS

(Digital Electronics & communication Systems)

Time: 3 hours

Max. Marks: 60

Answer **FIVE** Questions, Choosing **ONE** Question from each section

All Questions carry equal marks

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SECTION- I

- 1 (a) Derive Radar Range equation and discuss the various parameters which improve the performance of radar.
(b) What is Radar cross section? How it varies in Rayleigh, optical & resonance regions?
- 2 (a) Explain about the effect of weather echoes on radar design & performance.
(b) Explain the concept of Receiver noise in RADAR.

SECTION – II

- 3 (a) What is the integration of radar pulses? Explain different methods of integration of Radar Pulse Train.
(b) Explain about Coherent detection and give its merits and demerits comparing with other detection methods.
- 4 (a) Explain about cell Averaging.
(b) What if false alarm? How does it depend on the Pulse repetition time of Radar.

SECTION – III

- 5 (a) Explain in detail about phase comparison mono pulse tracking system.
(b) Explain about sequential switching.

6 Write short notes on:

- (a) Measurement sensitivity (b) Error analyzing of radar.

SECTION - IV

- 7 (a) Explain about Bi-Static radar.
(b) What are the different types of surveillance radar?

8 Write short notes on

- (a) Height Finder (b) HF over the Horizon Radar.

SECTION – V

- 9 (a) Define Electronic Warfare system and write down its objectives.
(b) Write short notes on noise jamming of surveillance radar.
- 10 (a) Explain about tracking radar.
(b) Explain about denial of Range and Doppler data.

Code: 13EC1202

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**DIGITAL COMMUNICATION TECHNIQUES
(Digital Electronics & Communication Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

1. Explain about digital QAM modulation method with waveforms and derive the expression for energy of QAM signals also draw the signal space diagram for $M=16$?
2. Explain orthogonal expansions of signals and describe about Gram-Schmidt orthogonalization?

SECTION - II

3. What are the advantages of Optimum receiver and Explain about Matched Filter?
4. Derive the expression for Probability of error for M-ary PAM?

SECTION - III

5. Explain Simulation methodology of fading channels?
6. Explain statistical models for fading channels?

SECTION - IV

7. Explain pulse shaping for band limited channels?
8. What is meant by Equalization and describe zero forcing linear Equalization?

SECTION - V

9. Explain OFDM Carrier Synchronization and differentiate OFDM with FDM?
10. Explain about the digital modulation method which has least probability of error?

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester**ADAPTIVE SIGNAL PROCESSING
(Digital Electronics & Communication Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

- 1 (a) What is Adaptive System? Explain with an example
(b) Explain about gradient and minimum mean square error w.r.t adaptive linear combiner?
- 2 (a) What are characteristics of Adaptive System? Explain
(b) What is the alternative expression of gradient? Explain

SECTION - II

- 3 (a) What is Principle of Orthogonality? Explain in detail
(b) Explain the various methods for development of Adaptive filter theory?
- 4 (a) Explain clearly about filtering and smoothing?
(b) What is the function of Wiener Filter? How to calculate the MMSE produced by the wiener filter?

SECTION - III

- 5 (a) Write an expression for this performance surface? A single weight performance surface has the parameters $\lambda = 0.1$, $\xi_{\min} = 0$ and $w^* = 2$.
(b) Geometrical significance of Eigen vectors and Eigen values.
- 6 (a) Derive a discrete form of Newton's algorithm and compute the algorithm with difference instead of derivatives
(b) The univariable performance surface is given by $\xi = 0.4w^2 + 4w + 11$
What range of values of the convergence parameter will provide an overdamped weight adjustment curve?

SECTION - IV

- 7 (a) Give the structure and operation of the least mean square Algorithm?
(b) What are the applications of least mean square Adaptation Algorithm?
- 8 (a) Discuss about least mean square Adaptation Algorithm?
(b) Explain stability and performance of least mean square Algorithm?

SECTION - V

- 9 (a) With the help of block diagram explain the Kalman filtering?
(b) Explain the basic idea to develop Kalman filtering?
- 10 (a) Explain recursive minimum mean square estimation for scalar random variables?
(b) Write the properties of recursive minimum mean square estimation?

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**Micro – Computer System Design
(Digital Electronics & Communication Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

1. (a) Explain the following instructions of 8086 microprocessor.
(1) CBW (2) CMPSW (3) AAA (4) LOOPNZ (5) XLAD
- (b) Explain the memory segmentation process of 8086 processor in detail.
- 2 (a) Explain protected virtual address mode of 80286 .
- (b) Draw and explain 8086 architecture.

SECTION – II

3. (a) Explain the physical address formation in PVAM of 80386.
- (b) Explain the use of each of the following registers in 80386.
(1) Segment descriptor registers (2) System address registers.
4. Explain the Architecture of 80486 microprocessor.

SECTION – III

5. (a) Describe the superscalar organization of Pentium processor with neat diagram.
- (b) Explain the branch prediction logic and give the use of branch target buffer in Pentium processor.
6. (a) Explain special Pentium registers
- (b) Compare dual processor and hyper threaded processor in detail.

SECTION – IV

7. (a) Explain the concept of programmed I/O and interrupt driven I/O
- (b) State the need of DMA and explain memory to memory data transfer scheme in DMA
8. What are the means of giving priority to an interrupt system? Explain in them detail.

SECTION – V

9. Explain different types of data format for arithmetic coprocessor.
10. (a) Convert the decimal number 100.25 to single precision (32 bit) floating point number. List all the conversion steps.
- (b) Draw and explain the internal structure of 8087 arithmetic coprocessor.

M.Tech. II Semester

**WEB TECHNOLOGIES
(Computer Science & Engineering)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

- 1 (a) Explain in detail about DOM.
(b) Write short notes on objects in Java Script
- 2 (a) Create a web page for your class time table using tables in HTML.
(b) Write a program for finding factorial of a given number using java script

SECTION - II

- 3 (a) Explain the lifecycle of a servlet in detail.
(b) Write short notes on reading servlet parameters.
- 4 (a) Describe in detail about session tracking.
(b) Discuss on any four HTTP request methods.

SECTION - III

- 5 (a) Describe the problem with Servlet.
(b) Explain the lifecycle of JSP.
- 6 (a) Describe about conditional processing.
(b) Write short notes on implicit JSP objects.

SECTION - IV

- 7 Explain in detail about displaying values using an expression to set an attribute.
- 8 (a) Write short notes on declaring variables in JSP.
(b) Describe about users passing control and data between pages.

SECTION - V

- 9 Differentiate between ASP and ASP.Net with examples.
- 10 Write a program to validate a form in ASP.NET.

CODE : 13CS1203

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. Second Semester

**SOFTWARE ARCHITECTURE
(Computer Science & Engineering)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

1. Define software architecture .Explain in detail about the status of the architecture.
2. Describe the architecture business cycle. Explain about the features of good architecture.

SECTION - II

3. What are Heterogeneous architectures? Explain detail about it.
4. Write a short notes on interpreter architectural styles.

SECTION - III

5. “A Unified process project organizes the work and iterations across different phases” justify.
6. Discuss client server architecture sing Lib WWW.

SECTION - IV

- 7.. How to finalize the architecture .Architectural style and architectural design of a specific system
8. Explain how to formalize architectural styles with example.

SECTION - V

9. How to create products and evaluate a product line for specific software systems.
10. Describe the architecture and legacy systems with example.
Explain the steps to achieve architecture.

Code :13CS1202

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**SERVICE ORIENTED ARCHITECTURE
(Computer Science & Engineering)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

1. (a) What is SOA? Explain SOA architecture with neat diagram.
(b) What is a Key component? Explain the Key components of SOA.
- 2 Explain in detail about Patterns for SOA.

SECTION – II

3. (a) Explain the various Enterprise Applications in SOA.
(b) Explain SOA Programming Models in detail.
4. (a) Explain about XML WS for .NET.
(b) Write about SOAP.

SECTION – III

5. (a) Discuss the various technologies of SOA.
(b) Explain about Stakeholder Objectives.
6. Explain in detail about SOA Development.

SECTION – IV

7. (a) Explain about SOA Strategy and Governance?
(b) Explain about SOA Best practices.
8. Explain about Security in Web Service Framework.

SECTION – V

9. What is a Transaction Processing? Explain.
What is a Transaction Specification? Explain.
10. Explain in detail about SOA in Mobile.

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**DATA MINING & DATA WAREHOUSING
(Computer Science & Engineering)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

SECTION - I

1. (a) Explain detail about Data mining functionalities.
(b) Briefly discuss about data integration.
2. (a) Explain various data reduction techniques.
(b) What are techniques for concept hierarchy generation for different types of data?

SECTION - II

3. Explain in detail about the Architecture and implementation of data warehouse.
4. Discuss about Data mining Query language and Graphical user interface.

SECTION - III

5. (a) How is class comparison performed?
(b) Write an algorithm for attribute oriented induction.
6. (a) How can we perform attribute relevant analysis for concept description? Explain.
(b) Write about mining Descriptive statistical measures in large databases.

SECTION - IV

7. Explain in detail about classification by Back Propagation.
8. Write short notes on
 - (a) Naive Bayesian classification.
 - (b) Tree pruning.

SECTION - V

9. (a) What is partitioning method in clustering? Explain K-Means algorithm.
(b) Explain in detail about outlier analysis.
- 10 (a) What is Grid based clustering? Describe any one grid based clustering algorithm.
(b) Explain about Mining Time series and Sequence data.

Code: 13CS1205

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester
GRID COMPUTING
(Computer Science & Engineering)

Time : 3 hours

Max. Marks :60

Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks

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SECTION - I

- 1 Explain briefly about grid infrastructure
- 2 List out the challenges and applications of OGSA

SECTION - II

- 3 What is Grid ICE? Describe its architecture
- 4 Define Network Weather Service. Describe its architecture with the functionality of each component

SECTION - III

- 5 How X.509 certificate hierarchy can help in enforcing confidence? Explain.
- 6 Discuss in brief the resource management systems Condor and SGE

SECTION - IV

- 7 Classify Structure Data. What are the Challenges in data management
- 8 Give the architecture of first generation of portals. List the toolkit of the same

SECTION - V

- 9 Explain the features of next generation grid
- 10 What is gLite? Describe its architecture with the functionality of various components

Code : 13PS1205

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**ADVANCED POWER SYSTEM PROTECTION
(Power Systems)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

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SECTION - I

- 1 a Write the merits and demerits of static relays. 6
- b Write the differences between static relays and electromagnetic relays. 6
- 2 Draw the block diagrams of instantaneous and definite time static relays and explain their operation. 12

SECTION - II

- 3 a Discuss the duality relationship of phase and amplitude comparator with an example 6
- b Derive the generalized equation for two input phase comparator 6
- 4 a Explain about coincidence type phase comparator with diagram also explain the method of measurement of period of coincidence. 8
- b Derive the General Equation of Amplitude comparator 4

SECTION - III

- 5 What are the various types of static over current relays? Explain their area of applications. 12
- 6 The current rating of an over current relay is 5 A. PSM=2, TMS= 0.3, CT ratio 400/5. Fault current= 4000 A. Determine the operating time of relay. At TMS= 1, 12

operating time at various PSM are:

PSM	2	4	5	8	10	20
OPERATING TIME(SEC)	10	5	4	3	2.8	2.4

SECTION - IV

- 7 Explain Duo bias transformer differential protection 12
- 8 Describe about analysis of static differential relays 6
Explain briefly about Harmonic restraint relay. 6

SECTION - V

- 9 Draw the basic block schematic diagram of interface for directional relay and also draw the flow chart for the microprocessor based directional relay 12
- 10 With a neat diagram explain Microprocessor based over current relay. 12

Code: 13EC1201

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. Second Semester

WIRELESS COMMUNICATIONS

(Digital Electronics and Communication Systems)

Time: 3 Hours

Max Marks: 60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

** * **

SECTION - I

1. Distinguish between 2G and 3G cellular networks in all respects?
2. Write about Personal Area Networks?

SECTION - II

3. Derive the expression for impulse response model of a multipath channel?
4. What is fast fading and how to avoid it?

SECTION - III

5. What are diversity techniques and explain Space diversity techniques?
6. How to measure the performance of a Rayleigh fading channel?

SECTION - IV

7. Explain soft handoff strategies?
8. How to avoid ISI using spreading codes?

SECTION - V

9. Discuss the frequency and channel specifications of IS-95 CDMA?
10. Write about capacity of frequency selective fading channel?

Code : 13CS1201

M.TECH. DEGREE EXAMINATION, AUGUST 2017

M.Tech. II Semester

**ADVANCED COMPUTER NETWORKING
(Computer Science & Engineering)**

Time : 3 hours

Max. Marks :60

*Answer FIVE Questions, Choosing ONE Question from each section
All Questions carry equal marks*

* * *

SECTION - I

- 1 With a neat sketch explain the Layered structure of OSI model
- 2 Explain the difference between connection oriented and connection less service

SECTION - II

- 3 What for Framming ? Explain the different framing techniques
- 4 Explain Sliding Window protocols in detail

SECTION - III

- 5 With a suitable example explain how Distance Vector Routing Algorithm operates
- 6 Explain the different error reporting messages of ICMP

SECTION - IV

- 7 Explain the design issues of distributed systems
- 8 Explain message passing in RPC and RMI

SECTION - V

- 9 Explain the different types of Access Control mechanisms
- 10 What is the advantage of Public Key Encryption ? Explain RSA Algorithm with a suitable example.

