Code: 1G372

IV B.Tech. I Semester Supplementary Examinations November 2018
Digital Signal Processing
(Electrical and Electronics Engineering)

Max. Marks: 70   Time: 3 Hours

Answer any **five** questions
All Questions carry equal marks (**14 Marks** each)
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1. a) State and Prove the following properties of the discrete time Fourier transform
        (i) Time shifting (ii) Time Convolution

    b) Determine the values of power and energy of the following signals. Find whether the signals are power, energy or neither energy nor power signal $X(n) = (1/3)^n u(n)$

2. a) Discuss about Discrete Fourier Series representation of any periodic sequence

    b) Evaluate the circular convolution of the following sequences using discrete Fourier transform $x(n) = \{1,1,2,1\}$ and $h(n) = \{1,2,3,4\}$

3. a) Explain steps required in radix-2 DIF-FFT algorithm

    b) Compare the radix-2 DIT and DIF-FFT algorithms

4.   Draw the direct Form-I, Direct Form-II and Cascade structures for the system described by the difference equation
        $y(n) = - 0.1y(n-1) + 0.2y(n-2) + 3x(n) + 3.6x(n-1) + 0.6x(n-2)$

5.   Design a digital bandpass Butterworth filter using Bilinear transform with the following specifications
        Sampling frequency F=8KHz
        $_p$ = 2dB in the passband 800Hz   f   1000Hz
        $_s$ = 20dB in the stopband   0   f   400Hz and 2000Hz   f

6. a) Describe the characteristics of FIR filters

    b) Discuss about the comparison of all windowing techniques

7. a) Explain sampling rate conversion by an arbitrary factor with neat sketch

    b) Draw the various structures for sampling rate conversion technique

8.   Explain the spectral analysis of non-stationary signals
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R-11 / R-13

Code: 1GA71

IV B.Tech. I Semester Supplementary Examinations November 2018
Management Science
(Common to EEE & ECE)

Max. Marks: 70   Time: 3 Hours

Answer any **five** questions
All Questions carry equal marks (**14 Marks** each)
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1.	a)	Discuss line, line and staff and matrix organizations?	7M
	b)	Explain what do you understand 'managerial objectives.' give any four managerial objectives?	7M
2.	a)	Discuss the duties of purchase manger in detail?	7M
	b)	Classify inventories? Explain with examples?	7M
3.	a)	What is new product design? Discuss the stages of a new product?	7M
	b)	Differentiate productivity and production?	7M
4.	a)	List out the Functions of Human Resource Management? Explain?	7M
	b)	What are the duties of personal manager ?	7M
5.	a)	What is crashing of a network? discuss with your own example?	7M
	b)	Describe Gantt chart and milestone charts?	7M
6.	a)	What is a strategic business unit ? discuss the role and relevance in corporate planning?	7M
	b)	Discuss the Significance of corporate goals?	7M
7.	a)	Identify and discuss the stages in the process of strategy formulation and implementation?	7M
	b)	Discuss in brief of the following. (i) JIT (ii) Supply chain management	7M
8.	a)	What are the normative ethical theories? Discuss?	7M
	b)	Explain the Characteristics of ethical organization?	7M

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IV B.Tech. I Semester Regular Examinations November 2018
Renewable Energy Sources
(Electrical & Electronics Engineering)

Max. Marks: 70   Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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UNIT–I

1. a) Compare the advantages and disadvantages between Conventional with Non-conventional energy sources.   7M

   b) Explain about the solar radiation and its measuring instruments.   7M

OR

2. a) Briefly describe the impact of solar power on environment.   7M

   b) With neat sketches, explain briefly about different measuring instruments and their applications.   7M

UNIT–II

3. a) Briefly explain about the various types of Solar Collectors with their collector efficiency.   7M

   b) With a neat sketch, explain the working of solar pond.   7M

OR

4. a) Name the various types of Solar water heating systems and explain briefly about each of them.   7M

   b) Compare different types of solar collectors.   7M

UNIT–III

5. a) List out the various factors considered for the site selection of wind energy extraction through wind turbine.   7M

   b) Describe the various methods of ocean thermal electric power generation.   7M

OR

6. Briefly explain the applications of Wind Energy and also derive the expression for power for WECS.   14M

UNIT–IV

7. a) What are the Advantages and Disadvantages of biogas generation?   7M

   b) Describe the characteristics of the materials used for different components of a power plant using geothermal energy.   7M

OR

8. a) With a neat sketch, explain the working principle and operation of geothermal generation.   7M

   b) Explain the difference between fixed dome type and floating drum type biogas plant.   7M

UNIT–V

9. a) Explain the need of Direct Energy Conversion.   7M

   b) Compare Thermo-electric generators with MHD generators.   7M

OR

10. With a neat sketch, explain the principle of operation of MHD generators.   14M

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Code: 1G47C

R-11 / R-13

IV B.Tech. I Semester Supplementary Examinations November 2018
Soft Computing Techniques
(Electrical and Electronics Engineering)

Max. Marks: 70
Time: 3 Hours

Answer any **five** questions
All Questions carry equal marks (**14 Marks** each)
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1. a) Compare Artificial neuron model and Biological neuron model

   b) List the characteristics of ANN

2. a) Define Perceptron learning rule

   b) List the applications of Perceptron Neural Network

3. a) Explain about radial basis function network

   b) List the applications of RBF

4. Summarize the training algorithm used in Hetero associative memory Neural network

5. Explain the properties and operations of the classical set

6. a) How is a canonical rule formed based on the human knowledge

   b) Discuss fuzzy prepositions

7. a) Explain fitness function and encoding

   b) If x_i^L =2 and x_i^U =17 find the value of 4–bit string for the decoded value of the string (1010)

8. Develop the flowchart of ANN for Power flow solution

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R-11 / R-13

Code: 1G272

IV B.Tech. I Semester Supplementary Examinations November 2018
Switch Gear and Protection
(Electrical and Electronics Engineering)

Max. Marks: 70   Time: 3 Hours

Answer any **five** questions
All Questions carry equal marks (**14 Marks** each)
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1.   Explain different methods of arc extinction in a circuit breaker

2.   Explain the construction of vacuum circuit breaker and discuss the behavior of electric arc in vacuum circuit breaker with the help of neat diagram.

3.   With a neat diagram explain the working of induction type differential over current relay?

4.   Describe microprocessor-based relay with the help of block diagram.

5.   A 40 MVA, 3-phase 220/132 kV transformer is star/delta connected. Find the CT ratios on the two sides of the transformer for differential protection of the transformer. Assume the fault is more than 115% of full-load current and relay setting current is 5 Amp.

6.   Discuss three zone protection scheme using Mho relay to protect transmission lines.

7.   What is the difference between reactance and resonant grounding systems? What are the grounding practices?

8. a)   What are the causes of over voltages and travelling waves in transmission lines?
    b)   What are the methods adopted to protect the power system against over voltages?

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