SVM Institute of Technology, Bharuch

Department of Electrical Engineering

Syllabus: Mid Semester Examination (Even semester 2018-19)

BE – II (4^{th} Semester) EE

Name of Faculty: Chirayu R. Patel

Subject Code: 2140910 **Subject Name:** Digital Electronics

Sr. No.	Unit	Topics
1	Unit 1	**Number Systems:** Decimal, Binary, octal, and hexa-decimal number systems, binary arithmetic. Number base conversion, Complements **Codes**: Binary code, excess-3 code, gray code, error detection and correction codes.
2	Unit 2	**Logic families**: Positive logic and Negative Logic, AND, OR, NOT,NAND,NOR, X-OR GATE, INHIBIT CIRCUIT, Significance and type like TTL, CMOS, interface with different logic families, application relevant information, electrical characteristics
3	Unit 3	**Boolean Algebra:** Introduction, Logic Operators, Postulates and theorems, properties –Product of Sums and Sum of Products– Karnaugh Map method – Two, three, four, five variable K-maps, Converting Boolean expressions to Logic and Vice versa, NAND and NOR implementation – Don't-Care conditions – The tabulation method
4	Unit 4	**Combinational Logic Circuit:** Half and full Adder, Half and full Subtracter, Binary parallel adder, BCD Adder, Decimal adder, Magnitude comparator – Encoders & Decoders – Multiplexers–De-multiplexer
5	Unit 5	**Flip Flops and Sequential Logic and Circuits:** Basic difference between Combinational logic and Sequential logic – Flip-Flops like S-R , J-K, D, Master Slave– Triggering of (level and Edge) flip-flops – Asynchronous and Synchronous Inputs –Excitation tables for flip-flops

Text Book(s):

1) Fundamentals of Digital Electronics by A. Anandkumar, PHI
2) Digital Electronics Principal and Integrated Circuits by Anil K. Maini, WILEY-INDIA
3) Digital Logic and Computer Design by M. Morris Mano, PHI

SVM Institute of Technology, Bharuch

Department of Electrical Engineering

Syllabus: Mid Semester Examination (Even semester 2018-19)

BE – II (4^{th} Semester) EED

Name of Faculty: Meghna Vaghela

Subject Code: 2141005 **Subject Name:** Signal and System

Sr. No.	Unit	Topics
1	Unit 1	Basic definitions, Classification of signals and systems. Signal operations and properties. Basic continuous time signals, signal sampling and quantization, discretization of continuous time signals, discrete time signals. Basic system properties, Representation of digital signals. Case study of different signals form communication and biomedical field
2	Unit 2	Impulse response characterization and convolution integral for CT- LTI system, signal responses to CT-LTI system, properties of convolution, LTI system response properties from impulse response.
3	Unit 3	The z-Transform, Convergence of z-Transform, Basic z-Transform, Properties of z-Transform, Inverse z-Transform and Solving difference equation using z-Transform

Reference Books:

1. Signals and Systems by Alan V. Oppenheim, Alan S. Wilsky and Nawab, Prentice Hall
2. Signals and Systems by K. Gopalan, Cengage Learning (India Edition)
3. Signals and Systems by Michal J. Roberts and Govind Sharma, Tata Mc-Graw Hill Publications
4. Signals and Systems by Simon Haykin and Bary Van Veen, Wiley- India Publications
5. Linear Systems and Signals by B.P.Lathi, Oxford University Press
6. Signal, Systems and Transforms by Charles L. Philips, J. M. Parr and E. A. Riskin, Pearson Education
7. Digital Signal Processing Fundamentals and Applications by Li Tan, Elsevier, Academic Press
8. Signal and Systems By Anand Kumar, 3rd Edition, PHI

SVM Institute of Technology, Bharuch

Department of Electrical Engineering

B.E. Sem 4 (Electrical)

Academic Year : 2018-19

Syllabus for Mid/ Remid Examination(Even sem 2018-19)

Name Of Faculty : Nilam K. Patel

Subject : Electrical Power Generation (2140908)

Sr No.	Chapter	Content
1	**Steam power station**	Schematic arrangement of **TPP**
		advantages and disadvantages, choice of site for **TPP**
		Working of **TPP** with video, efficiency of steam power station,
		Main components like Boiler, Turbine, Generator
2	**Hydro power station**	Schematic arrangement
		Terms related to hydro plant, components of hydro plant Hydro turbine
		Advantages and disadvantages, choice of site constituents of hydro power plant,. Environmental aspects for selecting the sites and locations of hydro power stations, Auxiliaries
3	**Tariff and Economic aspects in power generation**	Terms commonly used in system operation
		Various factors affecting cost of generation
		Load curves, load duration curves, Connected load, maximum load, Peak load, base load and peak load power plants, load factor, Plant capacity factor, Plant use factor, Demand factor, diversity factor, Cost of power plant
		Different types of Tariffs
	Power Generation by	Need of Renewable energy

4	**Non Conventional Energy Sources**	Fossil fuel based systems Impact of fossil fuel based systems Non-conventional energy – seasonal variations and availability
5	**Photovoltaic Power Conversion systems**	**Solar radiation spectrum** • Radiation measurement. • Applications of solar thermal systems ➢ Heating ➢ Cooling ➢ Drying ➢ Distillation ➢ Power generation
		Solar Photovoltaic(SPV) systems ➢ Operating principle ➢ Photovoltaic cell concepts ➢ Types of solar cells, fabrication of SPV cells ➢ Cell, module, array (Series and parallel connections)
		Solar Photovoltaic(SPV) systems (contd..) ➢ SPV system components and their characteristics, applications ➢ Block diagram of general SPV system ➢ Battery sizing and Array sizing
		Applications of Solar Photovoltaic systems ➢ Battery charging ➢ Pumping ➢ Lighting
		Green Building (Solar – thermal, Solar – PV) ➢ Sizing residential systems ➢ Batteries and Inverter
		Present Status of PV in India Governmental incentives,
		Numerical on PVS

Reference Books:

1. A Text book of Power System Engineering, A Chakrabarti, M. L Soni, P. V. Gupta, U. S. Bhatnagar, Dhanpat Rai Publication

2. Renewable Energy Technologies, Solanki, Chetan S. , PHI Learning, New Delhi, 2011

3. Wind Power Technology, Earnest, Joshua, PHI Learning, New Delhi, 2013

4. Renewable Energy Sources for Sustainable Development, N.S. Rathore and N. L. Panwar, New India Publishing Agency, New Delhi

5. Wind Power in Power System, Thomas Ackermann, John Willey &Sons, 2005

6. Renewable Energy Resources, J. Twidell and T. Weir, E & F N Spon Ltd, London, 1999

7. Electric Power Generation: Transmission and Distribution, S. N. Singh, PHI Learning, New

8. Electrical Power, Dr. S.L. Uppal

SVM Institute of Technology, Bharuch

Department of Electrical Engineering

Syllabus: Mid Semester Examination (Even semester 2018-19)

BE – II (4^{th} Semester) Electrical

Name of Faculty: Payal Patel

Subject Code: 2140909 **Subject Name:** Field Theory

Sr. No.	Unit	Topics
1	Vector Analysis	Scalars and Vectors, Vector Algebra, The rectangular co-ordinate system, Vector components and unit vectors, The vector field, The dot product, The cross product, Circular cylindrical coordinates, Spherical co-ordinate system.
2	Coulomb's law and Electric Field Intensity	The experimental law of Coulomb, Electric field intensity, Field due to a continuous volume charge distribution, Field of a line charge, Field of a sheet charge.
3	Electric Flux Density, Gauss' law and Divergence	Electric flux density, Gauss' law, Application of Gauss' law: some symmetrical charge distributions, Application of Gauss' law to differential volume element, Divergence, Maxwell's first equation, The divergence theorem.
4	Dielectrics and capacitance	The nature of dielectric materials, Boundary conditions for perfect dielectric materials, Capacitance, Several capacitance examples, Capacitance of a two wire line
5	The Steady Magnetic Field	Biot Savart law, Ampere's circuital law, Curl, Stoke's theorem, Magnetic flux and magnetic flux density, The scalar and vector magnetic potentials, Derivation of steady magnetic field laws.

Text Book(s):

1) **Engineering Electromagnetics by W.H. Hayt and J A Buck, Tata McGraw Hill Publications**

SVM Institute of Technology, Bharuch

Department of Electrical Engineering

Syllabus: Mid Semester Examination (Even semester 2018-19)

BE – II (4^{th} Semester) Electrical

Name of Faculty: Payal Patel

Subject Code: 2140906 **Subject Name:** AC Machines

Sr. No.	Unit	Topics
1	POLYPHASE INDUCTION MOTOR	Construction, types, working principle, rotating magnetic field ▪ No-load test, blocked rotor test, equivalent circuit, phasor diagram, circle diagram ▪ Starters ▪ Effects of rotor resistance ▪ Methods of speed control ▪ Variable voltage variable frequency drive ▪ Magnetic levitation ▪ Cogging and crawling ▪ Testing as per IS ▪ Energy efficient motors
2	INDUCTION GENERATOR	▪ Principle of operation ▪ Application ▪ Power factor control
3	1-Ø AC MOTORS	▪ Double field revolving theory ▪ Starting and running performance ▪ Equivalent circuit ▪ Split phase, resistance start, capacitor start, capacitor start run induction motor, shaded pole, fractional horse power motors

Text Book(s):

1) Artificial Intelligence By Elaine Rich And Kevin Knight (2nd Edition) Tata Mcgraw-Hill
2) Artificial Intelligence: A Modern Approach, Stuart Russel, Peter Norvig, PHI