

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY
Mid Semester Examination-II Syllabus
Semester-I

Name of Subject: PPS
Subject Code : 3110003

Unit No.	Topic Name
4	Array & String: string, string storage, Built-in-string functions
5	Functions: Concepts of user defined functions, prototypes, definition of function, parameters, parameter passing, calling a function, recursive function, Macros, Pre-processing
6	Recursion: Recursion, as a different way of solving problems. Example programs, such as Finding Factorial, Fibonacci series, Ackerman function etc. Quick sort or Merge sort.
7	Pointers: Basics of pointers, pointer to pointer, pointer and array, pointer to array, array to pointer, function returning pointer

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Name of Subject:ENGLISH
Subject Code :3110002

<u>Unit No.</u>	<u>Topic Name</u>
2	Phonetics <ul style="list-style-type: none">- IPA- Transcription- Introduction to different Accents
5	Nature and Style of Writing <ul style="list-style-type: none">- Describing- Defining- Classifying
6	Writing Practices <ul style="list-style-type: none">- Comprehension- Precis Writing- Letter Writing- Email Etiquette- Abstract- Memo Writing

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Name of Subject: BASIC ELECTRICAL ENGINEERING
Subject Code :3110005

Unit No.	Topic Name
3	Transformers Magnetic materials, BH characteristics. Construction and working principle of single phase transformer. Ideal and practical transformer. Auto-transformer and its applications.
4	Electrical Machines Generation of rotating magnetic fields. Construction and working of following machines: Three-phase induction motor Single-phase induction motor. Separately excited DC motor. Synchronous generators.
5	Electrical Installations Switch Fuse Unit (SFU), MCB, ELCB, Types of Wires and Cables. Earthing – Types of earthing and its importance. Types of Batteries, Important Characteristics for Batteries. Elementary calculations for energy consumption. Basics of power factor improvement

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Name of Subject :BASIC MECHANICAL ENGINEERING
Subject Code :3110006

Unit No.	Topic Name
4	Properties of Steam: Steam formation, Types of steam, Enthalpy, Specific volume, Internal energy and dryness fraction of steam, use of steam tables, steam calorimeters
5	Heat Engines: Heat engine cycle and Heat engine, working substances, Classification of heat engines, Description and thermal efficiency of Carnot; Rankine; Otto cycle and Diesel cycles
8	Pumps: Types and operation of Reciprocating, Rotary and Centrifugal pumps, Priming
9	Air Compressors: Types and operation of Reciprocating and Rotary air compressors, significance of Multistaging
11	Couplings, Clutches and Brakes: Construction and applications of Couplings (Box; Flange; Pin type flexible; Universal and Oldham), Clutches (Disc and Centrifugal), and Brakes (Block; Shoe; Band and Disc)

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Name of Subject :ENVIRONMENTAL SCIENCE

Subject Code :3110007

Unit	Topic Name
2	ENVIRONMENTAL POLLUTION E-waste: Generation and management
3	GLOBAL ENVIRONMENTAL ISSUES Sustainable Development, Climate Change, Global Warming and Greenhouse Effect, Acid Rain, Depletion of Ozone layer, Carbon Footprint, Clean Development Mechanism (CDM), International Steps for Mitigating Global Change
4	BASIC CONCEPT OF GREEN BUILDING AND SMART CITIES Green Building: Introduction, Objectives, Fundamental Principles, Benefits of Green Building, Examples of Green Building Smart Cities: Concept
5	CONCEPT OF 4R's Principles, Application of 4R's

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Name of Subject :Physics (Hard Group)
Subject Code :3110011

UNIT 2	WAVES, MOTION AND ACOUSTICS Simple Harmonic motion Free, forced, resonance, damped and undamped vibration Damped harmonic motion Force vibration and amplitude resonance Velocity resonance and energy intake Wave motion, transverse and longitudinal vibration Sound absorption and reverberation Sabine's formula and usage (excluding derivation) Acoustic of building
UNIT 3	ULTRASONIC AND NON DESTRUCTIVE TESTING (NDT) Ultrasonic waves Properties of ultrasound Production of ultrasonic waves : Piezoelectric and Magnetostriction method Detection of ultrasound Application of ultrasound Introduction of NDT Advantages of NDT NDT through ultrasound

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Name of Subject :ENGINEERING GRAPHICS & DESIGN
Subject Code :3110013

<u>Unit No.</u>	<u>Topic Name</u>
1	Introduction to Engineering Graphics: Use of plane scales, Diagonal Scales and Representative Fraction
2	Loci of Points: Path of the points moving on Simple mechanisms, Slider crank mechanism, Four bar mechanism
5	Projections of Planes: Projections of planes (polygons, circle and ellipse) with its inclination to one reference plane and with two reference planes, Concept of auxiliary plane method for projections of the plane
6	Projections of Solids, Section of Solids: Classification of solids. Projections of solids (Cylinder, Cone, Pyramid and Prism) along with frustum with its inclination to one reference plane and with two reference planes, Section of such solids and the true shape of the section

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Name of Subject :MATHEMATICS - 1
Subject Code :3110014

MID SEM EXAM-2 (24/12/2018)	
Unit 1(b) Improper Integral& Beta- Gamma Function	
1	Improper integral of Type I & II , Convergence test
	Beta & Gamma Function & their properties
Unit 2 Infinite Sequences and Series	
2	Introduction of Convergence, Divergence of Sequences (Increasing, Decreasing, Monotonic, Oscillating, Bounded above, Bounded below, Sandwich Theorem for sequences)
3	Infinite Series: (Convergent, Divergent, Oscillation, Sum of series)
4	The nth term test for Divergence & Geometric series, Telescoping Series, combining series
5	Integral Test
6	Comparison Test (Direct Comparison & Limit Comparison)

7	Ratio Test, Root Test, Raabe's Test
8	Alternating Series(Leibnitz's Test) Absolute convergence, Conditional convergence
9	Power Series: Radius of convergence & Interval of convergence
10	Maclaurin series : Standard function, using known function, using differentiation & integration method, by using substitution method
Unit 3 Fourier series	
11	Fourier series of periodic function Dirichlet's condition for representation by a Fourier series,
12	Fourier series of a function of period $2L$
13	Fourier series of EVEN , ODD function
14	Half Range sine series , Half Range Cosine series
Unit 5 Multiple Integrals	
15	Evaluationof Double & Triple integral with given constant limits
16	Evaluation of Double & Triple integral with given variable limits(Cartesian & Polar coordinates)
17	Double integrals over non rectangular region

18	Change of order in double integration
19	Jacobian multiple integral by substitution (Change of variable- Cartesian & polar using jacobian)
20	Area as double integral

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Name of Subject :BASIC ELECTRONICS

Subject Code :3110016

Unit No.	Topic Name
3	Special purpose diodes and transistors: Light emitting diode (LED). Zener diode, Zener diode circuit for voltage regulation, Photo diode, Solar cell, PIN diode, Varactor, Schottky diode, Varistors, Tunnel diode, Seven Segment display, Sixteen segment display, Identify segments on pin using multi-meter, Dot-matrix LED display, photo transistor, Opto-coupler, Reading datasheet of opto-electronics devices
4	AC Analysis of BJT circuits and small signal amplifier: Coupling and bypass capacitors, AC load lines, Transistor models and parameters, Common emitter circuit analysis, common base circuit analysis, common collector circuit analysis, Comparison of CE, CB and CC circuits, Transistor as a switch
5	Field effect transistors (FET) and its biasing: Junction field effect transistors(JFET), Comparison of BJT and FET, JFET characteristics, FET, Biasing in ohmic region and active region, Trans-conductance, amplification and switching, MOSFETs (D-type and E-type MOSFET), CMOS introduction, E-MOSFET amplifier. MOSFET testing, Reading datasheet for FET and MOSFET.

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Name of Subject :Physics (Soft Group)
Subject Code :3110018

UNIT 2	SEMICONDUCTORS Intrinsic and extrinsic semiconductors Dependence of Fermi level on carrier-concentration and temperature (equilibrium carrier statistics) Carrier generation and recombination, Carrier transport: diffusion and drift, p-n junction, Metal-semiconductor junction (Ohmic and Schottky), Semiconductor materials of interest for optoelectronic devices
UNIT 3	LIGHT-SEMICONDUCTOR INTERACTION Optical transitions in bulk semiconductors: absorption, spontaneous emission, and stimulated emission; Joint density of state Density of states for photons, Transition rates (Fermi's golden rule) Optical loss and gain; Photovoltaic effect, Exciton Drude model.