**SUBJECT- CIRCUIT AND NETWORK THEORY          SUBJECT CODE- TH2**

**SEM-3<sup>RD</sup>          BRANCH-EE**

| Module No. | Topic to be covered | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **MAGNETIC CIRCUITS** | | |
| 1.1 | Introduction | 1 | |
| 1.2 | Magnetizing force, Intensity, MMF, flux and their relations | 1 | |
| 1.3 | Permeability, reluctance and permeance | 1 | |
| 1.4 | Analogy between electric and Magnetic Circuits | 1 | |
| 1.5 | B-H Curve | 1 | |
| 1.6 | Series & parallel magnetic circuit. | 1 | |
| 1.7 | Hysteresis loop | 1 | |
| | | | |
| **2** | **COUPLED CIRCUITS** | | |
| 2.1 | Self Inductance and Mutual Inductance | 1 | |
| 2.2 | Conductively coupled circuit and mutual impedance | 1 | |
| 2.3 | Dot convention | | |
| 2.4 | Coefficient of coupling | 1 | |
| 2.5 | Series and parallel connection of coupled inductors. | 1 | |
| 2.6 | Solve numerical problems | 1 | |
| | | | |
| **3** | **CIRCUIT ELEMENTS AND ANALYSIS** | | |
| 3.1 | Active, Passive, Unilateral & bilateral, Linear & Non linear elements | 1 | |
| 3.2 | Mesh Analysis, Mesh Equations by inspection | 1 | |
| 3.3 | Super mesh Analysis | 1 | |
| 3.4 | Nodal Analysis, Nodal Equations by inspection | 1 | |
| 3.5 | Super node Analysis. | | |
| 3.6 | Source Transformation Technique | 1 | |
| 3.7 | Solve numerical problems (With Independent Sources Only) | 1 | |
| | | | |
| **4** | **NETWORK THEOREMS:** | 1 | |
| 4.1 | Star to delta and delta to star transformation | 1 | |
| 4.2 | Super position Theorem | 1 | |
| 4.3 | Thevenin's Theorem | 1 | |
| 4.4 | Norton's Theorem | 1 | |
| 4.5 | Maximum power Transfer Theorem. | 1 | |
| 4.6 | Solve numerical problems (With Independent Sources Only) | 2 | |
| | | | |
| **5** | **AC CIRCUIT AND RESONANCE:** | | |
| 5.1 | A.C. through R-L, R-C & R-L-C Circuit | 1 | |
| 5.2 | Solution of problems of A.C. through R-L, R-C & R-L-C series Circuit by complex algebra method | 1 | |
| 5.3 | Solution of problems of A.C. through R-L, R-C & R-L-C parallel & Composite Circuits | 1 | |
| 5.4 | Power factor & power triangle | 1 | |
| 5.5 | Deduce expression for active, reactive, apparent power | 1 | |

| 5.6 | Derive the resonant frequency of series resonance and parallel resonance circuit | 1 | |
|---|---|---|---|
| 5.7 | Define Bandwidth, Selectivity & Q-factor in series circuit | 1 | |
| 5.8 | Solve numerical problems | 1 | |
| | | | |
| **6** | **POLYPHASE CIRCUIT** | | |
| 6.1 | Concept of poly-phase system and phase sequence | 1 | |
| 6.2 | Relation between phase and line quantities in star & delta connection | 1 | |
| 6.3 | Power equation in 3-phase balanced circuit | 1 | |
| 6.4 | Solve numerical problems | 1 | |
| 6.5 | Measurement of 3-phase power by two wattmeter method | 1 | |
| 6.6 | Solve numerical problems | 1 | |
| | | | |
| **7** | **TRANSIENTS** | | |
| 7.1 | Steady state & transient state response | 2 | |
| 7.2 | Response to R-L, R-C & RLC circuit under DC condition | 2 | |
| 7.3 | Solve numerical problems | 2 | |
| | | | |
| **8** | **TWO-PORT NETWORK:** | | |
| 8.1 | Open circuit impedance (z) parameters | 1 | |
| 8.2 | Short circuit admittance (y) parameters | 1 | |
| 8.3 | Transmission (ABCD) parameters | 1 | |
| 8.4 | Hybrid (h) parameters. | 1 | |
| 8.5 | Inter relationships of different parameters | 1 | |
| 8.6 | T and $\pi$ representation. | 1 | |
| 8.7 | Solve numerical problems | 2 | |
| | | | |
| **9** | **FILTERS** | | |
| 9.1 | Define filter | | |
| 9.2 | Classification of pass Band, stop Band and cut-off frequency | | |
| 9.3 | Classification of filters. | 1 | |
| 9.4 | Constant – K low pass filter | 1 | |
| 9.5 | Constant – K high pass filter. | 1 | |
| 9.6 | Constant – K Band pass filter. | 1 | |
| 9.7 | Constant – K Band elimination filter | 1 | |
| 9.8 | Solve Numerical problems | 1 | |

**SUBJECT- ELECTRICAL ENGINEERING MATERIAL**          **SUBJECT CODE- TH4**

**SEM-3RD          BRANCH-EE**

| Module No. | Topic to be covered | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **Conducting Materials:** | 1 | |
| 1.1 | Introduction | 1 | |
| 1.2 | Resistivity, factors affecting resistivity | 1 | |
| 1.3 | Classification of conducting materials into low-resistivity and high resistivity materials | 2 | |
| 1.4 | Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel) | 2 | |
| 1.5 | Stranded conductors | 1 | |
| 1.6 | Bundled conductors | 1 | |
| 1.7 | Low resistivity copper alloys | 1 | |
| 1.8 | High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury) | 2 | |
| 1.9 | Superconductivity | 1 | |
| 1.10 | Superconducting materials | 2 | |
| 1.11 | Application of superconductor materials | 1 | |
| | | | |
| **2** | **Semiconducting Materials:** | | |
| 2.1 | Introduction | | |
| 2.2 | Semiconductors | 1 | |
| 2.3 | Electron Energy and Energy Band Theory | | |
| 2.4 | Excitation of Atoms | | |
| 2.5 | Insulators, Semiconductors and Conductors | 1 | |
| 2.6 | Semiconductor Materials | 1 | |
| 2.7 | Covalent Bonds | | |
| 2.8 | Intrinsic Semiconductors | | |
| 2.9 | Extrinsic Semiconductors | 1 | |
| 2.10 | N-Type Materials | | |
| 2.11 | P-Type Materials | 1 | |
| 2.12 | Minority and Majority Carriers | | |
| 2.13 | Semi-Conductor Materials | | |
| 2.14 | Applications of Semiconductor materials | | |
| 2.14.1 | Rectifiers | 1 | |
| 2.14.2 | Temperature-sensitive resisters or thermistors | | |
| 2.14.3 | Photoconductive cells | | |
| 2.14.4 | Photovoltaic cells | 1 | |
| 2.14.5 | Varisters | | |
| 2.14.6 | Transistors | 1 | |
| 2.14.7 | Hall effect generators | 1 | |
| 2.14.8 | Solar power | 1 | |
| | | | |
| **3** | **Insulating Materials:** | | |
| 3.1 | Introduction | | |

| | | | | |
|---|---|---|---|---|
| 3.2 | General properties of Insulating Materials | 1 | |
| 3.2.1 | Electrical properties | 1 | |
| 3.2.2 | Visual properties | 1 | |
| 3.2.3 | Mechanical properties | | |
| 3.2.4 | Thermal properties | 1 | |
| 3.2.5 | Chemical properties | | |
| 3.2.6 | Ageing | 1 | |
| 3.3 | Insulating Materials – Classification, properties, applications | 1 | |
| 3.3.1 | Introduction | | |
| 3.3.2 | Classification of insulating materials on the basis physical and chemical structure | 1 | |
| 3.4 | Insulating Gases | 1 | |
| 3.4.1 | Introduction. | | |
| 3.4.2 | Commonly used insulating gases | 1 | |
| | | | |
| **4** | **Dielectric Materials:** | | |
| 4.1 | Introduction | 1 | |
| 4.2 | Dielectric Constant of Permittivity | 1 | |
| 4.3 | Polarization | 1 | |
| 4.4 | Dielectric Loss | 1 | |
| 4.5 | Electric Conductivity of Dielectrics and their Break Down | 2 | |
| 4.6 | Properties of Dielectrics | 1 | |
| 4.7 | Applications of Dielectrics | 1 | |
| | | | |
| **5** | **Magnetic Materials:** | | |
| 5.1 | Introduction | | |
| 5.2 | Classification | 1 | |
| 5.2.1 | Diamagnetism | 1 | |
| 5.2.2 | Para magnetism | | |
| 5.2.3 | Ferromagnetism | 1 | |
| 5.3 | Magnetization Curve | | |
| 5.4 | Hysteresis | 1 | |
| 5.5 | Eddy Currents | | |
| 5.6 | Curie Point | 1 | |
| 5.7 | Magneto-striction | | |
| 5.8 | Soft and Hard magnetic Materials | 1 | |
| 5.8.1 | Soft magnetic materials | 1 | |
| 5.8.2 | Hard magnetic materials | 1 | |
| | | | |
| **6** | **Materials for Special Purposes:** | | |
| 6.1 | Introduction | 1 | |
| 6.2 | Structural Materials | | |
| 6.3 | Protective Materials | 1 | |
| 6.3.1 | Lead | | |
| 6.3.2 | Steel tapes, wires and strips | 1 | |
| 6.4 | Other Materials | 1 | |
| 6.4.1 | Thermocouple materials | 1 | |
| 6.4.2 | Bimetals | 1 | |
| 6.4.3 | Soldering Materials | 1 | |
| 6.4.4 | Fuse and Fuse materials. | 1 | |
| 6.4.5 | Dehydrating material | 1 | |

**SUBJECT- ELEMENTS OF MECHANICAL ENGINEERING**       **SUBJECT CODE- TH3**

**SEM-3<sup>RD</sup>        BRANCH-EE**

| Module No. | Topic to be covered | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **THERMODYNAICS:** | 1 | |
| 1.1 | State Unit of Heat and work, 1st law of thermodynamics | 2 | |
| 1.2 | State Laws of perfect gases | 1 | |
| 1.3 | Determine relationship of specific heat of gases at constant volume and constant pressure. | 2 | |
| | | | |
| **2** | **PROPERTIES OF STEAM** | 1 | |
| 2.1 | Use steam table for solution of simple problem | 2 | |
| 2.2 | Explain total heat of wet, dry and super heated steam | 2 | |
| | | | |
| **3** | **BOILERS:** | 1 | |
| 3.1 | State types of Boilers | 3 | |
| 3.2 | Describe Cochran, Babcock Wilcox boiler | 3 | |
| 3.3 | Describe Mountings and accessories | 3 | |
| | | | |
| **4** | **STEAM ENGINES:** | 1 | |
| 4.1 | Explain the principle of Simple steam engine | 2 | |
| 4.2 | Draw Indicator diagram | 1 | |
| 4.3 | Calculate Mean effective pressure, IHP and BHP and mechanical efficiency | 3 | |
| 4.4 | Solve Simple problem | 3 | |
| | | | |
| **5** | **STEAM TURBINES** | 1 | |
| 5.1 | State Types | 2 | |
| 5.2 | Differentiate between impulse and reaction Turbine | 3 | |
| | | | |
| **6** | **CONDENSER:** | 1 | |
| 6.1 | Explain the function of condenser | 2 | |
| 6.2 | State their types | 2 | |
| | | | |
| **7** | **I.C. ENGINE:** | 1 | |
| 7.1 | Explain working of two stroke and 4 stroke petrol and Diesel engines | 2 | |
| 7.2 | Differentiate between them | 1 | |
| | | | |
| **8** | **HYDROSTATICS:** | 1 | |
| 8.1 | Describe properties of fluid | 2 | |
| 8.2 | Determine pressure at a point, pressure measuring Instruments | 2 | |
| | | | |
| **9** | **HYDROKINETICS:** | 1 | |
| 9.1 | Deduce equation of continuity of flow | 1 | |

**SUBJECT- ENVIRONMENTAL STUDIES          SUBJECT CODE- TH5**

**SEM-3<sup>RD</sup>          BRANCH-EE**

| Module No. | Topic to be covered | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **The Multidisciplinary nature of environmental studies:** | 1 | |
| 1.1 | Definition, scope and importance | 1 | |
| 1.2 | Need for public awareness | 2 | |
| | | | |
| **2** | **Natural Resources:** | | |
| | Renewable and non renewable resources: | | |
| 2.1 | Natural resources and associated problems. | 1 | |
| 2.1.1 | Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people | 2 | |
| 2.1.2 | Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems | 1 | |
| 2.1.3 | Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources | 1 | |
| 2.1.4 | Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture, fertilizers- pesticides problems, water logging, salinity, . | 1 | |
| 2.1.5 | Energy Resources: Growing energy need, renewable and non-renewable energy sources, use of alternate energy sources, case studies. | 1 | |
| 2.1.6 | Land Resources: Land as a resource, land degradation, man induces landslides, soil erosion, and desertification. | 1 | |
| 2.2 | Role of individual in conservation of natural resources. | 1 | |
| 2.3 | Equitable use of resources for sustainable life styles. | 1 | |
| | | | |
| **3** | **Systems:** | | |
| 3.1 | Concept of an eco system | | |
| 3.2 | Structure and function of an eco system | 1 | |
| 3.3 | Producers, consumers, decomposers | 1 | |
| 3.4 | Energy flow in the eco systems | 1 | |
| 3.5 | Ecological succession. | 1 | |
| 3.6 | Food chains, food webs and ecological pyramids | 1 | |
| 3.7 | Introduction, types, characteristic features, structure and function of the following eco system: | 1 | |
| 3.8 | Forest ecosystem | 1 | |
| 3.9 | Aquatic eco systems (ponds, streams, lakes, rivers, oceans, | 1 | |
| | | | |
| **4** | **Biodiversity and it's Conservation:** | 1 | |
| 4.1 | Introduction-Definition: genetics, species and ecosystem diversity. | 1 | |
| 4.2 | Biogeographically classification of India. | 1 | |

| | | | |
|---|---|---|---|
| 4.3 | Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and optin values. | 2 | |
| 4.4 | Biodiversity at global, national and local level. | 1 | |
| 4.5 | Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts. | 2 | |
| | | | |
| **5** | **Environmental Pollution:** | 1 | |
| 5.1 | Definition Causes, effects and control measures of: | 1 | |
| 5.1.1 | Air pollution. | 1 | |
| 5.1.2. | Water pollution. | 1 | |
| 5.1.3 | Soil pollution | 1 | |
| 5.1.4 | Marine pollution | 1 | |
| 5.1.5 | Noise pollution. | 1 | |
| 5.1.6 | Thermal pollution | 1 | |
| 5.1.7 | Nuclear hazards. | 1 | |
| 5.2 | Solid waste Management: Causes, effects and control measures of urban and industrial wastes. | 1 | |
| 5.3 | Role of an individual in prevention of pollution. | 1 | |
| 5.4 | Disaster management: Floods, earth quake, cyclone and landslides | 1 | |
| | | | |
| **6** | **Social issues and the Environment:** | | |
| 6.1 | Form unsustainable to sustainable development | 1 | |
| 6.2 | Urban problems related to energy. | 1 | |
| 6.3 | Water conservation, rain water harvesting, water shed management. | 1 | |
| 6.4 | Resettlement and rehabilitation of people; its problems and concern. | 1 | |
| 6.5 | Environmental ethics: issue and possible solutions. | 1 | |
| 6.6 | Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies. | 2 | |
| 6.7 | Air (prevention and control of pollution) Act. | 1 | |
| 6.8 | Water (prevention and control of pollution) Act. | 1 | |
| 6.9 | Public awareness. | 1 | |
| | | | |
| **7** | **Human population and the environment:** | 1 | |
| 7.1 | Population growth and variation among nations. | 1 | |
| 7.2 | Population explosion- family welfare program | 1 | |
| 7.3 | Environment and human health | 1 | |
| 7.4 | Human rights. | 1 | |
| 7.5 | Value education | 1 | |
| 7.6 | Role of information technology in environment and human health | 2 | |

| SUBJECT-ENGINEEING MATHEMATICS-III | | SUBJECT CODE-TH1 | |
|---|---|---|---|
| **SEM-3RD        BRANCH-EE** | | | |
| Module No. | Topic to be covered | No. of periods required | Tentative date for completion |
| **1** | **Complex Numbers** | | |
| 1.1 | Real and Imaginary numbers | 1 | |
| 1.2 | Complex numbers, conjugate, modulus, amplitude | 1 | |
| 1.3 | Geometrical Representation of Complex Numbers | 1 | |
| 1.4 | Properties of Complex Numbers | 1 | |
| 1.5 | Cube roots of unity and properties, | | |
| 1.6 | De Moivre's theorem | 1 | |
| 1.7 | Problem solving on 1.1 - 1.6 | 1 | |
| | | | |
| **2** | **Matrices** | | |
| 2.1 | Define rank of a matrix | | |
| 2.2 | Row transformations to determine rank | 1 | |
| 2.3 | Rouche's theorem | 1 | |
| 2.4 | Solve equations in three unknowns | 1 | |
| 2.5 | Problem solving on 2.1 – 2.4 | 1 | |
| | | | |
| **3** | **Linear Differential Equations** | | |
| 3.1 | Define Homogeneous and Non – Homogeneous Linear Differential Equations with constant coefficients with examples | 1 | |
| 3.2 | General solution in terms of C.F. and P.I. | 1 | |
| 3.3 | Rules for C.F. and P.I. using operator D | 1 | |
| 3.4 | Define partial differential equation (P.D.E) | 1 | |
| 3.5 | Form P.D.E by eliminating arbitrary constants/functions | 1 | |
| 3.6 | Solve P.D.E of the form $Pp + Qq = R$ | 1 | |
| 3.7 | Problem solving on 3.1 - 3.6 | 1 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |
| | | | |
| **4** | **Laplace Transforms** | | |
| 4.1 | Define Gamma function | 1 | |
| 4.2 | Laplace and Inverse Laplace Transform | 1 | |
| 4.3 | L.T. of standard functions and existence conditions | 2 | |
| 4.4 | Linear and shifting properties | 1 | |
| 4.5 | L.T. of derivatives, integrals, multiplication/division | 2 | |
| 4.6 | Inverse L.T. and partial fractions | 2 | |
| 4.7 | Problem solving on 4.1 - 4.6 | 1 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |
| | | | |
| **5** | **Fourier Series** | | |
| 5.1 | Define periodic functions | 1 | |
| 5.2 | Dirichlet's conditions | 1 | |

| | | | |
|---|---|---|---|
| 5.3 | Fourier series for periodic functions | 2 | |
| 5.4 | Euler's formulae | 1 | |
| 5.5 | Even and Odd functions | 1 | |
| 5.6 | Fourier series with discontinuity | 2 | |
| 5.7 | Problem solving on 5.1 - 5.6 | 2 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |
| | | | |
| **6** | **Numerical Methods** | | |
| 6.1 | Appraise limitation of analytical methods of solution of Algebraic Equations | | |
| 6.2 | Derive Iterative formula for finding the solutions of Algebraic Equations by : | 1 | |
| 6.2.1 | Bisection method | 1 | |
| 6.2.2 | Newton-Raphson method | 1 | |
| 6.3 | Problem solving on 6.2 | 1 | |
| | | | |
| **7** | **Finite difference and interpolation** | | |
| 7.1 | Finite difference and tables | 1 | |
| 7.2 | Shift and difference operator relation | 1 | |
| 7.3 | Newton's interpolation formulae | 1 | |
| 7.4 | Lagrange's interpolation formula | 1 | |
| 7.5 | Numerical integration rules | 1 | |
| 7.5.1 | Newton's Cote's formula. | 1 | |
| 7.5.2 | Trapezoidal rule. | 1 | |
| 7.5.3 | Simpson's 1/3rd rule | 1 | |
| 7.6 | Problem solving on 7.1 - 7.5 | 1 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |
| | Problem solving | 1 | |

**SUBJECT- CIRCUIT AND SIMULATION LABORATORY**        **SUBJECT CODE- Pr.2**

**SEM-3<sup>RD</sup>        BRANCH-EE**

| Experiment No. | Experiment to be done | No. of periods required | Tentative date for completion |
|---|---|---|---|
| 1 | Measurement of equivalent resistance in series and parallel circuit | 2 | |
| 2 | Measurement of power and power factor using series R-L-C Load. | 2 | |
| 3 | Verification of KCL and KVL. | 2 | |
| 4 | Verification of Super position theorem | 2 | |
| 5 | Verification of Thevenin's Theorem | 2 | |
| 6 | Verification of Norton's Theorem | 2 | |
| 7 | Verification of Maximum power transfer Theorem | 2 | |
| 8 | Determine resonant frequency of series R-L-C circuit. | 2 | |
| 9 | Study of Low pass filter & determination of cut-off frequency | 2 | |
| 10 | Study of High pass filter & determination of cut-off frequency | 2 | |
| 11 | Analyze the charging and discharging of an R-C & R-L circuit with oscilloscope and Compute the time constant from the tabulated data and determine the rise time graphically | 3 | |
| 12 | Construct the following circuits using P-Spice/MATLAB software and compare the measurements and waveforms.<br>i. Superposition theorem | 3 | |
| | ii. Series Resonant Circuit | 2 | |
| | iii. Transient Response in R-L-C series circuit | 2 | |

**SUBJECT- MECHANICAL ENGINEERING LABORATORY   SUBJECT CODE- Pr.1**

**SEM-3<sup>RD</sup>        BRANCH-EE**

| Experiment No. | Experiment to be done | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **APPLIED MECHANICS & MATERIAL TESTING** | | |
| 1.1 | Determination of M.A.,V.R. and efficiency of Screw Jack | 1 | |
| 1.2 | Determination of friction co-efficient of bearing | 1 | |
| 1.3 | Determination of Young's modulus by Searle's Apparatus | 1 | |
| 1.4 | Determination of M.A.,V.R. and efficiency of wheel train | 1 | |
| 1.5 | Determination of Bending stress in beam using strain gauge | 1 | |
| 1.6 | Study of Universal Testing Machine and determination of tensile stress and Young's module of M.S specification | 1 | |
| | | | |
| **2** | **HYDRAULICS & HYDRAULIC MACHINE LAB** | | |
| 2.1 | Study of pressure measuring devices such as (a) Piezo-meter (b) Simple manometer | 1 | |
| 2.2 | Study of venturi-meter | 1 | |
| 2.3 | Verification of Bernouli's Theorem | 1 | |
| 2.4 | Model study of Centrifugal pumps, Francis, Turbine, Kaplan turbine and Pelton wheel. | 2 | |
| | | | |
| **3** | **HEAT ENGINE LAB** | | |
| 3.1 | Study of Cochran Boiler | 1 | |
| 3.2 | Study and demonstration of Stream Engine | 1 | |
| 3.3 | Study and demonstration of Diesel Engine | 1 | |
| 3.4 | Study and demonstration of Petrol Engine | 1 | |

**SUBJECT- MECHANICAL WORKSHOP PRACTICE**          **SUBJECT CODE- Pr.3**

**SEM-3ᴿᴰ          BRANCH-EE**

| Experiment No. | Experiment to be done | No. of periods required | Tentative date for completion |
|---|---|---|---|
| **1** | **Carpentry:** | 1 | |
| 1.1 | Name of carpentry tools and uses | 3 | |
| 1.2 | Different operations<br>a. Sawing<br>b. Planning<br>c. Chiseling | 3 | |
| 1.3 | Measuring & Marking | 2 | |
| 1.4 | Different types of timbers used by carpenters, substitutions of timbers. | 3 | |
| 1.5 | Jobs :<br>a. Slot. Notch<br>b. Mortise and tenon joint<br>c. Single dovetail joint | 3 | |
| **2** | **Turning** | 1 | |
| | Study of S. C. Lathes and their accessories,<br> practice in lathe work involving various operations such as<br>plane turning,<br>step turning,<br>tapper turning,<br>knuckling<br>and external V. Threading. (One job only.) | 2<br><br>3<br>3<br>3<br>3<br>2 | |