

## **BT ESP SYLLABUS**

### **1<sup>ST</sup> SEMESTER:-**

|  |   |
|--|---|
| <b>Subject Code :</b> IVC101   | <b>Category :</b> Mandatory & Industry Value Added Course |
| <b>Subject Name :</b> <b>MENTAL MATHS FOR PROFESSIONALS-I</b>  | <b>Semester :</b> 1st                                     |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)  | <b>Credit:</b> 0  |
| <b>Pre-Requisites:</b> Basic & fundamental knowledge of mathematics up to class 10 <sup>th</sup> standard, Logical & Analytical skill. |   |

### **Course Objective:**

1. To learn aptitude and multiple tricky approaches.
2. To enhance the analytical skill and quick decision-making skill of the students.  
Good analytical skill and sound knowledge in analogies will also enhance student's interview facing skill.
3. To make them prepare for the various competitive exams and different placement aptitude test as well.
4. To enhance student's skill to appear in various aptitude test within limited time constrain.

### **Course Outcome:**

1. Students will learn advance tricky approach for solving Quantitative Aptitude questions.
2. It will enhance students skill to appear in various aptitude test within limited time constrain.
3. This module will enhance students Analytical skill & will also improve quick decision making skill.
4. Students can prepare various competitive exams and different placement aptitude test as well.
5. Good analytical skill and sound knowledge in analogies will also enhance student's interview facing skill.

### **Course Content:**

| <b>Module No.</b> | <b>Description</b>  | <b>Hours</b> | <b>Blooms Level</b>                            | <b>PO (1..12) Mapping</b> |
|-------------------|---|--------------|--|---------------------------|
| 1.                | <b>Quantitative Aptitude:</b><br>1) Quant foundation<br>2) Basic Multiplication<br>3) Division<br>4) Squaring numbers<br>5) Percentage<br>6) Ratio<br>7) Simple equation<br>8) Variation<br>9) Partnership<br>10) Profit & Loss | 30           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO7,<br>PO8          |

|    |  |    |  |                  |
|----|--|----|--|------------------|
| 2. | <b>Logical Mental ability -1:</b><br>1) Coding and Decoding & Direction Sense<br>2) Series & Numbers<br>3) Blood Relations<br>4) Analogy | 18 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO7,<br>PO8 |
|----|--|----|--|------------------|

### **Learning Resources:**

#### **Text Books:**

1. Fast Track Arithmetic- Rajesh Verma
2. Verbal & non-verbal reasoning- R.S Agarwal
3. Quantitative Aptitude- R.S Agarwal
4. Analytical Reasoning –Peeyush Bhardwaj

## **2<sup>ND</sup> SEMESTER:-**

|   |   |
|---|---|
| <b>Subject Code :</b> IVC201  | <b>Category :</b> Mandatory & Industry Value Added Course |
| <b>Subject Name :</b> General Studies and CA-II   | <b>Semester :</b> 2nd                                     |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)   | <b>Credit:</b> 0  |
| <b>Pre-Requisites:</b> Fundamental knowledge of humanities & social science subjects till class 10 <sup>th</sup> standard and knowledge of Economics up to class 11 <sup>th</sup> standard. |   |

### **Course Objective:**

1. To learn aptitude and multiple tricky approaches.
2. To enhance the analytical skill and quick decision-making skill of the students.  
Good analytical skill and sound knowledge in analogies will also enhance student's interview facing skill.
3. To make them prepare for the various competitive exams and different placement aptitude test as well.
4. To enhance student's skill to appear in various aptitude test within limited time constrain.

### **Course Outcome:**

1. This part of the syllabus will create base of general knowledge among students which is required to appear in various competitive exams in public sector jobs.
2. It will inculcate their rights & duties to the society, it will help them to act according to law in society.
3. It will also improve basic banking knowledge among students.
4. This part of the syllabus will enhance knowledge on National & International Current Affairs among students.

### **Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>                            | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | <b>Laws of Society:</b><br>History of Constitution, Preamble, Fundamental Rights, Directive Principle of State Policy and Fundamental Duties | 8            | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8        |
| 2.                | <b>Our Ancient Past:</b><br>Indus Valley Civilization, Vedic Civilization, 16 Mahajanapadas, Mauryan Dynasty.                                | 10           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8        |
| 3.                | <b>Know Our Country:</b><br>Physiographic Division of India- Geological history of India, Northern Mountain, Mineral Resources of India.     | 8            | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8        |
| 4.                | <b>Financial Planning and Market Laws:</b><br>Basic Concept of Economics, National   | 8            | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8        |

|    |  |   |  |                   |
|----|--|---|--|-------------------|
|    | Income, Unemployment and Poverty   |   |  |                   |
| 5. | <b>India and World:</b><br>Monthly Current Affairs Magazine  | 8 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8 |
| 6. | <b>Universal Human Values:</b><br>Understanding Value Education, Method to fulfill the Basic Human Aspiration, Continuous happiness and Prosperity- the Basic Human Aspiration | 6 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply) | PO6, PO 7,<br>PO8 |

### **Learning Resources:**

#### **Text Books:**

- Indian Constitution- M.Laxmikant
- Indian Economy-Ramesh Singh
- India's Ancient Past- R.S.Sharma
- Geography of India- Majid Hussain

#### **Reference Books:**

- Current Affairs Magazine of IEM-UEM

### **3<sup>RD</sup> SEMESTER:-**

|   |  |
|---|--|
| <b>Subject Code :</b> IVC301  | <b>Category:</b> Mandatory & Industry Value Added Course |
| <b>Subject Name :</b> General Studies and CA- III                               | <b>Semester :</b> 3rd                                    |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)                                     | <b>Credit:</b> 0   |
| <b>Pre-Requisites:</b> Basic Social Science from primary to high school, NCERTs |  |

#### **Course Objective:**

1. To learn about basic of History to know about our past and to implement it in our daily life.
2. To learn about the Political System of Our Country.
3. To learn the concepts of Basics of Geography and Economics from which Students will acquire knowledge for Competitive exams.

#### **Course Outcome:**

At the end of the course the students will be able

1. To inculcate human values and ethical thinking among students.
2. To prepare the stage for facing different levels of civil service and other competitive examinations.
3. To prepare the ground for making them aware of the happenings, cultural historical and developmental aspects of the country as well as global affairs
4. Learning current affairs with technique.

#### **Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>  | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | <b>Laws of Society :</b> Union Executive- President, Vice President, PM and Council of Ministers, Attorney General   | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyse)               | PO6,PO7, PO8             |
| 2.                | <b>Our Freedom Struggle:</b> Arrival of the Europeans- Portuguese, Dutch, English, French; Land Revenue System, Economic Exploitation of British Rule, Socio-religious Reforms Movement. | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7, PO8             |
| 3.                | <b>Know Our Country:</b> Physical Geography of India- Peninsular Plateau, Northern Great Plains, Coastal Plains, Soil of India.  | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7, PO8             |

|    |   |   |  |                 |
|----|---|---|--|-----------------|
| 4. | <b>RBI and Banking, India and World and Universal Human Values:</b> Banking System of India with reference to RBI, Capital Market Monthly Current Affairs Magazine and Understanding Human Beings as the co- existence of the self and the body, Program to ensure self-regulation and health, Understanding harmony in the nature. | 6 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO6,PO7,<br>PO8 |
|----|---|---|--|-----------------|

### **Learning Resources:**

#### **Text Books:**

1. NCERT Books from class 8-12.

#### **Reference Books:**

1. Indian Constitution-M.Laxmikant
2. Indian Economy-Ramesh Singh
3. History of Modern India- Bipan Chandra
4. Geography of India- Majid Hussain
5. Current Affairs Magazine of IEM-UEM

#### **4TH SEMESTER:-**

|   |   |
|---|---|
| <b>Subject Code :</b> IVC401  | <b>Category :</b> Mandatory & Industry Value Added Course |
| <b>Subject Name :</b> GENERAL STUDIES & CURRENT AFFAIRS-IV                      | <b>Semester :</b> 4th                                     |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)                                     | <b>Credit:</b> 0  |
| <b>Pre-Requisites:</b> Basic Social Science from primary to high school, NCERTs |   |

#### **Course Objective:**

1. To learn about basic of History to know about our past and to implement it in our daily life.
2. To learn about the Political System of Our Country.
3. To learn the concepts of Basics of Geography and Economics from which Students will acquire knowledge for Competitive exams.

#### **Course Outcome:**

At the end of the course the students will be able

1. To inculcate human values and ethical thinking among students.
2. To prepare the stage for facing different levels of civil service and other competitive examinations.
3. To prepare the ground for making them aware of the happenings, cultural historical and developmental aspects of the country as well as global affairs
4. Learning current affairs with technique.

#### **Course Content:**

| <b>Module No.</b> | <b>Description</b>  | <b>Hours</b> | <b>Blooms Level</b>  | <b>PO(1..12) Mapping</b> |
|-------------------|---|--------------|--|--------------------------|
| 1.                | <b>Laws of Society:</b><br>Central Legislative System of India, State Legislative System of India, Indian Judiciary           | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyse)               | PO6,PO7, PO8             |
| 2.                | <b>Heritage of India:</b><br>Islam and Early Muslim Invaders, Delhi Sultanate, Bhakti and Sufi Movement.                      | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7, PO8             |
| 3.                | <b>Know Our Country:</b><br>Rivers of India, Vegetation of India, Climate of India, Transport of India.                       | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7, PO8             |
| 4.                | <b>Revenue and Expenditure of India, India and World and Universal Human Values:</b> Tax System of India, Balance of Payment, | 6            | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7, PO8             |

|  |   |  |  |  |
|--|---|--|--|--|
|  | Industrial Reforms, Monthly Current Affairs Magazine, Realising existence and co- existence at all levels, Holistic perception of Harmony in existence. |  |  |  |
|--|---|--|--|--|

### **Learning Resources:**

#### **Text Books:**

1.NCERT Books from class 8-12.

#### **Reference Books:**

1. Indian Constitution-M.Laxmikant
2. Indian Economy-Ramesh Singh
3. History of Modern India- Bepan Chandra
4. Geography of India- Majid Hussain
5. Current Affairs Magazine of IEM-UEM



### **5TH SEMESTER:-**

|  |   |
|--|---|
| <b>Subject Code :</b> IVC(BT)501   | <b>Category:</b> Mandatory& Industry Value Added Course |
| <b>Subject Name :</b> ADVANCED TECHNICAL KNOWLEDGE-V   | <b>Semester :</b> 5th                                   |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)  | <b>Credit:</b> 0  |
| <b>Pre-Requisites:</b> Basics of Digital Electronic, Programming, Discrete Mathematics and Computer Organization |   |

#### **Course Objective:**

1. To learn about basic of digital circuits for professional exams
2. To learn about fundamentals of computer programming for various exams
3. To learn about basic of discrete mathematics for professional exams
4. To learn about fundamentals of computer organizations for various exams

#### **Course Outcome:**

At the end of the course the students will be able

1. To develop an understanding of Digital electronic circuit components and their working principles.
2. To learn all types of linear, non-linear data structures and calculate time complexity and space complexity of any given algorithm.
3. To understand memory technology and communication among processing elements.
4. To use logical notation & Perform logical proofs, recursive functions and solve recurrence relations and principles of counting

#### **Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>  | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | Biochemistry: Biomolecules-structure and functions; Biological membranes, structure,action potential and transport processes; Enzymes- classification, kinetics and mechanismof action; Basic concepts and designs of metabolism (carbohydrates, lipids, amino acidsand nucleic acids) photosynthesis, respiration and electron transport chain; Bioenergetics | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyze)               | PO1,PO2, PO3             |
| 2.                | Microbiology: Viruses- structure and classification; Microbial classification anddiversity(bacterial, algal and fungal); Methods in microbiology; Microbial growth andnutrition; Aerobic and anaerobic respiration; Nitrogen fixation; Microbial diseases and host-pathogen interaction  | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2, PO3             |

|    |   |    |  |                 |
|----|---|----|--|-----------------|
| 3. | Cell Biology: Prokaryotic and eukaryotic cell structure; Cell cycle and cell growth control; Cell-Cell communication, Cell signaling and signal transduction  | 12 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2,<br>PO3 |
| 4. | Bio Process: Chemical engineering principles applied to biological system, Principle of reactor design, ideal and non-ideal multiphase bioreactors, mass and heat transfer; Rheology of fermentation fluids, Aeration and agitation; Media formulation and optimization; Kinetics of microbial growth, substrate utilization and product formation; Sterilization of air and media; Batch, fed-batch and continuous processes; Various types of microbial and enzyme reactors; Instrumentation control and optimization | 12 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2,<br>PO3 |

### **Learning Resources:**

#### **Text Books:**

1. G.K publishers GATE Biotechnology engineering, Mcgraw hill
2. GATE 2017 Biotechnology engineering
3. Wiley GATE 2017 Biotechnology engineering

**6TH SEMESTER:-**

|  |  |
|--|--|
| <b>Subject Code</b> :IVC(BT)601  | <b>Category</b> : Mandatory& Industry Value Added Course |
| <b>Subject Name</b> : ADVANCED TECHNICAL KNOWLEDGE-VI  | <b>Semester</b> : 6th                                    |
| <b>L-T-P</b> : 2-0-0 (Total Contact Hrs. 2)  | <b>Credit</b> : 0  |
| <b>Pre-Requisites</b> : Basics of Data structure, Architecture, Theory of computation and Algorithms |  |

**Course Objective:**

1. To learn about the Programming and Data Structures for professional exams
2. To learn about fundamentals of Computer Organization and Architecture for various exams
3. To learn about Theory of computation for professional exams
4. To learn about fundamentals of Algorithms and Database management systems for various exams

**Course Outcome:**

At the end of the course the students will be able

1. To develop an understanding of Programming and Data Structures.
2. To learn all types of Computer architecture and Organization fundamentals.
3. To understand theory of computation and its applications.
4. To use fundamentals of Algorithms and Database principles.

**Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>  | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | Molecular Biology and Genetics: Molecular structure of genes and chromosomes;Mutations and mutagenesis; Nucleic acid replication, transcription, translation and their regulatory mechanisms in prokaryotes and eukaryotes. Mendelian inheritance; Geneinteraction; Complementation; Linkage, recombination and chromosome mapping; Extrachromosomal inheritance; Microbial genetics (plasmids, transformation, transduction,conjugation); Horizontal gene transfer and Transposable elements; | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyse)               | PO1,PO2, PO3             |
| 2.                | Analytical Techniques: Centrifugation- high speed and ultra; Principles of spectroscopy-UV, visible, CD, IR, FTIR, Raman, MS, NMR. Analytical Techniques: Principles of microscopy-light, electron, fluorescent and confocal   | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2, PO3             |

|    |  |    |  |                 |
|----|--|----|--|-----------------|
| 3. | Bioinformatics: Major bioinformatic resources and search tools; Sequence and structure databases; Sequence analysis (biomolecular sequence file formats, scoring matrices, sequence alignment, phylogeny); Data mining and analytical tools for genomic and proteomic studies; Molecular dynamics and simulations (basic concepts including force fields, protein-protein, protein-nucleic acid, protein-ligand interaction) | 12 | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2,<br>PO3 |
| 4. | Plant and Animal Biotechnology: Totipotency; Regeneration of plants; Plant growth regulators and elicitors; Tissue culture and Cell suspension culture system: methodology, kinetics of growth and, nutrient optimization; Production of secondary metabolites by plant suspension cultures; Hairy root culture; transgenic plants; Plant products of industrial importance.   | 6  | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2,<br>PO3 |

**7TH SEMESTER:-**

|   |   |
|---|---|
| <b>Subject Code :</b> IVC(BT)701  | <b>Category:</b> Mandatory& Industry Value Added Course |
| <b>Subject Name :</b> ADVANCED TECHNICAL KNOWLEDGE-VII                            | <b>Semester :</b> 7th                                   |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)                                       | <b>Credit:</b> 0  |
| <b>Pre-Requisites:</b> Basics of Compiler, Operating systems and Computer network |   |

**Course Objective:**

1. To learn about the Details of compiler designs for professional exams
2. To learn about fundamentals of data base management for various exams
3. To learn about Operating systems for professional exams
4. To learn about fundamentals computer networksfor various exams

**Course Outcomes:**

At the end of the course the students will be able

1. To develop adetailed knowledge of compiler designs.
2. To learn all types of Data Base Management Systems' fundamentals.
3. To understand Operating Systems and its applications.
4. To use fundamentals of Computer networks and its methods.

**Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>                              | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | Principles of chromatography:<br>Ion exchange, gel filtration, hydrophobic interaction, affinity, GC,HPLC, FPLC; Electrophoresis; Microarray.<br>Immunology:<br>History of Immunology; Innate, humoral and cell mediated immunity; Antigen; Antibody structure and function; Molecular basis of antibody diversity; Synthesis of antibody and secretion; Antigen-antibody reaction; Complement; Primary and secondary lymphoid organ; B and T cells and macrophages; Major histocompatibility complex (MHC); Antigen processing and presentation; Polyclonal and monoclonal antibody; Regulation of immune response; Immune tolerance; Hypersensitivity; Autoimmunity; Graft versus host reaction. | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyze) | PO1,PO2 , PO3            |

|    |   |    |   |                  |
|----|---|----|---|------------------|
| 2. | Recombinant DNA Technology:<br>Restriction and modification enzymes;<br>Vectors; plasmid, bacteriophage and<br>other viral vectors, cosmids, Ti plasmid,<br>yeast<br>artificial chromosome; mammalian and<br>plant expression vectors; cDNA and<br>genomic DNA library; Gene isolation,<br>cloning and expression ; Transposons and<br>gene targeting; DNA labeling; DNA<br>sequencing; Polymerase chain reactions;<br>DNA fingerprinting; Southern and northern<br>blotting; In-situ hybridization; RAPD,<br>RFLP; Site-directed mutagenesis; Gene<br>transfer technologies; Gene therapy  |    |   |                  |
| 3. | Bioprocess Engineering and Process<br>Biotechnology :   | 12 | L1 (Remember)<br>L2<br>(Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2<br>, PO3 |
| 4. | Unit operations in solid-liquid separation<br>and liquid-liquid extraction; Process scale-<br>up, economics and feasibility analysis<br>Engineering principle of bioprocessing-<br>Upstream production and downstream;<br>Bioprocess design and development from<br>lab to industrial scale; Microbial, animal and<br>plant cell culture platforms; Production of<br>biomass and primary/secondary metabolites;<br>Biofuels, Bioplastics, industrial enzymes,<br>antibiotics; Large scale production and<br>purification of recombinant proteins;<br>Industrial application of chromatographic<br>and membrane based bioseparation<br>methods; Immobilization of biocatalysts<br>(enzymes and cells) for bioconversion<br>processes; Bioremediation-Aerobic and<br>anaerobic<br>processes for stabilization of solid / liquid<br>wastes | 12 | L1 (Remember)<br>L2<br>(Understand)<br>L3 (Apply)<br>L4 (Analyze) | PO1,PO2<br>, PO3 |

**Learning Resources:****Text Books:**

1. G.K publishers GATE Biotechnology engineering, Mcgraw hill
2. GATE 2017 Biotechnology engineering
3. Wiley GATE 2017 Biotechnology engineering

## **8<sup>TH</sup> SEMESTER**

|   |  |
|---|--|
| <b>Subject Code :</b> IVC801  | <b>Category:</b> Mandatory & Industry Value Added Course |
| <b>Subject Name :</b> GENERAL STUDIES & CURRENT AFFAIRS VIII                    | <b>Semester :</b> 8th                                    |
| <b>L-T-P :</b> 2-0-0 (Total Contact Hrs. 2)                                     | <b>Credit:</b> 0   |
| <b>Pre-Requisites:</b> Basic Social Science from primary to high school, NCERTs |  |

### **Course Objective:**

1. To learn about basic of History to know about our past and to implement it in our daily life.
2. To learn about the Political System of Our Country.
3. To learn the concepts of Basics of Geography and Economics from which Students will acquire knowledge for Competitive exams.

### **Course Outcomes:**

At the end of the course the students will be able

1. To inculcate human values and ethical thinking among students.
2. To prepare the stage for facing different levels of civil service and other competitive examinations.
3. To prepare the ground for making them aware of the happenings, cultural historical and developmental aspects of the country as well as global affairs
4. Learning current affairs with technique.

### **Course Content:**

| <b>Module No.</b> | <b>Description</b>   | <b>Hours</b> | <b>Blooms Level</b>  | <b>PO(1..12) Mapping</b> |
|-------------------|--|--------------|--|--------------------------|
| 1.                | <b>Laws of Society:</b> Evolution of Indian Constitution, Part -II and Part - III.   | 6            | L1 (Remember)<br>L2 (Understand)<br>L4 (Analyse)               | PO6,PO7,<br>PO8          |
| 2.                | <b>Our Freedom Struggle:</b> Indian National Congress, National Movement- 1905- 1947.  | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7,<br>PO8          |
| 3.                | <b>Know Your Country:</b> Physiography of India.   | 12           | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7,<br>PO8          |
| 4.                | <b>Economics, India and World and Universal Human Values:</b> Capital and Money Market, Fiscal System of India. Monthly Current Affairs Magazine, Nature acceptance of Human Values, Competence in Professional Ethics, Strategies for transition towards value based life and profession. | 6            | L1 (Remember)<br>L2 (Understand)<br>L3 (Apply)<br>L4 (Analyse) | PO6,PO7,<br>PO8          |



**Learning Resources:****Text Books:**

1. NCERT Books from class 8-12.

**Reference Books:**

1. Indian Constitution-M.Laxmikant
2. Indian Economy-Ramesh Singh
3. History of Modern India- Bipan Chandra
4. Geography of India- Majid Hussain
5. Current Affairs Magazine of IEM-UEM

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