# SOURASHTRA COLLEGE, MADURAI – 625004

(An Autonomous Institution Re-accredited with 'B+' grade by NAAC)

## DEPARTMENT OF MATHEMATICS

## CERTIFICATE COURSE IN MATHEMATICS FOR COMPETITIVE EXAMINATIONS – SYLLABUS

**(Under CBCS based on OBE) (For those admitted during 2024 – 2025 and after)**



| COURSE CODE | COURSE TITLE | CATEGORY | T | P | CREDITS |
|---|---|---|---|---|---|
| 24CMSC11 | QUANTITATIVE APTITUDE | CERTIFICATE COURSE | 20 Hrs. | - | - |

| YEAR | SEMESTER | INTERNAL | EXTERNAL | TOTAL |
|---|---|---|---|---|
| II | - | - | 100 | 100 |

| NATURE OF COURSE | Employability | Skill Oriented | Entrepreneurship |
|---|---|---|---|
| | ✓ | ✓ | ✓ |

**COURSE DESCRIPTION:**

This course deals with profit and loss, decimal fractions, partnerships, interests and graphs

**COURSE OBJECTIVES:**

- To understand the concepts profit and loss.
- To discuss the decimal fractions.
- To describe the permutations and combinations.
- To introduce graphs.
- To discuss about interests.

**COURSE OUTCOMES (COs):**

**After the completion of the course, the students will be able to**

| No. | Course Outcomes | Knowledge Level (According to Bloom's Taxonomy) |
|---|---|---|
| CO 1 | solve various profit ans loss problems | Upto K3 |
| CO 2 | understand the decimal fractions | Upto K3 |
| CO 3 | evaluate the partnership, permutation and combinations | Upto K3 |
| CO 4 | explain the interests | Upto K3 |
| CO 5 | solve the problems on graphs | Upto K3 |

**K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLY**

**Passed in the BoS Meeting held on 09/03/2024** **Signature of the Chairman**

## QUANTITATIVE APTITUDE

**UNIT- I:**

Profit & Loss.

**UNIT- II:**

Decimal Fractions - Probability.

**UNIT- III:**

Partnership – Permutations & Combinations

**UNIT- IV:**

Simple Interest – Compound Interest.

**UNIT- V:**

Bar graph

**TEXT BOOK:**

***Quantitative Aptitude*** by Dr. R.S. Agarwal. (S. Chand Company Private Limited – 7th Revised Edition -2016)

UNIT I – Chapter 11 (Page number 251 to 256)

UNIT II – Chapter 3 & 31 (Page number 46 to 50 and 621, 622)

UNIT III – Chapter 13 and 30 (Page number 311 to 313 and 613 to 615)

UNIT IV – Chapter 21 & 22(Page number 445 to 447 and 466 to 469)

UNIT V – Chapter 37 (Page number 676 to 682).

**Mapping of CO with PSO**

| | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 | PSO6 |
|---|---|---|---|---|---|---|
| CO1 | 1 | 3 | – | 2 | – | 2 |
| CO2 | 1 | 2 | – | – | 1 | – |
| CO3 | 3 | – | 2 | – | 3 | 1 |
| CO4 | 2 | 2 | 2 | 1 | – | 3 |
| CO5 | 2 | 3 | 3 | 3 | 2 | 1 |

**3. Advanced Application 2. Intermediate Development 1. Introductory Level**

**COURSE DESIGNER: Prof. N. H. SARAVANAN**

**Passed in the BoS Meeting held on 09/03/2024** **Signature of the Chairman**

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**(Under CBCS based on OBE) (For those admitted during 2024 – 2025 and after)**



| COURSE CODE | COURSE TITLE | CATEGORY | T | P | CREDITS |
|---|---|---|---|---|---|
| 24CMSC12 | NUMERICAL APTITUDE | CERTIFICATE COURSE | 20 Hrs. | - | - |

| YEAR | SEMESTER | INTERNAL | EXTERNAL | TOTAL |
|---|---|---|---|---|
| II | - | - | 100 | 100 |

| NATURE OF COURSE | Employability | Skill Oriented | Entrepreneurship |
|---|---|---|---|
| | ✓ | ✓ | ✓ |

**COURSE DESCRIPTION:**

This course deals with Numbers, ages, Ratio Proportion, Time and Distance and Algorithm.

**COURSE OBJECTIVES:**

- To understand the concepts averages.
- To discuss the time and work.
- To describe the ratios and proportions.
- To introduce time and distance.
- To discuss about calendars

**COURSE OUTCOMES (COs):**

**After the completion of the course, the students will be able to**

| No. | Course Outcomes | Knowledge Level (According to Bloom's Taxonomy) |
|---|---|---|
| CO 1 | solve various types averages | Upto K3 |
| CO 2 | understand the time and work | Upto K3 |
| CO 3 | evaluate the rato and proportions. | Upto K3 |
| CO 4 | explain time and distance problems. | Upto K3 |
| CO 5 | solve the problems on trains and logarithms | Upto K3 |

**K1– KNOWLEDGE (REMEMBERING), K2–UNDERSTANDING, K3–APPLY**

**Passed in the BoS Meeting held on 09/03/2024** **Signature of the Chairman**

## NUMERICAL APTITUDE

**UNIT- I:**
Averages - Problems on ages.

**UNIT- II:**
Time and work.

**UNIT- III:**
Ratio and proportion –surds and indices

**UNIT- IV:**
Time and distance.

**UNIT- V:**
Calendar – Logarithms

**TEXT BOOK**

***Quantitative Aptitude*** by Dr. R. S. Agarwal. (S. Chand Company Private Limited – 7th Revised Edition -2016)

UNIT I – Chapter 6 and 8 (page number 139 to 141 and 182, 183)

UNIT II – Chapter 15 (page number 341 to344)

UNIT III – Chapter 12 and 9 (page number 294 to 296 and 195 to 197)

UNIT IV – Chapter 17 (page number 384 to 386)

UNIT V – Chapter 23 and 27 (page number 487 to 489 and 593,594).

**Mapping of CO with PSO**

| | PSO1 | PSO2 | PSO3 | PSO4 | PSO5 | PSO6 |
|---|---|---|---|---|---|---|
| CO1 | 1 | 3 | 1 | 2 | – | 2 |
| CO2 | 1 | 2 | – | 3 | 1 | – |
| CO3 | 3 | – | 2 | – | 3 | 1 |
| CO4 | 2 | 2 | 2 | 1 | – | 3 |
| CO5 | 2 | 3 | 3 | 3 | 2 | 1 |

**3. Advanced Application 2. Intermediate Development 1. Introductory Level**

**COURSE DESIGNER: Prof. N. H. SARAVANAN**

**Passed in the BoS Meeting held on 09/03/2024** **Signature of the Chairman**