Progressive Education Society's

Modern college of Arts, Science and Commerce,

Ganeshkhind,Pune-16

Autonomous

NEP 2020 (2)

Department of Mathematics

(Faculty of Science and Technology)

Open Elective Course (OE)

First Year

Choice Based Credit System Syllabus

To be implemented from Academic Year 2024-25

Open Elective Course (OE) – Mathematics

Semester	Paper Code	Title of the Paper	Theory / Practical	No. of Credits
1	24MAT11303	Quantitative Aptitude for Competitive Examinations.	Theory	2
2	24MAT12303	Logical Reasoning for Competitive Examinations.	Theory	2

Semester – 1

Paper Code : 24MAT11303 **Total No. of Credits : 2**

Name of the Paper : Quantitative Aptitude for Competitive Examinations.

(Theory)

Total No. of lectures : 30

Course Outcome	
CO	**Details**
CO1	Student gets the knowledge about fundamental concepts in Mathematics.
CO2	Computational skills are enhanced
CO3	Students will able to solve the problems in competitive examinations.
CO4	Students will have skills and ability to solve complex mathematical quantities or equations by analytical and logical means.

Detailed Syllabus

1. Number System.
2. Sum, Cyclicity, exponents, division , Factors, Remainder.
3. Area.

4. Average.
5. Surds and indices.
6. Ratio and Proportion.
7. LCM and HCF.
8. Square root and Cube root.
9. Volume and surface area.
10. Alligation or mixture.
11. Partnership.
12. Problems on Ages.
13. Percentage.
14. Simple Interest.
15. Compound Interest.
16. Bankers's Discount.
17. Profit and loss.
18. Time and Distance.
19. Problems on Trains.
20. Boat and streams.
21. Time and Work.
22. Pipes and Cisterns.
23. Permutations and Combinations.
24. Probability Theory.
25. Data Interpretation.

Textbook

1) Quantitative Aptitude-Dr. R. S. Aggarwal , S. Chand

Semester – 2

Paper Code : 24MAT12303 **Total No. of Credits : 2**

Name of the Paper : Logical Reasoning for Competitive Examinations (Theory).

Total No. of lectures : 30

Course Outcome	
CO	**Details**
CO1	Student gets the knowledge about fundamental concepts in Mathematics.
CO2	Computational skills are enhanced
CO3	Students will able to solve the problems in competitive examinations.
CO4	Students will have skills and ability to solve complex mathematical quantities or equations by analytical and logical means.

Detailed Syllabus

1) Alphanumerical Series
2) Reasoning Analogies
3) Mirror and water images
4) Odd one out
5) Picture Series and sequences
6) Paper folding
7) Puzzles
8) Pattern Series and sequences
9) Order and Ranking
10) Seating arrangement
11) Statement and Assumptions

12)Statement and Conclusions

13)Syllogism

14)Artificial Language

15)Blood Relations

16)Calendars

17)Clocks

18)Decision Making

19)Deductive reasoning

20)Critical Path

21)Directions

22)Cubes and Cuboid

23)Dices

24)Embedded images

25)Figure matrix

26)Input-Output

27)Data Sufficiency

28)Cause and effects

29)Coding-Decoding

Textbook

1) A Modern Approach to Verbal and Non-Verbal Reasoning. : Dr. R. S. Aggarwal , S. Chand