**BOARD OF INTERMDIATE EDUCATION, A.P., HYDERABAD**
**REVISION OF SYLLABUS**
**SUBJECT- MATHEMATICS-IIA (w.e.f. 2013-2014)**

| CHAPTERS | PERIODS |
|---|---|
| **ALGEBRA** | |
| **01 Complex Numbers:** | |
| 1.1 Complex number as an ordered pair of real numbers- fundamental operations | 03 |
| 1.2 Representation of complex numbers in the form a+ib. | 03 |
| 1.3 Modulus and amplitude of complex numbers –Illustrations. | 03 |
| 1.4 Geometrical and Polar Representation of complex numbers in Argand plane- Argand diagram. | 04 |
| | **13** |
| **02 De Moivre's Theorem:** | |
| 2.1 De Moivre's theorem- Integral and Rational indices. | 05 |
| 2.2 $n^{th}$ roots of unity- Geometrical Interpretations – Illustrations. | 05 |
| | **10** |
| **03 Quadratic Expressions:** | |
| 3.1 Quadratic expressions, equations in one variable | 02 |
| 3.2 Sign of quadratic expressions – Change in signs – Maximum and minimum values | 04 |
| 3.3 Quadratic inequations | 02 |
| | **08** |
| **04 Theory of Equations:** | |
| 4.1 The relation between the roots and coefficients in an equation | 04 |
| 4.2 Solving the equations when two or more roots of it are connected by certain relation | 06 |
| 4.3 Equation with real coefficients, occurrence of complex roots in conjugate pairs and its consequences | 05 |
| 4.4 Transformation of equations - Reciprocal Equations. | 06 |
| | **21** |

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| **05 Permutations and Combinations:** | |
| 5.1 Fundamental Principle of counting - linear and circular permutations | 03 |
| 5.2 Permutations of 'n' dissimilar things taken 'r' at a time | 03 |
| 5.3 Permutations when repetitions allowed | 03 |
| 5.4 Circular permutations | 04 |
| 5.5 Permutations with constraint repetitions. | 03 |
| 5.6 Combinations-definitions and certain theorems | 07 |
| | **23** |
| **06 Binomial Theorem:** | |
| 6.1 Binomial theorem for positive integral index | 12 |
| 6.2 Binomial theorem for rational Index (without proof). | 08 |
| 6.3 Approximations using Binomial theorem | 04 |
| | **24** |
| **07 Partial fractions:** | |
| 7.1 Partial fractions of f(x)/g(x) when g(x) contains non –repeated linear factors. | 02 |
| 7.2 Partial fractions of f(x)/g(x) when g(x) contains repeated and/or non-repeated linear factors. | 03 |
| 7.3 Partial fractions of f(x)/g(x) when g(x) contains irreducible factors. | 02 |
| | **07** |
| **PROBABILITY** | |
| **08 MEASURES OF DISPERSION** | |
| 8.1 Range | 01 |
| 8.2 Mean deviation | 03 |
| 8.3 Variance and standard deviation of ungrouped/grouped data. | 07 |
| 8.4 Coefficient of variation and analysis of frequency distribution with equal means but different variances. | 04 |
| | **15** |

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| **09 Probability**<br>9.1 Random experiments and events<br>9.2 Classical definition of probability, Axiomatic approach and addition theorem of probability.<br>9.3 Independent and dependent events conditional probability- multiplication theorem and Bayee's theorem.<br><br>**10 Random Variables and Probability Distributions:**<br>10.1 Random Variables<br>10.2 Theoretical discrete distributions – Binomial and Poisson Distributions | <br>06<br>05<br><br>07<br><br>**18**<br><br>04<br><br>07<br><br>**11** |
| **TOTAL** | **150** |

## ADDITIONAL READING MATERIAL

For the benefit of students who want to appear for competitive exams based on COBSE the following topics may be given as additional reading material.

1. Exponential and Logarithmic Series
2. Linear Programming.

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