INDIRA GANDHI (P.G.) MAHILA MAHAVIDYALAYA, KAITHAL

Affiliated to Kurukshetra University, Kurukshetra

Department Of Science

Lesson Plan (Session 2025-2026)

Class: B.Sc./B.A. Semester: **III**

Name of the Course: Quantitative Aptitude Course Code: B23-SEC-326

Dates: 22 July, 2025 – 24 Nov., 2025

SYLLABUS

Maximum Marks: 100 Time: 3 hours

End Term Exam Marks: 35(T)+20(P)=55 Marks Assessment:15(T)+5(P)= 20 Marks

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will contain 7 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question.

Unit	Topics	Contact Hours
Unit: I	Linear Equations, Quadratic equations, System of algebraic equations in two variables and their applications in simple problems: Problems on ages, Clocks.	8
Unit: II	Time and distance: Problems based on trains, Boats and Streams, Pipes and Cistern. Work and time: Problems on work and time, Work and wages.	8
Unit: III	Simple interest, Compound Interest, Partnership. Basic idea of set theory to solve practical problems. Trigonometric ratios and identities, Height and distance.	8
Unit: IV	Basic idea of Permutations and Combinations. Events and sample space, Probability. Data interpretation: Raw and grouped data, Bar Graph, Pie Chart, Mean, Median and Mode.	8
V*	Problems related to clocks, To write the date of birth of your family members and determine the day of their birth, Compare the simple interest and compound interest for a given amount deposited for fixed time at a fixed rate, Problems related to upstream and downstream of boat, Write down the sample space for tossing three coins one by one and determine the probabilities of occurrence of all possibilities of heads, Problems related to partnership, Draw Venn Diagram for the following (i)Union of sets (ii) Intersection of sets (iii)Difference of sets (iv) Symmetric difference (iv) Complement of a set, Draw a bar-graph for the percentage of expenditure occurred on miscellaneous heads (atleast 5 items) for your family income and write your observation in respect of bar30 34(1064) graph, Draw a pie-chart by taking data of problem (8), Taking the annual export data for three companies for last six years , draw a line- graph, Write atleast two different practical problems related to set theory and solve them with the help of venndiagram/formula, Problem solving relatedto pipes and cisterns, Problem solving related to determination of time taken by two trains of given lengths, to cross each other, when their speeds are given, Problem solving related to permutation and combination, Problems involving formulation and solution of quadratic equations in one variable, Formulation and solution of realistic problems to solve system of linear equations, Draw the following: (i) linear equation x =a (ii)) linear equation y =a (iii) linear equation a x +b y = c, Draw a graph for system of equations a x +by =c; d x + e y = f (a, b, c, d are real numbers) taking suitable values for a, b, c, d , e, f and depict the (i)Unique Solution (ii)No Solution(iii)Infinitely many solution. Also state the condition for general system a x +by =c; d x + e y = f to have all three possibilities for solution (Unique Solution, No Solution &Infinitely many solution).	30

Text Books :

1. R. S. Aggarwal (2022), Arithmetic (subjective and objective), S Chand & Company Limited, New Delhi.
2. M.L. Bhargava, Elements of Quantitative Aptitude, Jeevansons Publications.

Course Outcomes

After completing this course, the learner will be able to:

1. Comprehend the formulation of equations for specific mathematical problems and use mathematical skills to solve those.

2. Acquire the procedural knowledge to analyze and solve problems related to work &time , work and wages and apply those in real life situations.

3. To get deeper knowledge and understanding of concepts of Simple interest, Compound Interest, Partnership, Work and time and use this procedural knowledge to perform assigned tasks of solving such problems.

4. Familiarize and get acquainted with various measures of central tendency and using cognitive skills to choose better of these for the available data and draw the inferences/results.

5. Attain a range of cognitive and technical skills to analyze and comprehend various numerical concepts, e.g., Formulation of equations, S.I. & C.I., Work & time, Work & Wages, Set theory etc. and apply these learned skills and techniques to solve daily life mathematical problems

Lesson Plan

SR. No	Date	Course Content	
		Theory (2)	**Practical (2)**
1	22 July -25July 2025	Linear Equations, Quadratic equations	-----
2	28 July - 2 August	System of algebraic equations in two variables and their applications in simple problems	-----
3	4 August -8 August	Problems on ages, Clocks	To solve problems related to clocks.
4	11 August - 14 August	Time and distance	To write the date of birth of your family members and determine the day of their birth.
5	18 August - 23August	Problems based on trains, Boats and Streams	1.Compare the simple interest and compound interest for a given amount deposited for fixed time at a fixed rate. 2. Problems related to upstream and downstream of boat
6	25 August -30 August	Pipes and Cistern	Write down the sample space for tossing three coins one by one and determine the probabilities of occurrence of all possibilities of heads.
7	1 Sept. - 6 Sept.	Work and time: Problems on work and time	Problems related to partnership.
8	8 Sept. - 13 Sept.	Work and wages	Draw Venn Diagram for the following (i)Union of sets (ii) Intersection of sets (iii)Difference of sets (iv) Symmetric difference (iv) Complement of a set.
9	15 Sept. - 20 Sept.	Simple interest, Compound Interest	Draw a bar-graph for the percentage of expenditure occurred on miscellaneous heads (atleast 5 items) for your family income and write your observation in respect of bargraph.
10	22 Sept. - 27 Sept.	Partnership, Basic idea of set theory to solve practical problems	Draw a pie-chart by taking data of problem (8)..
11	29 Sept.- 4 Oct.	Trigonometric ratios and identities	Taking the annual export data for three companies for last six years , draw a line- graph.
12	6 Oct.- 11 Oct.	Height and distance	Write atleast two different practical problems related to set theory and solve them with the help of venndiagram/formula.
13	13 Oct.- 18 Oct.	Basic idea of Permutations and Combinations.	Problem solving related to pipes and cisterns
14	27 Oct. - 1 Nov.	Events and sample space	Problem solving related to determination of time taken by two trains of given lengths, to cross each other, when their speeds are given.
15	3 Nov. - 8Nov	Probability	Problem solving related to permutation and combination.
16	10 Nov-15 Nov	Data interpretation: Raw and grouped data	Problems involving formulation and solution of quadratic equations in one variable.
17	17 Nov -22 Nov	Bar Graph, Pie Chart	1. Formulation and solution of realistic problems to solve system of linear equations. 2. Draw the following: (i) linear equation x =a (ii)) linear equation y =a (iii) linear equation a x +b y = c.
18	24 Nov.	Mean, Median and Mode	Draw a graph for system of equations a x +by =c; d x + e y = f (a, b, c, d are real numbers) taking suitable values for a, b, c, d , e, f and depict the (i)Unique Solution (ii)No Solution (iii)Infinitely many solution. Also state the condition for general system a x +by =c; d x + e y = f to have all three possibilities for solution (Unique Solution, No Solution &Infinitely many solution).

Signature of Teacher **Head of Department**