

GOVERNMENT POLYTECHNIC JAJPUR

A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019

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LESSON PLAN

1ST SEMESTER, MATH & SC

| DISCIPLINE | SEMESTER | NAME OF THE TEACHING FACULTY: Pragyan Priyadarsini |
|-----------------------------------|-------------------------------|--|
| SUBJECT: ENGG. M MATHEMATICS-I | NO. OF DAYS/WEEKS CLASS | SEMESTER FROM DATE : 25/10/2022 TO DATE: 31/01/2023 NO. OF WEEKS: 15 |
| WEEKS | CLASS DAY | TOPICS |
| 1st | 1st | i) Introduction of matrices |
| | 2nd | ii) Types of matrices |
| | 3rd | iii) Algebra of matrices (sum) |
| | 4th | iv) Algebra of matrices (Difference) |
| | 5th | v) Product of matrices |
| 2nd | 1st | i) Product of matrix and a scalar |
| | 2nd | ii) Equality of matrices |
| | 3rd | iii) Transpose of matrix |
| | 4th | iv) Co-factor |
| | 5th | v) Determinant of third order |
| 3rd | 1st | i) Inverse of a matrix(Third order) |
| | 2nd | ii) Cramer's Rule three equations and three unknowns |
| | 3rd | iii) Cramer's Rule two equations and three unknowns iii) Class test-1 |
| | 4th | iv) Cramer's Rule three equations and three unknowns |
| | 5th | v) Relation between Trigonometrical ratios |
| 4th | 1st | i) Trigonometrical ratios |
| | 2nd | ii) Inverse function |
| | 3rd | iii) Discuss Addition formulae and Difference formulae |
| | 4th | iv) Compound angles with examples |
| | 5th | v) Multiple and sub-multiple angles with examples |
| 5th | 1st | i) Quadrant |
| | 2nd | ii) Discuss Exercise of Trigonometry |
| | 3rd | iii) Discuss objective type questions with answer |
| | 4th | iv) Introduction of Inverse Trigonometry function |
| | 5th | v) Domain and Range of Inverse Trigonometry function |
| 6th | 1st | i) Properties of Inverse Trigonometry functions |
| | 2nd | ii) Discuss Exercise of Trigonometry |
| | 3rd | iii) Introduction of geometry in two dimension |
| | 4th | iv) Area of a triangle |
| | 5th | v) Define slope of a line |
| 7th | 1st | i) Angle between two lines |
| | 2nd | ii) condition of perpendicularity and parallelism. |
| | 3rd | iii) Discuss objective type questions with answer |
| | 4th | iv) Class test-2 iv) Different forms of straight lines |
| | 5th | v) One point form |
| | 1st | i) Distance formulae |
| | 2nd | ii) Two point form |

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| 8th | 3rd | iii) Centroid of Triangle |
| | 4th | iv) Slope form |
| | 5th | v) Intercept form |
| 9th | 1st | i) Parallel to a line & Perpendicular to a line |
| | 2nd | ii) Parallel to a plane |
| | 3rd | iii) Distance of a point from a line |
| | 4th | iv) Discuss objective type questions with answer |
| | 5th | v) Equation of a circle |
| 10th | 1st | i) center radius form |
| | 2nd | ii) Center radius form |
| | 3rd | iii) Equation of circle passing through three given points |
| | 4th | iv) Equation of a circle with given end points of a diameter |
| | 5th | v) Introduction of geometry in three dimension |
| 11th | 1st | i) Section formulae |
| | 2nd | ii) Centroid of Triangle |
| | 3rd | iii) Direction cosine |
| | 4th | iv) Angle between two lines |
| | 5th | v) Condition of parallelism and perpendicularity |
| 12th | 1st | i) Relation between direction ratios and direction cosines |
| | 2nd | ii) Equation of a plane |
| | 3rd | iii) General form |
| | 4th | iv) Angle between two planes with examples |
| | 5th | v) Perpendicular distance of a point from a plane |
| 13th | 1st | i) Parallel to a plane |
| | 2nd | ii) Perpendicular to a plane with examples |
| | 3rd | iii) Equation of a plane passing through three non-collinear points |
| | 4th | iv) Distance of a point from a plane |
| | 5th | v) plane through the intersection of two given planes |
| 14th | 1st | i) introduction of a sphere |
| | 2nd | ii) Equation of a sphere |
| | 3rd | iii) Center radius form |
| | 4th | iv) Important questions of find Rdius and centre |
| | 5th | iv) General equation of sphere |
| 15th | 1st | i) some examples of general equation of sphere |
| | 2nd | ii) Equation of sphere passing through four given points |
| | 3rd | iii) Examples of Equation of sphere passing through four given points |
| | 4th | iv) Two end points of a diameter form |
| | 5th | v) Discuss Exercise of sphere |

EXTRA 1 WEEK IS NEEDED TO COMPLETE THE COURSE

LERNING RESOURCES

| SL.NO | AUTHOR | TITLE OF THE BOOK | PUBLISHER |
|-------|--|---------------------------------------|------------------------|
| 1 | CHITTARANJAN MALLICK & SUSMITA MALLICK | ENGINEERING MATHEMATICS PART -1 | KALYANI |
| 2 | ODISHA STATE BUREAU EXPERTS | ELEMENTS MATHEMATICS - Vol.- 1 & 2 | ODISHA STATE BUREAU |
| 3 | R.D SHARMA | MATHEMATICS PART- I & PART- II | NCERT PUBLICATION |

Pragyan Prasadwasi
Signature of the Faculty
(Lect. in Maths)