RPS Degree College, Balana (Mahendergarh) esson Plan



| Section: P So Non Medical 3rd Som | | |
|-----------------------------------|---|--|
| Subject: Inorganic Chemistry | | |
| Lecture | Topics | |
| 1 | Introduction to Syllabus | |
| 2 | Werner coordination theory | |
| 3 | Werner coordination theory | |
| 4 | Werner coordination theory | |
| 5 | Effective Atomic Number | |
| 6 | Effective Atomic Number | |
| 7 | Effective Atomic Number | |
| 8 | Effective Atomic Number | |
| 9 | Nomenclature of Coordination compound | |
| 10 | Nomenclature of Coordination compound | |
| 11 | Nomenclature of Coordination compound | |
| 12 | Nomenclature of Coordination compound | |
| 13 | Nomenclature of Coordination compound | |
| 14 | Isomerism in coordination compound | |
| 15 | Isomerism in coordination compound | |
| 16 | Isomerism in coordination compound | |
| 17 | Isomerism in coordination compound | |
| 18 | Valence bond theory | |
| 19 | Valence bond theory | |
| 20 | Valence bond theory | |
| 21 | Valence bond theory | |
| 22 | Physical properties of solvents | |
| 23 | Physical properties of solvents | |
| 24 | Physical properties of solvents | |
| 25 | Types of solvents | |
| 26 | Types of solvents | |
| 27 | Reaction in liq NH3 as a non aqueous solvent | |
| 28 | Reaction in liq NH3 as a non aqueous solvent | |
| 29 | Reaction in liq NH3 as a non aqueous solvent | |
| 30 | Reaction in liq SO2 as a non aqueous solvent | |
| 31 | Reaction in liq SO2 as a non aqueous solvent | |
| 32 | Reaction in liq SO2 as a non aqueous solvent | |
| 33 | Reaction in liq SO2 as a non aqueous solvent | |
| 34 | Defination of transition elements, position in the periodic table | |
| 35 | General Characteristic of first row transition elements | |

| 36 | General Characteristic of first row transition elements |
|----|---|
| 37 | General Characteristic of first row transition elements |
| 38 | General Characteristic of first row transition elements |
| 39 | Structure and properties of TiO2 |
| 40 | Structure and properties of TiO2 |
| 41 | Structure and properties of VOC12 |
| 42 | Structure and properties of VOC12 |
| 43 | Structure and properties of FeC13 |
| 44 | Structure and properties of FeC13 |
| 45 | Structure and properties of CuCl2 |
| 46 | Structure and properties of CuCl2 |
| 47 | Structure and properties of Ni(CO)4 |
| 48 | Structure and properties of Ni(CO)4 |



RPS Degree College, Balana (Mahendergarh)

sson Plan Class : B.Sc. Non Medical 3rd Sem Subject : Organic Chemistry

| Lecture | Topics |
|---------|---|
| 1 | Introduction of Syllabus |
| 2 | Alcohols Classification and nomenclature. Monohydric alcohols |
| 3 | Nomenclature, methods of formation by reduction of aldehydes |
| 4 | Ketones, carboxylic acids and esters. |
| 5 | Hydrogen bonding. Acidic nature. |
| 6 | Reactions of alcohols. |
| 7 | Dihydric alcohols — nomenclature, |
| 8 | methods of formation, |
| 9 | Chemical reactions of vicinal glycols, oxidative cleavage [Pb(OAc) 4 and HIO 4] |
| 10 | Pinacol- pinacolone rearrangement |
| 11 | CLASS TEST |
| 12 | Phenols Nomenclature, structure and bonding |
| 13 | Preparation of phenols, |
| 14 | Physical properties and acidic character |
| 15 | Comparative acidic strengths of alcohols and phenols |
| 16 | Resonance stabilization of phenoxide ion. |
| 17 | Reactions of phenols — electrophilic aromatic substitution |
| 18 | Acylation and carboxylation. |
| 19 | Mechanisms of Fries rearrangement |
| 20 | Claisen rearrangement, Gatterman synthesis |
| 21 | ReimerTiemann reaction |
| 22 | Epoxides Nomenclature of ethers and methods of their formation |
| 23 | Physical properties |
| 24 | Synthesis of epoxides |
| 25 | Acid and base- catalyzed ring opening of epoxides |
| 26 | Orientation of epoxide ring opening, |
| 27 | Electrophilic and nucleophlic reagents |
| 28 | Reactions of Grignard and organolithium reagents with epoxides |
| 29 | REVISION OF SECTION B |
| 30 | CLASS TEST, |
| 31 | Carboxylic Acids& Derivatives |
| 32 | Nomenclature, structure and bonding, physical properties |
| 33 | Acidity of carboxylic acids |
| 34 | Preparation of carboxylic acids |
| 35 | Reactions of carboxylic acids. Hell- Volhard- Zelinsky reaction |
| 36 | Synthesis of acid chlorides, esters and amides |
| 37 | Reduction of carboxylic acids. Mechanism of decarboxylation |

| 38 | Nomenclature of acid chlorides, esters, amides (urea) and acid anhydrides |
|----|---|
| 39 | Relative stability of acyl derivatives. |
| 40 | and substitution |
| 41 | Preparation of carboxylic acid derivatives, chemical reactions |
| 42 | Mechanisms of esterification and hydrolysis (acidic and basic |
| 43 | TEST OF SECTION C |
| 44 | L sub set low) |
| 45 | Presentation and analysis of UV spectra, types of electronic transitions |
| 46 | Urrenshamis and hypothesis may of simplability |
| 47 | Woodward- Fieser rules, calculation of - unsaturated ketones |
| 48 | ov specification, aconjugated dienes and - unsaturated actus, o, |
| 49 | Revision |
| 50 | Revision |

RPS Degree College, Balana (Mahendergarh) on Plan

2020-21(Odd Semester)

Class and Section: B.Sc 3rd Sem Non Medical Subject: Physical Chemistry

| Lecture | Topics |
|---------|---|
| 1 | Introduction of thermodynamics |
| 2 | Definition of system and surrounding and types of system |
| 3 | Extensive and intensive properties |
| 4 | State and path function and there differential |
| 5 | Thermodynamic process |
| 6 | Concept of heat and work |
| 7 | Zeroth law of thermodynamics |
| 8 | First law of thermodynamics |
| 9 | Internal energy and enthalpy heat capacity |
| 10 | Heat capacity at constant volume and pressure and their relation |
| 11 | Joules lion joule Thomson effect |
| 12 | Joule Thomson Coefficient for ideal gas and enthalpy change |
| 13 | Joule Thomson Coefficient for real gas and inversion temperature |
| 14 | calculation of work heat change in internal energy and change in enthalpy in Isothermal reversible expansion of an ideal gas |
| 15 | Calculation of these quantities in adiabatic reversible expansion of an ideal gas |
| 16 | Relation between temperature volume and pressure in case of adiabatic expansion of an ideal gas |
| 17 | Temperature dependence of enthalpy |
| 18 | Kirchoff's equation |
| 19 | Bond energy |
| 20 | Bond energy |
| 21 | Applications of bond energy |
| 22 | Applications of bond energy |
| 23 | Introduction of chemical equilibrium |
| 24 | Equilibrium constant and free energy |
| 25 | Concept of chemical potential |
| 26 | Thermodynamic derivation of law of chemical equilibrium |
| 27 | Temperature dependence of equilibrium constant |
| 28 | Vant Hoff reaction isochore |
| 29 | Vant Hoff reaction isotherm |
| 30 | Le Chatelier Principle |
| 31 | applications |
| 32 | Clausius Clapeyron equation |
| 33 | Applications of clausius clapeyron equation |

| 34 | Continued |
|----|--|
| 35 | Introduction of distribution law |
| 36 | Thermodynamic derivation of distribution law |
| 37 | Modification of distribution law when solute undergoes dissociation |
| 38 | In Association |
| 39 | In chemical combination |
| 40 | Applications of distribution law in determination of degree of hydrolysis of aniline hydrochloride |
| 41 | In determination of hydrolysis constant of aniline hydrochloride |
| 42 | In determination of equilibrium constant of potassium tri iodide complex |
| 43 | Application of distribution law in the process of extraction |
| 44 | Application of distribution law in the process of extraction |
| 45 | Numerical problems on distribution law |
| 46 | Numerical problems on process of extraction |
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RPS Degree College, Balana (Mahendergarh)

n Plan B.Sc. Non Medical 3rd Sem Subject : Advanced Calculus

| Subject : A | dvanced Calculus |
|-------------|--|
| Lecture | Topics |
| 1 | Definition of continuity |
| 2 | Sequential continuity |
| 3 | Properties of continuous function |
| 4 | Uniform continuity |
| 5 | Chain rule of differentiability |
| 6 | Mean value theorem |
| 7 | Rolles theorem |
| 8 | Lagrange mean value theorem |
| 9 | Geometric interpretation of mean value theorem |
| 10 | Taylor's theorem |
| 11 | Taylor's theorem with various form of remainders |
| 12 | Darboux theorem |
| 13 | Intermediate value theorem |
| 14 | Indeterminate form |
| 15 | L'hospital rule |
| 16 | / indeterminate form |
| 17 | Continuity of function of two variable |
| 10 | Partial differentiation |
| 20 | Problems on partial differentiation |
| 20 | Composite function |
| 21 | Differentiation by composite rule |
| 23 | Problems on composite rule differentiation |
| 24 | Implicit function |
| 25 | Change of variable |
| 26 | Euler theorem |
| 27 | HOMOGENOUS function |
| 28 | Indeterminate form |
| 29 | Euler theorem for homogenous function |
| 30 | Taylor's theorem for function of two variable |
| 31 | Problems on Taylor theorem |
| 32 | Function of two variable |
| 33 | Concept of function of two variable |
| 34 | Differentiability of function of two variables |
| 35 | Schwartz theorem |
| 36 | Young's theorem |
| 37 | Implicit function theorem |
| 38 | Problems on implicit function theorem |
| 39 | Maxima of function of two variables |
| 40 | Minima of function of two variables |
| 41 | Lagrange method of multiplier |
| 42 | Partial differentiation |
| 45 | Problems on Lagrange method of multiplier |
| 44 | Properties |
| 45 | Principal normal and hi normal |
| 47 | Serret frenet formula |
| 48 | Locus of centre of curvature |
| 49 | Spherical curvature |
| 50 | Involute |
| 51 | Problems on involute |
| 52 | Evolute |
| 53 | Bertand curve |
| 54 | Tangent plane |
| 55 | One parameter family of surface |
| 56 | Problems Discussion |
| 57 | Envelope |
| 58 | Presentation Lecture |
| 59 | Problems Discussion |
| 60 | Problems Discussion |
| 61 | Problems Discussion |
| 62 | Presentation Lecture |
| 63 | Subject Extensions |
| 64 | Future Scope of the Subject Matter |

RPS Degree College, Balana (Mahendergarh)



2020-21(Odd Semester)

Class and Section: B.Sc. Non Medical 3rd Sem. Subject: Partial Differential Equation

| Lecture | Topics |
|---------|---|
| 1 | Introduction to Syllabus, Scheme of Exam & Learning |
| 1 | Objectives/Outcomes |
| 2 | Test to Check the Learning Level of the Students |
| 3 | Useful equation in cylinderical coordinates |
| 4 | Solution of laplace equation in cylinderical co-ordinates |
| 5 | formation of equation by elimination of arbitrary functions |
| 6 | Nature of solutions |
| 7 | Question practice |
| 8 | Solution by lagranges method |
| 9 | Exercise questions |
| 10 | Compatible system of p.d.e |
| 11 | Charpit's method |
| 12 | Examples |
| 13 | Complete integrals |
| 14 | Jacobi's Method |
| 15 | Importantant formulas |
| 16 | Example practice |
| 17 | Second order p.d.e |
| 18 | Example practice |
| 19 | Solution of non homogeneous p.d.e |
| 20 | Exercise questions |
| 21 | Example practice |
| 22 | P.d.e with variable coefficients |
| 23 | Example practice |
| 24 | Example practice |
| 25 | Exercise questions |
| 26 | Canonical forms of second order linear p.d.e |
| 27 | Example practice |
| 28 | Solution of linear hperbolic equations |
| 29 | Example |
| 30 | Exercise questions |
| 31 | Cauchy problem |
| 32 | Example based on above concept |
| 33 | Characteristic curve |
| 34 | Characteristic equations |
| 35 | Wave equations |
| 36 | Solution of wave equations |
| 37 | Bounded and unbounded metric space |
| 38 | Examples |
| 39 | Laplace equation |
| 40 | Solution of laplace equations |
| 41 | question practice |
| 42 | Example practice |
| 43 | Heat equation |
| 44 | Solution ofheat equations |
| 45 | Example practice |

| 46 | Solution of laplace equation satisfying given initial cond. |
|----|---|
| 47 | Question practice |
| 48 | Monge's Method for solving p.d.e |
| 49 | Exercise questions |
| 50 | Example practice |
| 51 | Example practice |
| 52 | Revision |
| 53 | Revision |
| 54 | Functions behaviour |
| 55 | Type of discontinuity |

RPS Degree College, Balana (Mahendergarh) son Plan

2020-21(Odd Semester)

| Class and Section: B.Sc Non Medical 3rd Sem Subject: Statics | | |
|---|--|------------------------------|
| | | |
| 1 | Introduction to Syllabus, Scheme of Exam & | Learning Objectives/Outcomes |
| 2 | Test to Check the Learning Level of the Students | |
| 3 | Composition of forces | |
| 4 | Examples on last topic | |
| 5 | resolution of forces | |
| 6 | Examples on last topic | |
| 7 | Examples on last topic | |
| | | |

| 8 | Parallel forces |
|----|---|
| 9 | Examples on last topic |
| 10 | Examples on last topic |
| 11 | Examples on last topic |
| 12 | Moments |
| 13 | Examples on last topic |
| 14 | Examples on last topic |
| 15 | Couples |
| 16 | Analytical conditions of equilibrium of coplanar forces |
| 17 | Examples on last topic |
| 18 | Examples on last topic |
| 19 | Friction |
| 20 | Examples on last topic |
| 21 | Examples on last topic |
| 22 | Examples on last topic |
| 23 | Examples on last topic |
| 24 | Centre of Gravity |
| 25 | Examples on last topic |
| 26 | Examples on last topic |
| 27 | Virtual work |
| 28 | Examples on last topic |
| 29 | Examples on last topic |
| 30 | Forces in three dimensions |
| 31 | Examples on last topic |
| 32 | Examples on last topic |
| 33 | Poinsots central axis |
| 34 | Examples on last topic |

35

Examples on last topic

| 36 | Wrenches |
|----|---------------------------------|
| 37 | Examples on last topic |
| 38 | Examples on last topic |
| 39 | Examples on last topic |
| 40 | Null lines and planes |
| 41 | Examples on last topic |
| 42 | Examples on last topic |
| 43 | Stable and unstable equilibrium |
| 44 | Examples on last topic |
| 45 | Examples on last topic |
| 46 | Examples on last topic |
| 47 | Examples |
| 48 | More examples |
| 49 | Revision |
| 50 | Revision |



Lesson plan Class and Section: B.SC. Non Medical 3rd Sem Subject: COMPUTER PROGRAMMING AND THERMIDYNAMICS

| Lectures | Topics |
|----------|--|
| 1. | COURSE INTRODUCTION |
| 2. | Phase, phase transition, latent heat |
| 3. | Derivation of Clausius - Claperyron latent heat equation |
| 4. | Continues same topic. |
| 5. | Second latent heat equation, |
| 6. | phase diagram |
| 7. | Triple point of water |
| 8. | Perfect differentials, introduction to Maxwell's thermodynamical |
| | relations |
| 9. | Class Test 01 |
| 10. | Development of Maxwell's thermodynamical relations |
| 11. | Continues same topic |
| 12. | Thermodynamic functions : Internal energy (U), Helmholtz |
| | function (F), Enthalpy |
| | (H), Gibbs function (G) and the relations between them |
| 13. | Continue same topic |
| 14. | Continue same topic |
| 15. | Continue same topic |
| 16. | Maxwell's relations from thermodynamical functions |
| 17. | Application of Maxwell relations in the derivation of |
| | relations between entropy, specific heats and thermodynamic |
| | variables |
| 18. | Continue same topic |
| 19. | Continue same topic |
| 20. | Continue same topic |
| 21. | Continue same topic |
| 22. | Revision |
| 23. | Problems and revision |
| 24. | Computer Programming |
| 25. | Computer organization |
| 26. | Binary representation |
| 27. | Algorithm development, |
| 28. | flow charts and their interpretation |
| 29. | Fortran Preliminaries |
| 30. | Integer and floating point arithmetic expression, built in functions |
| 31. | executable and non-executable statements |
| 32. | Class test 02 |

| 33. | input and output statements |
|-----|---|
| 34. | Formats, I.F. DO and GO TO statements, |
| 35. | Dimension arrays statement |
| 36. | function subprogram, subroutine subprogram |
| 37. | Problems and revision |
| 38. | Revision of unit 2 (unit completed in online class) |
| | Thermodynamics-I: Second law of thermodynamics |
| 39. | Carnot theorem, Absolute scale of temperature |
| 40. | Absolute Zero, ENTROPY |
| 41. | T-S diagram, Nernst heat law |
| 42. | Joule's free expansion |
| 43. | Joule Thomson (Porous plug) experiment |
| 44. | Liquefication of gases |
| 45. | Air pollution due to internal combustion Engine |
| 46. | Previous year question paper discussion |
| 47. | Previous year question paper discussion |
| 48. | Problems and revision |

Class and Section: B.Sc. Non Medical 3rd Sem.

Subject: OPTICS-I (PHY 302)

| Lecture | Торіс |
|---------|---|
| 1. | Introduction of unit ,Introduction to Optics, Wave fronts, Types of waves, |
| | Transverse and longitudinal waves. |
| 2. | Interference by youngs slits experiment, Expression for fringe width |
| 3. | Analytical treatment for intensity distribution, Redistribution of energy |
| | Introduction to fresenlsbiprism |
| 4. | Fresenlsbiprism, Construction and working, Application of biprism |
| 5. | Determination of thickness of sheet using biprism, Determination of wavelength |
| 6. | Lloyd mirror introduction, Construction and working |
| 7. | Difference between biprism and Lloyds mirror, Numerical realted to fringe width |
| 8. | Phase change on reflection, Stokes law |
| 9. | Numericals of unit |
| 10. | Conceptual questions related to unit |
| 11. | Types of waves and speed of transverse wave in a string |
| 12. | Fourier series |
| 13. | Dirchelet conditions |
| 14. | Fourier series applications |
| 15. | Series of different limits |
| 16. | Fourier series in complex format |
| 17. | Values of constants |
| 18. | Fourier coefficients |
| 19. | Solution of triangular wave |
| 20. | Solution to the rectangular wave |
| 21. | Revise the two solution |
| 22. | Half wave rectifier output solution |
| 23. | Full wave rectifier output solution |
| 24. | Previous year question paper solved and numericals of unit |

| 25. | Introduction to fourier transform |
|-----|--|
| 26. | Application to fouriertranformation |
| 27. | Exponential function solution |
| 28. | Introduction to geometrical optics |
| 29. | Matrix method |
| 30. | effect of translation |
| 31. | Derivation of lens formula |
| 32. | Thick and thin lens |
| 33. | Unit plane nodal planes |
| 34. | Chromatic, spherical coma, distortions |
| 35. | Importance of geometrical optics |
| 36. | Solved numericals of unit |
| 37. | Numerical problem |
| 38. | Revision of unit- 1. 2,3 |
| 39. | Previous years paper solved |
| 40. | Previous years paper solved |

RPS Degree College, Balana (Mahendergarh) Lesson Plan 2020-21(Odd Semester) Class and Section: B.Sc(Non Medical & Medical) 3rd Sem

Subject: Sanskrit

(महम्मम) B. Sc. Non. Medical (Riter 3717917) B. Sc. Medical . (Riter 371797) John - 241181217 वेद, उपनिषद् 7: 21757. राज्यान्धनः स्नामान्य झाने पाठानुस्नारं। 42H: FICT21: इरार-तनः पाठरम् पत्रम् वलामाः सम्पूर्णाः ट्यारमा स्नाहतः Teatre FICTIZT: -त्तायः कालाशः वयं त्यास् यजामः वाठः सम्पूर्णः व्यास्या साहतः । यत्रधः कालगराः -ह रामायन रमनान्धानः रमामान्य सानं। पंचमः कालांशः – 6 धर्मज्ञः रामः १ पाठस्य स्पत व्लोकाः समपूर्णाः | पाठोडाप समपूर्णः व्यारव्या स्महत । En live less lesses & seles pris detail a minister de la prise यठाः कालांशः _ हश्मेतः रामः पाठस्य रगत श्लोकाः रनम्पूर्णाः । पार्डोडाय सम्पूर्णः स्वारव्या स्वहिता Contractor Peter 123 214 + Peter pille a la la contracto sites by रनम्तरः कालाशः - 6 सुन्दरकाण्ड २ सम्मान्धानः स्नामान्य ज्ञानं पाठानुसारं end lest all the set i reading dist - the start अत्टमः कालांशः - 6 र्याधुन्नतं चर पाठस्य पत्र्य रलोकाः सम्पूर्णाः ्यारन्या स्तहत। There declarity to be address & do by the folder a ६ रनाधुव्रतं चर' पाठरूप पञ्च इलोकाः सम्पूर्णाः स्वारूपा रनहित । पाठोडाप रनम्पूर्णः । नवमः कालाशः -



- विभीषगस्य विलापः पाठस्य पठ रतीकाः सम्पूर्णाः दृशमः कालायाः व्यारव्या इनहिता रुकादशः कालाशः - ध्विभीयगस्य विलायः पाठस्य युवह रत्नाकाः सम्पूर्णः 2412041 21180:1 द्वादशः मालाशः - ६ विभीषगरम् विलामः १ पाठस्म पवह रलोमाः सम्पूर्णाः व्यारमा स्नाहतः । पाठोडाप सम्पूर्णः भर्मादराः कालाशः - ' र्यक दगरिद्रमम्' पाहरम् पत्र्म दलाकाः सम्पूर्णाः -यतुर्दशः कालाशः - 6 शिक दारिद्रमम् १ पाठरम् अग्रे पत्र्य श्लोकाः व्यारन्या स्पन्निः सम्पूर्णाः । पंचदराः कालाशः - 6 रिंग् दारिद्रयम् पाठस्प अग्रे पत्र्य रलाकाः भोडेशः कालाशः – ¹ र्धिक दगरिद्रमम् 116 - ' रियक् दगरिद्रमम्' पाहरम अग्रे पत्र रतोकाः इनम्पूर्णाः पाहीडाप सम्पूर्णः / a start i start सम्बद्धाः कालाशः - (गर्मः भागः) ह अनुभासनी स्नम्बान्धनः सामान्यः ज्ञानं। 4181727728 1 and the the the for the



37027227: 3710127: -ट अनुशासनम् माह: रनम्पूर्ण: ट्यार्ट्य स्महतः । नवदशः कालाशः - द आयुर्वद भरकात्मनः रनामान्मः सानं पाठानुरमारा विश्वातिः कालांशः - ६ रनद्वत्वत् पाठः सम्पूर्णः व्यारव्या स्महतः । र्यमविश्वातः कालाशः - ६ खादमस्य वलं तस्प पाठः सम्पूर्वः व्याख्या स्तहतः । द्वाविशातः कालाशः - 6 नीलवर्गः भ्यातः भ पाठः रत्मपूर्गः व्यारव्या स्तरितः । त्रयनिदेशातः कालाशः - 6 दाशकर्य चातुर्घम् 9 पाठः सम्पूर्वः ट्यारज्या साहतः । -जनुर्विशानः कालगराः - 6 व्यालक, कार्वे, साधु, जल शब्दर्स् सम्पूर्वः । पज्यानंशातः कालाशाः - ' मात्, पित (सर्व भिषु लिंगणु) शाब्द रूपं सम्पूर्णम् । महन्दिशातः कालांशः - 'भू, अस्, वद् धातु सम्पूर्णः पत्र लकारेषु। स्तर विद्यातिः कालांशः - ४ त्रास्, परु, स्था धातु सम्पूर्गः । अव्याविद्यातिः कालांशः - दीर्घ, गुग, बुद्धि, भग्रसान्धः सम्पूर्गः उदाहरणसाहतः। नवनिंशातः कालांशः - अभादि, प्रहातभाव, पुर्वद्यप, पररूप रनान्धः सम्पूर्वः उदाहरण काहतः । ' इति अलम् ?

