COMPLETE REFERENCE BOOKS FOR CSIR NET/GATE

ORGANIC CHEMISTRY

- **J. Clayden, N. Greeves, S. Warren**, ***Organic Chemistry***, 2nd edition, Oxford Unviersity Press, New Delhi, 2012. (Must have for CSIR NET)
- **R. T. Morrison**, **R. N. Boyd**, ***Organic Chemistry***, 6th edition, Prentice-Hall, New Delhi, 1992. (For Basic understanding, very good for basic concepts)
- **F. A. Carey and R. J. Sundberg**, ***Advanced Organic Chemistry***, Part A & B, 5th ed., Springer, New York, 2007. (For Advance Readers)
- **W. Carruthers and I. Coldham**, ***Modern Methods of Organic Synthesis***, 4th ed., Cambridge University Press, UK, 2004. (For Advance Readers)
- **P. Y. Bruice, K. J. R. Prasad,** ***Essential Organic Chemistry***, 1st edition, Pearson Education, New Delhi, 2008. (Again Fundamental Organic Book)
- Organic Chemistry by LG Wade
- Organic Chemistry by John Mcmurry
- **J. March**, ***Advanced Organic Chemistry***, 4th ed., John Wiley & Sons, Inc., Canada, 1992.
- M. B. Smith, Organic Synthesis, McGraw Hill Higher Education, 2001
- Stuart Warren, Organic Synthesis The Disconnection Approach, John Wiley and Sons, 2005
- Modern Organic Synthesis by Michael Nantz and Zweifel
- Organic Reaction Mechanism by Peter Sykes (Must have for Basic Organic Mechanism)
- Organic chemistry the fundamental principles by Finar
- 3000 solved problems in organic chemistry by Meislich, Estelle K ; Meislich, Herbert ; Sharefkin, Joseph
- Advanced organic chemistry : reactions and mechanisms by Maya Shankar Singh
- Organic chemistry by Loudon
- Name reactions and reagents in organic synthesis By Bradford Mundy

STEREOCHEMISTRY

- Nasipuri, D. Stereochemistry of Organic Compounds: Principles and Applications
- ***Stereochemistry of Organic Compounds***, Wiley: New York, Eleil (BEST BOOK FOR NET)
- Organic stereochemistry by Robinson, Michael J. T

MOLECULAR SPECTROSCOPY

- Spectroscopy by Donald Pavia (Excellent Book for Basic Spectroscopy)
- Organic Spectroscopy by William kemp
- 1H NMR and C13 NMR spectroscopy by Metin and Balcii
- Symmetry and spectroscopy of Molecules by K Veera Reddy (Another Good book for Electronic Spectroscopy)
- Molecular Spectroscopy by Banwell (Basic Book for Physical spectroscopy)
- Spectrometric identification by Silverstein

Advance Additional Readings

- Edwin J. Becker, High Resolution NMR: Theory and Chemical Applications, Academic Press, U. S. A. (2000).
- Jeremy K. M. Sanders and Brian K. Hunter, Modern NMR Spectroscopy: A Guide for Chemists, Oxford University Press, U. K. (1993)
- Andrew E. Derome, Modern NMR Techniques for Chemistry Research, Elsevier, Amsterdam (1987)
- Roger S. Macomber, A Complete Introduction to Modern NMR Spectroscopy, John Wiley & Sons, U. S. A. (1997).
- Malcolm H. Levitt, Spin Dynamics: Basics of Nuclear Magnetic Resonance, John Wiley & Sons, U. S. A. (2008).
- James Keeler, Understanding NMR Spectroscopy, John Wiley & Sons, U. S. A. (2005).
- Richard R. Ernst, Geoffrey Bodenhausen and Alexander Wokaun,Principles of Nuclear Magnetic Resonance in One and Two Dimensions, Oxford University Press, U. K. (1990).
- Eiichi Fukushima and Stephen B. W. Roeder, Experimental NMR: A Nuts and Bolts Approach, Westview Press, U. S. A. (1986)

RELATED LINKS

- ✓ http://www.cis.rit.edu/htbooks/nmr/
- ✓ http://www-keeler.ch.cam.ac.uk/lectures/
- ✓ http://www.chem.queensu.ca/FACILITIES/NMR/nmr/webcourse/
- ✓ http://e-collection.ethbib.ethz.ch/eserv/eth:25262/eth-25262-01.pdf

EPR Spectroscopy

- Principles of Electron Spin Resonance by N. M. Atherton
- Electron Paramagnetic Resonance: Elementary Theory and Practical Applications, 2nd Edition by John A. Weil, James R. Bolton
- Electron Spin Resonance Spectroscopy of Organic Radicals by Fabian Gerson and Walter Huber.
- Electron Spin Resonance:Analysis and Interpretation by Philip Rieger

Additional Advance Reading

- C. P. Poole, Jr., *Electron Spin Resonance: A Comprehensive Treatise on Experimental Techniques*, 2nd edition, New York, John Wiley and Sons, 1983.
- J. R. Pilbrow, *Transition Ion Electron Paramagnetic Resonance.* Oxford, England:Clarendon Press, 1991.
- A. Abragam A and B. Bleaney, *Electron Paramagnetic Resonance of Transition Ions.* Oxford, England: Oxford University Press, 1970.

MOLECULAR SPECTROSCOPY

- P. F. Bernath, Spectra of Atoms and Molecules (Second Edition), Oxford University Press, 2005.
- I. N. Levine, Molecular Spectroscopy, Wliey-Interscience, New York, 1975.
- E. B. Wilson Jr., J. C. Decius and P. C. Cross, Molecular Vibrations, Dover Publications, New York, 1980
- J. M. Hollas, Modern Spectroscopy (Fourth Edition), John Wiley & Sons, New York, 2004.
- J. I. Steinfeld, Molecules and Radiation, Dover, New York, 1986.
- D. C. Harris and M. D. Bertolucci, Symmetry and Spectroscopy: An Introduction to Vibrational and Electronic Spectroscopy, Dover, New York, 1989

ADDITIONAL ADVANCE READINGS

- H. W. Kroto, Molecular Rotation Spectra, Dover, New York, 2003
- W. Demtroder, Laser Spectroscopy (Third Edition), Springer, Berlin, 2003.
- Helene Lefebvre-Brion and R. W. Field, The Spectra and Dynamics of Diatomic Molecules, Elsevier, Amsterdam, 2004
- J. R. Lakowicz, Principles of Fluorescence Spectroscopy, Kluwer Academic, New York, 1999.
- W. Gordy and R. L. Cook, Microwave Molecular Spectra, Wiley, New York, 1984.

PHYSICAL ORGANIC CHEMISTRY

- Neil S. Isaacs, Physical Organic Chemistry, ELBS/Longman, 1987.
- Francis A. Carey and Richard J. Sundberg, Advanced Organic Chemistry, Part A, Structure and Mechanisms, 5th edition, Springer, 2007.
- Jerry March, Advanced Organic Chemistry, Reactions, Mechanims and Structure, 4th Edition, John-Wiley, 1999.
- Thomas H. Lowry, Kathleen S. Richardson, Mechanism and Theory in Organic Chemistry, 2nd Edition, Harper & Row, 1981.
- Modern Physical Organic Chemistry by E.V. Anslyn and D.A. Dougherty, University Science Books, Sausalito, CA, USA, 2006.

RELATED LINKS

- http://www.jaun.ethz.ch/oc8/oc8_desc.html
- http://orgchem.iisc.ernet.in/faculty/um/teaching.html
- http://users.ox.ac.uk/~mwalter/web_05/year3/phys/physical_organic_chemistry.shtml
- http://www.chembio.uoguelph.ca/schwan/chem%20769%20outline%202006.pdf

INORGANIC CHEMISTRY

- Advanced Inorganic Chemistry by F. Albert Cotton, Geoffery Wilkinson, Carlos A. Murillo and Manfred Bochmann, Sixth Edition, Wiley-VCH,1999.
- Inorganic Chemistry by James E. Huheey, Ellen A. Keiter, Richard R. Keiter, Fourth Edition, Addison-Wesley, Reading, Massachusetts, 1993.

- Coordination chemistry by ramlingam
- Fundamental Concepts of Inorganic Chemistry By Asim K Das (Vol I & II)
- Concise Inorganic Chemistry by J D Lee, Fifth Edition, Chapman and Hall, London, 1996.
- Physical methods in inorganic chemistry by Russel Drago
- Inorganic Chemistry (5th Edition) by D. F. Shriver and P. W. Atkins; Oxford.
- Chemistry of the Elements by N N Greenwood & A Earnshaw, Butterworth-Heinemann, Elsevier, Oxford, 2005 (Indian Reprint).
- Inorganic Chemistry By Gary L. Miessler & Donald A. Tarr and Donald A. Tarr, Pearson, Prentice Hall, New Jersey, 2010.
- Concepts and Models of Inorganic Chemistry (3rd Edition) by B. E. Douglas, D. H. McDaniel, J. J. Alexander; John Wiley.
- General & Inorganic Chemistry (Part I & II) by R. Sarkar.
- Inorganic Chemistry, 2nd Edition, 2005,C.C. Housecroft and A. G. Sharpe, Pearson, Prentice Hall, England.
- Inorganic Chemistry by Gary Wulfsberg , 2006,University Science Books (For Advance Readers)
- Biological inorganic chemistry : structure and reactivity / edited by Ivano Bertini
- Vogel's Qualitative Inorganic Analysis, by G. Svehla
- Inorganic chemistry By Holleman
- Inorganic chemistry : by G. S. Sodhi.
- Descriptive inorganic chemistry by Rayner-Canham, Geoffrey.
- Modern inorganic chemistry by William L. Jolly.
- Inorganic structural chemistry / Ulrich Müller
- Inorganic polymers by Mark, James E ; Allcock, H. R ; West, Robert
- Essentials of inorganic chemistry by Mingos
- Inorganic spectroscopic methods by Brisdon,Alan K
- Principles of inorganic chemistry : comprehensively covering the ugc syllabus by Puri,B R ; Sharma,L R ; Kalia,K C .
- Infrared and Raman spectra of inorganic and coordination compounds by Nakamoto
- Inorganic and organometallic polymers by Chandrasekhar, Vadapalli.
- Physical inorganic chemistry : vol-II principles, methods, and models by Bakac.,Andreja (editor) ; Bakac, Andreja
- Solid state chemistry : compounds by Cheetham,A.K. (ed) ; Cheetham, A. K ; Day, P

ORGANOMETALLIC CHEMISTRY

- Organometallics: A Concise Introduction by Christoph Elschenbroich,2006, Wiley-VCH3rd Edition
- Basic Organometallic Chemistry: Concepts, Syntheses and Application by BD Gupta & Anil J Elias Year,2013, Universities Press
- Fundamentals of Organometallic Catalysis by Dirk Steinborn, 2012, Wiley-VCH
- The organometallic chemistry of the transition metals by Robert H Crabtree, Third edition, 2001, John Wiley & sons, Inc.
- Inorganic and Organometallic Reaction Mechanisms, Atwood
- NMR spectroscopy in inorganic chemistry / Jonathan A. Iggo.

PHYSICAL CHEMISTRY

- Physical chemistry by Castellan
- Physical Chemistry by KL Kapoor (VOL I – V) (must have collection of these series)
- Physical chemistry by Mortimer (Very good book for thermodynamics & quantum chemistry)
- Physical chemistry by Atkins (Favorite book of CSIR NET Exam Setter)
- Physical chemistry by silbey and bawendi (For Basic Concepts)
- Physical chemistry by Barrow
- Physical chemistry by Samuel Glasstone.

QUANTUM CHEMISTRY

- P. W. Atkins and R. S. Friedman, Molecular Quantum Mechanics, Oxford University Press, Oxford, 2004. (Must for Quantum Chemistry basics)
- Quantum Chemistry by RK Prasad
- Quantum Chemistry by Era Levine (For Advance Quantum Chemistry)
- Introduction to Quantum Chemistry by Clifford Dykstra
- Elementary Quantum Chemistry by Frank Pilar, Mineola, N.Y. Dover, 2001
- Quantum chemistry and spectroscopy by Thomas Engel, Pearson/Benjamin Cummings, c2006
- Quantum chemistry : fundamentals to applications by Tamás Veszprémi , Kluwer Academic/Plenum, 1999.
- J. P. Lowe and K. Petersen, Quantum Chemistry, Elsevier Academic Press, MA, USA, 2006
- A. K. Chandra, Quantum Chemistry, Tata McGrawHill, New Delhi, 2004.
- J. N. Murrell, S. F. A. Kettle and J. M. Tedder, Valence Theory, English Language Book Society, London, 1977.
- Quantum Mechanics by R. Shankar
- D. A. McQuarrie, Quantum Chemistry, Viva Books, New Delhi, 2003.
- Pauling and Wilson, Introduction to Quantum Mechanics, Dover Edition
- Quantum Mechanics by Schwabl, Springer Books
- P.M. Mathews and Venkatesan, Quantum Mechanics, Tata McGraw Hill
- Fundamentals of quantum chemistry by James House, Academic Press, c2004
- Physical chemistry: Quantum mechanics by Horia Metieu, Taylor & Francis Group, c2006
- Quantum Mechanics in Chemistry by George C. Schatz, Englewood Cliffs, N.J. : Prentice Hall, c1993
- Quantum Mechanics for chemist by David O. Hayward, Wiley-Interscience, c2002.
- Physical chemistry by Robert G. Mortimer, Harcourt/Academic Press, c2000
- Quanta : a handbook of concepts by Atkins, Oxford University Press, 1991.
- Ideas of quantum chemistry by Piela,Lucjan, Oxford Press.
- Quantum chemistry : a unified approach by David, Cook, London Imperial College.
- Quantum Chemistry : through problems and solutions by RK Prasad.

GROUP THEORY

- Group theory by Alan Vincent
- F. A. Cotton, Chemical applications of Group theory, Third Edition, John Wiley & Sons, New York, 1990
- D. M. Bishop, Group Theory and Chemistry, Dover Publications, New York, 1977.
- P. W. M. Jacobs, Group Theory with Applications in Chemical Physics, Cambridge University Press, Cambridge, U. K., 2005

ADDITIONAL READINGS

1. E. P. Wigner, Group Theory, Academic Press, New York, 1959.
2. R. McWeeney and B. T. Sutcliffe, Methods of Molecular Quantum Mechanics, Wiley-VCH, 1989.

RELATED LINKS

Professor David Sherrill group at Georgia Institute of Technology, Atlanta, Georgia USA has maintained a website with very useful pdf summary of many lectures in the area of quantum chemistry. Its URL is http://vergil.chemistry.gatech.edu/notes/index.html

CHEMICAL KINETICS

- Chemical Kinetics and Reaction Dynamics by Paul L. Houston
- Chemical Kinetics and Dynamics by Jeffrey I. Steinfeld, Joseph S. Francisco, William L. Hase
- Principles of Chemical Kinetics by James E. House
- Molecular Reaction Dynamics by Raphael D. Levine
- Chemical kinetics and Reaction dynamics by Santosh Upadhyay
- Chemical Kinetics by Ladler
- Principles of chemical kinetics by James House
- Fundamentals of enzyme kinetics by Cornish-Bowden, Athel

PHOTOCHEMISTRY AND PERICYCLIC REACTIONS:

- Photochemistry and pericyclic Reactions by Jagdamba Singh
- J. D. Coyle, ed., *"Photochemistry in Organic Synthesis"*, Royal society of Chemistry, London, 1986
- A. Gilbert and J. Baggott, *"Essentials of Molecular Photochemistry,"* CRC Press, London, UK, 1991
- N. J. Turro, *"Modern Molecular Photochemistry"* (***MMP***), University Press, Menlo Park, CA, 1978
- S. Sankararaman, Pericyclic Reactions: A Textbook, Wiley-VCH, 2005.

HETEROCYCLIC CHEMISTRY

- Aromatic Heterocyclic Chemistry (Oxford Chemistry Primers) by David T. Davies
- Heterocyclic Chemistry (3rd Edition) by Thomas. L. Gilchrist
- Heterocyclic Chemistry by John A. Joule and K. Mills
- The Chemistry of Heterocycles: Structure, Reactions, Syntheses, and Applications by Theophil Eicher and Siegfried Hauptmann

ELECTROCHEMISTRY

General Reading :

1. P.H.Rieger Electrochemistry
2. S.Glasstone Electrochemistry
3. Mortimer Physical Chemistry
4. Berry, Rice and Ross Physical Chemistry

Additional Readings :

- J.O.M.Bockris, A.K.N.Reddy and Modern Electrochemistry Volume 1 and 2A Plenum Press
- W.Schmickler Interfacial Electrochemistry Oxford University Press

STATISTICAL MECHANICS

- Statistical Mechanics by Mayer, J. E.; Mayer, M. G.
- Statistical Mechanics by Norman Davidson
- Statistical Mechanics: Principles and Selected Applications by Terrell Hill
- Statistical Mechanics: A Set Of Lectures (Advanced Books Classics) by Richard Feynman.
- Statistical Physics by L. D. Landau and M. Lifshitz
- Quantum Chemistry by Donald Mcquarrie.
- Physical Chemistry of Surfaces by A.W. Adamson, A.P. Gast, Wiley
- Surface Chemistry and Spectroscopy by G. Ranga Rao

Additional Advance Reading

- Surface Science Reports, Vol.13, 1991, 221-263
- Introduction to Surface Chemistry and Catalysis by G. A. Somorjai, Wiley, 1994.
- Surface Science, Vol.327, 1995, 293-300.

- Current Science, Vol.75, 1998, 901-910
- Surface Science, Vol.570, 2004, 178-188.