



GOVERNMENT OF TAMIL NADU

HIGHER SECONDARY SECOND YEAR

BIOCHEMISTRY

A publication under Free Textbook Programme of Government of Tamil Nadu

Department of School Education

Untouchability is Inhuman and a Crime



Government of Tamil Nadu

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Key features ...

	Scope of BioChemistry	Awareness about higher education avenues in the field of BioChemistry	
	Learning objectives	Describe the specific competency / performance capability acquired by the learner	
	Do you know	Additional information provided to relate the content to day-to-day life / development in the field	
	Example Problems	Model problems worked out for clear-cut comprehension by the learners	
	Evaluate yourself	To help the students to assess their own conceptual understanding	
	Q.R code	Quick access to concepts, videos, animations and tutorials	
	Summary	A glance on the substance of the unit	
	Concept map	Inter relating the concepts for enabling learners to visualize the essence of the unit	
	Evaluation	To assess the level of understanding through multiple choice question, numerical problems etc...	
	Books for Reference	List of relevant books for further reading	
	Glossary	Important terms are enlisted with equivalent Tamil words	

VARIOUS RESEARCH INSTITUTES IN INDIA, RESEARCH AREAS AND WEBSITES ARE SUMMARIZED BELOW.

INSTITUTE	RESEARCH AREAS	WEBSITE
Indian Institute of Science (IISc) <i>Bangalore, Karnataka</i>	<ul style="list-style-type: none"> ❖ Peptides and peptidomimetics: Sugar amino acids ❖ Delivery of therapeutic oligonucleotides ❖ Carbohydrate-protein interactions ❖ Functional soft and hybrid materials ❖ Studies of dendrimers and liquid crystals ❖ Inorganic and organic semiconductors 	www.iisc.ac.in
Indian Institute of Technology (IITM) <i>Chennai, Tamilnadu</i>	<ul style="list-style-type: none"> ❖ Statistical Correlations and Information Processing ❖ Ionic liquid-templated ordered mesoporous aluminosilicates ❖ Energy and fuel research ❖ Molecular engineering of materials ❖ Environmental science and engineering ❖ Catalysis and soft matter ❖ System engineering and data science 	www.iitm.ac.in
National Institute of Immunology (NII) <i>New Delhi</i>	<ul style="list-style-type: none"> ❖ Immunity and Infection, ❖ Reproduction, Development and Cell Biology, ❖ Genetics, Signalling and Cancer Biology, and ❖ Chemical Biology, Biochemistry and Structural Biology. 	/www.nii.res.in
National Center for Biological Sciences <i>Bengaluru, Karnataka</i>	<ul style="list-style-type: none"> ❖ The self-packing polypeptide ❖ Computational Approaches to Protein Science ❖ Exploring the architecture and function of transmembrane ion channels ❖ Computational cancer genomics 	www.ncbs.res.in
Council of Scientific Industrial Research (CSIR) <i>New Delhi</i>	<ul style="list-style-type: none"> ❖ Bio-actives, Cell / Stem cell / Immuno Therapies, ❖ Regenerative / Precision / personalized Medicines ❖ Reduction of Genetic Disease Burden. 	www.csir.res.in

 INSTITUTE	 RESEARCH AREAS	 WEBSITE
CSIR - CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE(CFTRI) Mysuru, Karnataka	<ul style="list-style-type: none"> ❖ Ultra High Pressure System For Food Preservation ❖ Non-Aqueous Applications Of Membrane Technology 	www.cftri.res.in
Central Salt & Marine Chemicals Research Institute Bhavnagar, Gujarat	<ul style="list-style-type: none"> ❖ Salt and Marine Chemicals ❖ Inorganic Materials and Catalysis ❖ Electro Membrane Processes ❖ Reverse Osmosis 	www.csmcri.org
National Institute of Pharmaceutical Education and Research (NIPER) Mohali, Punjab.	<ul style="list-style-type: none"> ❖ Development of oral anti diabetic drugs ❖ Nano crystalline solid ❖ xanthine oxidase inhibitors ❖ microbial and marine origin for therapeutic purposes ❖ Standardization and quality control of herbal drugs and products ❖ Development of chemical process technologies for important natural products involving isolation 	www.niper.gov.in
Institute of Nano Science and Technology(INST) Mohali, Punjab	<ul style="list-style-type: none"> ❖ Bio-inspired soft nanostructures ❖ Bio-sensors and online diagnostics ❖ Bio-targeting and therapeutics ❖ Microfluidics based devices ❖ Materials and devices for energy storage and harvesting ❖ Nanotechnology in Agriculture and Rural Development ❖ Nano toxicology 	www.inst.ac.in
Center For Cell And Molecular Biology(Ccmb) Hydrabad, Telangana	<ul style="list-style-type: none"> ❖ Tumor biology ❖ Cataract & other eye diseases ❖ Applications of DNA fingerprinting ❖ Conservation of endangered species ❖ Molecular approaches in animal breeding ❖ Aquaculture 	www.ccmb.res.in
Tata institute of fundamental research (TIFR) Mumbai, Maharashtra	<ul style="list-style-type: none"> ❖ Molecular biophysics and imaging ❖ Chemical biology and synthetic chemistry ❖ Bioinorganic and biomimetic chemistry ❖ Nano science and catalysis ❖ Chemical physics and dynamics 	www.tifr.res.in

LIST OF ENTRANCE EXAMINATIONS AFTER HSC

NAME OF THE EXAM	MODE OF SELECTION	COURSE	WEBSITE
NEET (National Eligibility cum Entrance test)	Written test	MBBS., BDS.,	www.cbseet.nic.in
AIIMS (All India Institute of Medical Sciences)	Written test	MBBS.,	www.aiimsexams.org
JIPMER (Jawaharlal Institute Of Postgraduate Medical Education & Research)	Computer based test	MBBS.,	www.jipmer.edu.in
AFMC (Armed Forces Medical College Entrance Exam)	Written test	M.B.B.S., (Should Serve 7 Years in Armed Forces)	www.afmc.nic.in
IIT – JEE (IIT- Joint Entrance Exam)	Written test	B.E., B.Tech., B.Arch.,	www.jeemain.nic.in
CUCET (Central Universities Common Entrance Test)	Written test	Integrated M.Tech., B.Tech., Integrated B.Sc., B.Ed., Integrated M.Sc., Integrated M.A., B.Des., (craft and design)	www.cucet.co.in
NISER (National Institute of Science Education and Research)	Written test	Integrated M Sc., (Biology, Chemistry, Mathematics and Physics)	www.niser.ac.in
IISC (Indian Institute of Science Bangalore)	Written test	B.Sc., (4 years)	www.iisc.ernet.in

NAME OF THE EXAM	MODE OF SELECTION	COURSE	WEBSITE
IISER (Indian Institutes of Science Education and Research)	Written test	5-year BS-MS dual degree (Biology, Chemistry, Mathematics and Physics) **IISER Kolkata offers major in Earth Sciences	www.iiserpune.ac.in
NATA (National Aptitude Test in Architecture)	Computer Based Test	B.Arch.,	www.nata.in
NIFT (national institute of fashion technology)	Written test	B.Des., BFTech.,	www.nift.ac.in
IIFT (indian institute of fashion technology)	Written test	B.Sc., (in fashion & apparel design)	www.iiftbangalore.com
NID NEED (Nation al Entrance Exam for Design)	Written test	B.Des., (4 years)	www.nid.edu
IIST (Indian Institute of Space Technology)	Written test	B.Tech., (Avionics/ Aerospace Engineering/ Physical Science)	www.iist.ac.in
CLAT (Common Law Admission Test)	Written test	Integrated LLB (5 years)	www.cbcsneet.nic.in
NCHMCT (National Council for Hotel Management Catering Technology Joint Entrance Exam)	Written test	B.Sc., (Hospitality and Hotel Administration)	www.nchm.nic.in
NDA and NA (National Defence Academy and Naval Academy)	Written Exam	3 Years Training for entry into ARMY/ NAVY/AIRFORCE	www.nda.nic.in
AIMNET (All India Merchant Navy Entrance Test)	Written Exam	B.Tech., Marine Engineering B.Sc., Nautical Science B.Tech.,Navel Architecture and Ship Building	www.aim.net.co.in

VARIOUS SCHOLARSHIP SCHEME OFFERED AFTER HSC

CENTRAL GOVERNMENT SCHOLARSHIPS OFFERED	OFFERED BY	APPLICATION PERIOD
Central Sector Scheme of Scholarship for College and University Students	Ministry of Human Resource Development, Government of India	July to October
Kishore Vaigyanik Protsahan Yojana (KVPY)	Department of Science and Technology (DST), Government of India	June to August
Inspire Scholarship	Department of Science and Technology (DST), Government of India	October to December
ONGC scholarship (Applicable for SC/ST Students)	Oil and Natural Gas Corporation Limited	January to March
National Fellowship and Scholarship for Higher Education of ST Students	Ministry of Tribal Affairs, Government of India	July to October
MOMA scholarship (applicable only for Minority students)	Ministry of Minority Affairs, Government of India	July to September
Scholarships for Top Class Education for Students with Disabilities	Ministry of Social Justice and Empowerment, Government of India	July to October
Saksham Scholarship (Applicable for Disable students)	AICTE	September to November
AICTE Pragati scholarship for Girls	AICTE	September to November

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E-book



Assessment



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