



GOVERNMENT OF TAMILNADU

HIGHER SECONDARY FIRST YEAR

BIO-CHEMISTRY

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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NOT FOR SALE

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Key features ...

	Scope of BIO-Chemistry	Awareness about higher education avenues in the field of Bio-Chemistry	
	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	
	Q.R code	Quick access to concepts, videos, animations and tutorials	
	ICT	opens up resources for learning; enables the learners to access, extend transform ideas / informations	
	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	

The courses offered, top colleges and competitive exams conducted for higher education after 12th in Chemistry field were summarized below.

Courses Bachelor Degree	Institution	Selection Mode	Careers in Chemistry
• B.Sc Biochemistry • B.Sc Biotechnology • B.Sc Chemistry • B.Sc Bioinformatics • B.Sc Microbiology • B.Sc Zoology • B.Sc Botany	• Arts and Science Colleges	• Counseling based on 12th Marks in Science Subjects	• Biochemistry Research and Development • Food products and processing systems • Animal systems • Plant systems • Environmental study systems • Agribusiness systems • High School teaching faculty • Quality control section
Allied Health Science Courses			
• B.Sc Nursing • B.Sc Medical Lab Technology • B.Sc Anaesthetic Technology • B.Sc Clinical optometry • B.Sc Medical Microbiology • B.Sc Radiotherapy Technology • B.Sc Physician Assistant • B. Pharm	• Medical Colleges and Paramedical Institutes	• Counseling based on 12th Marks in Science Subjects	• Diagnostic services • Support services • Health informatics • Therapeutic services • Preventive care
Diploma Paramedical Courses			
• Dialysis Technician • X-ray Technician • Medical Lab Technician • Operation theatre Technician • Radiation Technician • Anesthetic Technician • Medical Record Technician	• Paramedical Institutes	• Counseling based on 12th Marks in Science Subjects	• Human supportive services • Diagnostic services • Prognostic services • Therapeutic services • Preventive care
Masters Degree			

Courses	Institution	Selection Mode	Careers in Chemistry
Master Degree Courses			
- M.Sc Biochemistry - M.Sc Animal Biochemistry - M.Sc Plant Biochemistry - M.Sc Medical Biochemistry - M.Sc Lifesciences - M.Sc Molecular Biology - M.Sc Biotechnology - M.Sc Microbiology - M.Sc Genetics - M.Sc Zoology - M.Sc Bioinformatics - M.Sc Nanoscience and Technology - M.Sc Medical Microbiology - M.Sc Applied Microbiology - M.Sc Forensic Science - M.Sc Biophysics	- University of Madras - Pondicherry University - Madurai Kamarajar University - Bharathidasan University - Bharathiar University - Manonmaniam Sundaranar University - Periyar University - Tamilnadu Agricultural University - Annamalai University - SASTRA University - VIT University - Arts and Science Colleges - Medical Colleges	Based on the percentage scored indgree and Separate Entranceexams will be conducted by the concern institute	- Biomedical agent - Research fellow - Quality controller - Forensic scientist - Research and Development scientist - Patent attorney - Health, Safety and Environmental Managers - Pharmaceutical Analyst - Lab in-charges - Project Assistants - Higher secondary teachers
Engineering Degree Courses			
M. Tech Biotechnology	Anna University and Private Engineering Colleges	Common Entrance Examination Test - TANCET	- Biomedical Industry - Industrial Scale Production - Pharma industry - Health, Safety and Environmental Managers
M.Phil			
- M.Phil Biochemistry - M.Phil Lifesciences - M.Phil Genetics - M.Phil Microbiology - M.Phil Biotechnology - M.Phil Endocrinology - M.Phil Nanoscience and Technology - M.Phil Bioinformatics - M.Phil Biophysics	- Universities - Arts and Science Colleges	Entrance test or direct interview depend upon specific university and college.	- Research and Development - Teaching faculty in colleges - Industrial related jobs

Courses Bachelor Degree	Institution	Selection Mode	Careers in Chemistry
Ph.D Courses			
- Ph.D Biochemistry - Ph.D Lifesciences - Ph.D Genetics - Ph.D Microbiology - Ph.D Biotechnology - Ph.D Endocrinology - Ph.D Nanoscience and Technology - Ph.D Bioinformatics - Ph.D Biophysics - Ph.D Immunology	- University of Madras - Pondicherry University - Madurai Kamarajar University - Bharathidasan University - Bharathiar University - Manonmaniam Sundaranar University - Periyar University - Tamilnadu Agricultural University - Annamalai University - SASTRA University - VIT University - Indian Institute of Sciences - Indian Institute of Technology - Tata Institute of Fundamental Research (TIFR) - Bhabha Atomic Research Centre (BARC) - National Institute of Immunology - AIMS	Separate Entrance Examination will be conducted by concern institute or universitie.	- Scientists posts in Various industries - Scientist posts in government organizations - Post-doctoral fellow - Teaching faculty in Universities - Top position in Research and Development wing

Entrance Exams and Pattern

JEE-Main Paper I -3 hrs Paper II-3 hrs www.jeemain.nic.in	- Indian Institutes of Information Technology (IITs) - Indian Institute of Engineering Science and Technology (IIEST) - National Institutes of Technology (NITs) - Indian Institute of Technology (IITs) - Government Funded Technical Institutes (GFTIs)	OMR based and Online based (choice of candidate)	Notification: 1 st week of Dec Exam Date: April Negative marking: 4/-1 Total Marks:360	Physics Chemistry Mathematics Total Questions	30 30 30 90
JEE-Advanced Paper I -3 hrs Paper II-3 hrs Should qualify JEE main (paper-I) www.jeeadv.ac.in	- Indian Institutes of Information Technology (IITs) - Indian Institute of Engineering Science and Technology (IIEST) - National Institutes of Technology (NITs) - Indian Institute of Technology (IITs) - Government Funded Technical Institutes (GFTIs)	Online	Notification: last week of April Exam Date: May second week Negative marking: 4/-1 Total Marks: 306 (Variable each year)	Physics Chemistry Mathematics Total Questions	18 18 18 54
BITSAT http://www.bitsadmission.com Time: 3 hrs	Birla Institute of Technology and Science	Online	Notification: 2nd week of Dec Exam Date: 2nd week of May Negative marking: 3/-1 Total Marks: 450	Physics Chemistry Mathematics English Proficiency Logical Reasoning Total Questions	40 40 45 15 10 150
CUCET https://cucetexam.in Time: 2 hrs	All Central Universities	Online	Notification: 2nd week of Feb Exam Date: April Negative marking: 1/0.25 Total Marks:175	English General Awareness Mathematical Aptitude Analytical Skill Science Total Questions	25 25 25 25 75 175
JAM http://jam.iitb.ac.in/ Time: 3 hrs	All IITs	Online	Notification: September Exam Date: February Negative marking: 1/0.33 2/0.66 Total Marks:100	Chemistry Total Questions	60 60

CSIR-UGC Net http://csirhrdg.res.in Time: 3 hrs	• Ph.D. admission in all Universities and Colleges	OMR	Sessions: June From out : March Exam Date: June Session: December From out : September Exam Date: December	General Science, Quantitative Reasoning & Analysis and Research Aptitude Chemistry Total Questions	60 15 75
GATE http://gate.iitg.ac.in/ Time: 3 hrs	• Ph.D. admission in all IITs	OMR	From out : September Exam Date: February Negative marking: 1/0.33 2/0.66 Total Marks:100	General Aptitude Chemistry Total Questions	10 55 65
TANCET https://www.annauniv.edu Time: 2 hrs	• Anna University Entrance exam for technology courses	Pen and Paper based exam	From out : January Exam Date: March Negative marking: 1/0.33 Total Marks:100	Engineering Mathematics Basic Engineering and Sciences Chemistry Total Questions	20 20 60 100
University of Madras http://www.unom.ac.in Time: 3 hrs	• M.Sc. Entrance exam	Pen and Paper based exam	From out : 2nd week of Feb Exam Date: April Negative marking: Nil Total Marks:100	Analytical Chemistry Inorganic Chemistry Organic Chemistry Physical Chemistry Total Questions	25 25 25 25 100
Anna University https://www.annauniv.edu Time: 1 hr	• M.Sc. Entrance exam	Online	From out : April Exam Date : May Negative marking : 1/0.25 Total Marks : 100	Chemistry Total Questions	100 100
Annamalai University http://www.annamalaiuniversity.ac.in	• M.Sc. Admission • B.Sc. Admission	Based on percentage scored in degree and Personal Interview. Counseling based on 12th Marks in Science Subjects			
Bharathiar University www. b-u.ac.in Time: 1.30 hrs	• M.Sc. Entrance exam	Pen and Paper based exam	From out : May Exam Date : Roughly July Total Marks : 60	Chemistry Total Questions	60 60
Bharathidasan University http://www.bdu.ac.in/	• M.Sc. Entrance exam	Pen and Paper based exam	From out : last week of May Exam Date : second week of June		
Madurai Kamaraj University mkuniversity.ac.in	• M.Sc. Entrance exam	Online	From out : March Exam Date : May/June		

(Note: All these dates are tentative and they are subjected to change every year)



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E-book



Assessment



X

