NIPER Joint Entrance Examination (JEE)

(Ahmedabad; Guwahati; Hajipur; Hyderabad; Kolkata; Raebareli; S.A.S. Nagar)

NIPER-2025

RANKED NO. -1
IN PHARMA EDUCATION

GPAT DISCUSSION CENTER

NIPER PROSPECTUS

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Now your GPAT/GATE result have been declared you might be enjoying last day of your college life (writing slams, enjoying parties etc.) but remember that you have not still achieved your final destination because there is no place in India like NIPER for pursuing your post graduate education. So you should have proper balance between your enjoyment and study.

This Book **NIPER AT YOUR FINGERTIPS**, will make your NIPER preparation easier and more oriented. Any rank qualified ranker in GPAT, also get admission in NIPER by their hard work in rest period of time, We will prove this again in coming months.

Information About NIPER

The National Institute of Pharmaceutical Education and Research (NIPER) at S.A.S Nagar (Mohali) created as a Centre of Excellence for imparting higher education, research and development in pharmaceutical sciences and management is the first Institute of its kind in the country, The Institute was declared as an Institute of National Importance by Government of India through an Act of Parliament, notified on 26th June 1998.

NIPER conducts an entrance exam for candidates aspiring to make a career in Pharmacy by seeking admission into various Postgraduate and Doctorate level courses. It evaluates the aptitude of candidates for courses like MS (Pharm.), M Pharma, MTech (Pharm.), PhD and MBA (Pharm.).

Different NIPER across India

- NIPER, Mohali - www.niper.nic.in
- NIPER, Ahmedabad - www.niperahm.ac.in
- NIPER, Guwahati - www.niperguwahati.ac.in
- NIPER, Hajipur - www.niperhajipur.ac.in
- NIPER, Hyderabad - www.niperhyd.ac.in
- NIPER, Kolkata - www.niperkolkata.edu.in
- NIPER, Raebareli - www.niperraebareli.edu.in

NIPER Act empowers the Institute vide following Sections

Section 7(ii) “to concentrate on courses leading to masters degree, doctoral and post doctoral courses and research in pharmaceutical education”. Section 7 (iii) “to hold examinations and grant degrees”.

Section 32 "Notwithstanding anything contained in the University Grants Commission Act, 1956 or in any other law for the time being in force, the Institute shall have power to grant degrees and other academic distinctions and titles under this Act".

Institute is awarding degrees like Ph.D.; M.Pharm.; M.Tech. (Pharm.); M.S.(Pharm.) and M.B.A. (Pharm.) As mandated to it by Section 7 (ii), (iii) and Section 32 of the NIPER Act 1998.

The main objectives of the institutes are :

1. Toning up the level of pharmaceutical education and research by training the future teachers, research scientists and managers for the industry and profession.
2. Continuing education programmes
3. Creation of National Centres to cater to the needs of pharmaceutical industries and other research and teaching institutes
4. Collaboration with Indian industries to meet the global challenges
5. National/International collaborative research
6. Curriculum and media development
7. Study of sociological aspects of drug 'use and abuse', and rural pharmacy, etc
8. Conducting programmes on drug surveillance, community pharmacy and pharmaceutical management

NIPER JEE Highlights

EXAM PARTICULARS	EXAM DETAILS	
Name of exam	National Institute of Pharmaceutical Education and Research Joint Entrance Exam	
Conducting body	National Institute of Pharmaceutical Education and Research	
Exam Level	Postgraduate exam at the National level	
Exam Frequency	Once a year	
Mode of Exam	Computed Based Test (CBT)	
Courses offered through Entrance Exam	MPharm, MTech (Pharm), MBA (Pharm), and PhD	
Elegibility	• Qualified degree with a minimum 60% marks • Qualified in GPAT/GATE/NET	
Exam Fees		
All master Courses Except Medical devices	Gen/OBC/PH/NRI/EWS	3,000/-
	SC/ST	1,500/-
All master Courses except medical Devices+ iPG-PhD	Gen/OBC/PH/NRI/EWS	4,000/-
	SC/ST	2,000/-
Masters in Medical devices	Gen/OBC/PH/NRI/EWS	3,000/-
	SC/ST	1,500/-
Masters in Medical devices + iPG PhD (Med. Devices)	Gen/OBC/PH/NRI/EWS	4,000/-
	SC/ST	2,000/-
Exam Duration	120 minutes (2 hours)	
No. of Papers and Total Marks	Paper-1 of 200 marks	
Total Questions	200 MCQs	

Marking Scheme	• 1 for each correct response • -0.25 for each incorrect response • No marks for unattempted questions
Language/Medium of Exam	English
No. of Test Cities	18 all over India (As per present data)
Official Website	http://www.niperhyd.ac.in/ and websites of other NIPERS
Contact Details	Technical helpline email address: • Helpdeskjee:- niperjee2023@niperguwahati.ac.in

Important Dates for Admission

TENTATIVE IMPORTANT DATES FOR ADMISSION		
1	Date of commencement of online Registration	**Check the important dates of NIPER JEE from the official website**
2	Last date for online Registration	
3	Online Delivery of Admit Card to respective e-mails / Downloads	
4	Online NIPER Joint Entrance Examination (Computer Based Test)	
5	Declaration of result (Website-www.niperguwahati.ac.in)	

NIPER JEE Admission Process

The NIPER exam admission process involves the whole procedure to secure a seat via any of the entrance examinations. The process involves filling in application forms to attend the counselling and submitting the admission fee. Below are the brief steps of the admission process

- ✓ **Registration/Application form filling:** Candidates have to provide their personal details academic details, upload their recent passport-size photograph and the scanned image of their signature, and submit the application fee to conclude the process.
- ✓ **Download the Admit Card:** The conducting body will release the admit card at least ten or seven days before the entrance exam, and candidates have to download and take a printout of the admit card.
- ✓ **Appear for the entrance exam:** The candidates must appear for the entrance exam by reporting to the allotted centre at the prescribed time and date. Candidates will not be allowed to enter the exam hall without producing a hard copy of the admit card.
- ✓ **Attend the counselling:** Candidates have to attend the counselling before a personal interview. According to the choice of selected college, candidates will be allotted seats as per their merit.
- ✓ **Fee submission and attending classes:** After the seats are allotted, candidates have to submit the admission fee and the tuition fee at the allotted institutes and attend the classes on the prescribed dates.

How to Fill NIPER JEE Exam Application Form

NIPER has begun the application process. Candidates can start filling out the NIPER JEE application form in online mode at the official website of NIPER. Candidates can apply by following the steps listed below:

- Visit the official website of NIPER, niperguwahati.ac.in or other NIPER website who conducted the exam
- Click on the registration link and create a new user ID and password
- Candidates have to log in to their account by clicking the link sent on the registered mail ID post the registration process.
- Candidates have to provide all the details in the application form, such as Name, Address, Date of Birth, Father's Name, Category, and Subject applied for.
- After filling out the application form, candidates must pay the application fee.
- The application fee is payable via Credit or Debit card, Net Banking or E-Challan
- A confirmation page will appear after the payment is done, and candidates now have to submit and initiate a digital signature.
- Candidates now have to upload their photo ID proof and Address proof, Tenth, and Twelfth Mark sheet, Reservation certificate (if applicable), Medical certificate (if applying under handicapped category), valid GATE, GPAT or NET Scorecard (if applicable), and Passport-sized Photograph along with the digital signature.
- Candidates must take a printout of the filled application form for future reference.

How to Check NIPER JEE Exam Result

The conducting body of the exam will announce the NIPER JEE result on its official website. Candidates can access the result online and download the scorecards/result in PDF format.
Candidates can refer to the step-by-step guide on how to view and download the NIPER JEE exam result below:

- Visit the NIPER's official website, *www.niperguwahati.ac.in* or other NIPER Website
- Click on the 'NIPER JEE' button
- Click on 'NIPER JEE– Result for MBA Programme' and 'NIPER JEE - Result for M.S.(Pharm.)/ M.Pharm./M.Tech.(Pharm.) Programme' link in the NIPER exam result Section at the top.
- The result will appear on the Screen in PDF format, and candidates can find their AIR by searching for their Application Number using Ctrl+F.

NIPER JEE Counselling

- After the results are announced, shortlisted candidates will be contacted for an interview and group discussion.
- A new merit list will be published based on the combined marks of the online exam, interview, and community discussion.
- Candidates who are shortlisted will be able to engage in the counselling.
- Candidates will be asked to fill out their college preferences during the counselling.

Documents to be Submitted

During the counselling process, documents will be checked. Please see the list of necessary documents below.

- Matriculation Certificate (Proof of age and correct name)
- Mark sheets of all semesters/ years of the qualifying degree
- GPAT/ GATE/ NET score card (Wherever applicable)
- Admit card of the entrance exam
- Certificate of reservation (If applicable)
- Certificate of income (If applicable)
- Certificate of disability (If applicable)
- Medical Certificate
- Sponsorship certificate from the employer in case of Government/ Industry sponsored candidates.
- Documentary proof supports the NRI status (Only for MBA Pharm.)
- Affidavit to be provided in the form of Undertaking
- Undertaking to be given by the parents regarding ragging for their wards to abide by the rules of NIPER
- Attested copy of Aadhar Card

Academic Program

The institute offers the students various courses viz. M. Pharm, M. Tech. (Pharm), M.S (Pharm.) and Ph.D. Programmes in various departments every year.

First bring good rank in entrance

Specialization branch you can select at time of counseling.

ACADEMIC PROGRAM: AVAILABILITY AT VARIOUS NIPERs AND QUALIFYING DEGREES
M.S.(Pharm.); M.Pharm.; M.Tech. (Pharm.), M.B.A. (Pharm.)
Departments/Disciplines, Offering NIPERs and Eligibility Criteria

Medicinal Chemistry	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad, Guwahati, Hyderabad, Kolkata, Raebareli, S.A.S. Nagar
Qualifying Degrees	B. Pharm. / M.Sc. (Organic Chemistry)
Natural Products	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad, Hyderabad, Kolkata, S.A.S. Nagar
Qualifying Degrees	B.Pharm. / M.Sc. (Organic Chemistry)
Traditional Medicine	**M.S. (Pharm.)**
Offering NIPERs	S.A.S. Nagar
Qualifying Degrees	B.Pharm./ B.A.M.S./ M.Sc. (Botany)

Pharmaceutical Analysis	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad, Guwahati, Hajipur, Hyderabad, Kolkata, S.A.S. Nagar
Qualifying Degrees	B.Pharm./ M.Sc. (Organic/Analytical Chemistry)
Pharmacology & Toxicology	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad, Guwahati, Hajipur, Hyderabad, Kolkata, Raebareli, S.A.S. Nagar
Qualifying Degrees	B.Pharm./ B.V.Sc./ M.B.B.S
Regulatory Toxicology	**M.S. (Pharm.)**
Offering NIPERs	Hyderabad, Hajipur, Raebareli, S.A.S. Nagar
Qualifying Degrees	B. Pharm./ B.V.Sc./ M.Sc (Pharmacology/ Toxicology /Life Sciences/Biochemistry/Medical Biotechnology/ Zoology)/ M.B.B.S
Pharmaceutics	**M.S (Pharm.)**
Offering NIPERs	Ahmedabad, Guwahati, Hajipur, Hyderabad, Kolkata, Raebareli, S.A.S. Nagar
Qualifying Degrees	B. Pharm.
Biotechnology	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad, Guwahati, Hajipur, Raebareli, S.A.S. Nagar
Qualifying Degrees	B.Pharm./ M.Sc. (Biological Sciences)
Pharmacoinformatics	**M.S. (Pharm.)**
Offering NIPERs	Hyderabad, Kolkata, S.A.S. Nagar
Qualifying Degrees	B.Pharm./ B.Tech. (Bioinformatics)/ M.Sc. (Organic/ Physical/ Pharmaceutical Chemistry/Biochemistry/ Biotechnology/Molecular Biology/Bioinformatics/ Microbiology)
Medical Devices	**M.S. (Pharm.)**
Offering NIPERs	Ahmedabad
Qualifying Degrees	B. Pharm./ M.B.B.S / BDS / B.V.Sc / B.E or B.Tech (Biotechnology / Biomedical / Biophysics / Electronics / Instrumentation / Mechanical / Biochemical / Health Sciences or allied subjects) / 4-year BS course (Chemistry/ Mathematics & Computing/Physics/Programming/Data Science) / Post Graduation in Chemical Sciences / Life Sciences / Material Sciences / Physical Sciences / Biotechnology / Biomedical / Biophysics / Electronics / Instrumentation / Biochemical / Health Sciences, Medical science & Technology or allied subjects as applicable in GATE/ NET.

Regulatory Affairs	M.S. (Pharm.)
Offering NIPERs	Hyderabad
Qualifying Degrees	B.Pharm./ B. Tech./B.E. (Biotechnology/ Biomedical Engineering/Chemical Engineering or equivalent), M.B.B.S / BDS / B.V.Sc./ M.Sc. (Biotechnology/ Microbiology/Food Science/ Life Sciences/ Chemical Sciences/Pharmacology/ Toxicology)
MASTER OF PHARMACY (M.PHRM) PROGRAMMES	
Pharmaceutical Technology (Formulations)	**M.Pharm.**
Offering NIPERs	Guwahati, S.A.S Nagar
Qualifying Degree	B.pharm.
Pharmacy Practice	**M.Pharm**
Offering NIPERs	Guwahati, Hajipur, S.A.S Nagar
Qualifying Degree	B.pharm.

NIPER S.A.S NAGAR

Indian Pharma Industry has been a global leader in generic drugs. In order to acquire leadership position in drug discovery and development and to continue to excel in the formulations and Biological Sciences, the Government of India recognized that the human resources/talent pool is very critical. Thus, the Government of India set up the "National Institute of Pharmaceutical Education and Research (NIPER) at S.A.S. Nagar Mohali" in 1991 as a registered society under Society Registered Act, 1860. NIPER S.A.S Nagar has secured 1st rank in India, 7th rank in Asia and 44th rank globally according to QS World University Rankings in Pharmacy and Pharmacology subject category. NIPER has also been ranked 4th in MoE, National Institute Ranking Framework (NIRF) in pharmacy category. NIPER S.A.S. Nagar is a member of the Association of Indian Universities. Since its inception, 3175 Master's, 732 MBA, and 384 Ph.D. students have graduated from NIPER S.A.S. Nagar. Institute is involved in cutting-edge research in various nationally recognized disease areas, very well documented and exemplified by the publication of 2984 research papers and filing of 215 patents out of which 123 have been granted and 5 trademarks.

The aims of NIPER S.A.S. Nagar are achieved by :

1. Teaching activities M.S. (Pharm.), M.Tech. (Pharm.), MBA (Pharm.) & Ph.D. courses are being offered.
2. Research and Development activities - Sponsored research projects/consultancy/Project handling/upscaling.
3. Support to industry - The Institute provides support to the industry through its service centres viz Library & Information Centre, Central Instrumentation Laboratory, National Toxicology Centre, Small & Medium Pharmaceutical Industry Centre, Technical Development Centre, National Bioavailability Centre, NPIE etc.)

Courses	Disciplines	No. of Seats'
M.S. (Pharm)	Medicinal Chemistry	27
	Natural Products	22
	Traditional Medicine	5
	Pharmaceutical Analysis	9
	Pharmacology & Toxicology	29
	Regulatory Toxicology	9
	Pharmaceutics	23
	Biotechnology	28
	Pharmacoinfonnatics	19
M.Tech. (Pharm)	Pharmaceutical Technology (Process Chemistry)	17
	Pharmaceutical Technology (Biotechnology)	11
M.Tech.	Medical Devices	10
M.Pharm	Pharmacy Practice	9
	Clinical Research	9
	Pharmaceutical Technology (Formulation)	7
M.B.A. (Pharm)	Pharmaceutical Management	47
TOTAL SEATS		281

NIPER AHMEDABAD

Courses	Disciplines	No. of Seats
M.S.(Pharm)	Biotechnology	15
	Medicinal Chemistry	24
	Medical Devices	16
	Natural Products	18
	Pharmaceutical Analysis	24
	Pharmacology & Toxicology	24
	Pharmaceutics	24
M.BA (Pharm)	Pharmaceutical Management	30
TOTAL SEATS		175

NIPER HAJIPUR

Courses	Disciplines	No. of Seats*
M.S.(Pharm)	Biotechnology	18
	Pharmaceutics	16
	Pharmacology and Toxicology	18
	Regulatory Toxicology	14
	Pharmaceutical Analysis	16
M. Pharm	Pharmacy Practice	18
M. Tech. (Pharm)	Biopharmaceuticals	10
TOTAL SEATS		110

NIPER HYDERABAD

Courses	Disciplines	No of Seats*
M.S. (Pharm)	Medicinal Chemistry	15
	Natural Products	09
	Pharmaceutical Analysis	15
	Pharmaceutics	20
	Pharmacology and Toxicology	20
	Regulatory Toxicology	10
	Pharmacoinformatics	10
	Regulatory Affairs	10
M. Tech. (Pharm)	Pharmaceutical Technology (Process Chemistry)	15
	Medical Devices	9
	Biopharmaceuticals	12
M.B.A (Pharm)	Pharmaceutical Management	42
TOTAL SEATS		**187**

- Above figures include the 10% of EWS category seats against the respective discipines.
- PH seats are 3% over and above.
- Sponsored category is 5 % over and above.

NIPER GUWAHATI

Courses	Disciplines	No. of Seats
M.S.(Pharm)	Pharmacology & Toxicology	23
	Biotechnology	15
	Pharmaceutics	25
	Pharmaceutical Analysis	27
	Medicinal Chemistry	18
M.Pharm.	Pharmaceutical Technology (Formulations)	18
	Pharmacy Practice	20
M.Tech.	Medical Devices	12
TOTAL SEATS		**175**

NIPER KOLKATA

Courses	Disciplines	No. of Seats*
M.S.(Pharm)	Medicinal Chemistry	19
	Natural Products	10
	Pharmaceutics	20
	Phamacoinformatics	10
	Pharmacology and Toxicology	18
	Pharmaceutical Analysis	12
M. Tech (Pharm)	Medical Device	11
	Biopharmaceuticals	10
TOTAL SEATS		**110**

NIPER RAEBARELI

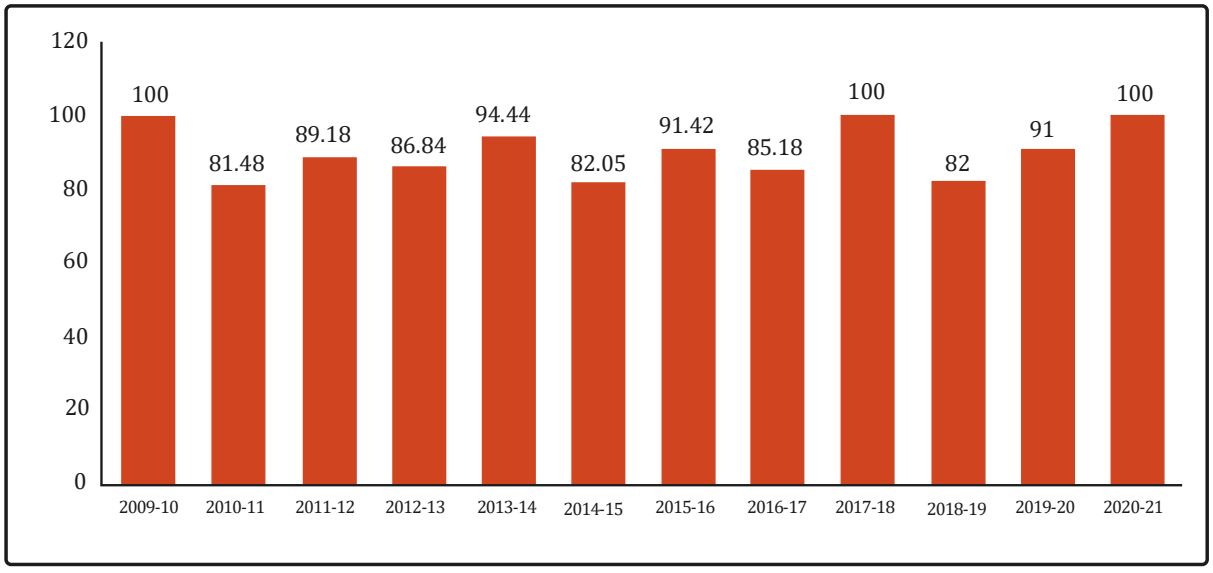
Courses	Disciplines	No of Seats*
M.S.(Pharm)	Biotechnology	**15**
	Medicinal Chemistry	**30**
	Pharmaceutics	**30**
	Pharmacology and Toxicology	**20**
	Regulatory Toxicology	**15**
TOTAL SEATS		**110**

Note : Seats may subject to change

❑ NIPER AHMEDABAD PLACEMENT STATISTICS

Batch	Total Students	Higher Studies	Opted for Placement	% of Placement
2015-17	54	2	52	92.3%
2016-18	69	9	60	90.0%
2017-19	72	25	47	97.9%
2018-20	96	18	78	83.3%
2019-21	107	22	85	98.8%
2020-22	142	25	117	95.7%*

❑ NIPER GUWAHATI PLACEMENT STATISTICS



❑ NIPER HYDERABAD PLACEMENT STATISTICS

Year	No. of Students Registered	No. of Students Placed	No. of Students Opted for Higher Studies	% Placements
2013	73	53	14	89.8
2014	97	56	21	73.6
2015	108	73	13	76.8
2016	104	64	20	76.1
2017	105	84	14	92.3
2018	110	90	15	94.7
2019	119	95	22	97.9

❑ NIPER RAEBARELI PLACEMENT STATISTICS

Discipline	Students	Students interested in Placement / PhD			Placed / Not Placed	
		Opt Placement	Not interested	Opt PhD	Placed	Not placed
Medicinal Chemistry	21	21	0	3	17	1
Pharmaceutics	19	18	1	2	14	2
Pharmacology & Toxicology	15	15	0	5	8	2
Regulatory Toxicology	10	10	0	0	9	1
Biotechnology	9	9	0	3	6	0

NIPER Fee Structure

M.S.(Pharm.), M.Pharm., M.Tech (Pharm.)

Onetime payment of charges	General/ OBC/ EWS (Rs.)	SC/ST (Rs.)	Govt./Industry sponsored. (Rs.)*
*Admission Fee	5,000	5,000	
Alumni Fund	8,500	8,500	
Hostel Admission	3,496	3,496	
Group Insurance (for 2 years)	4,000	4,000	
Security Amount (Refundable)	27,500	27,500	Note: Refundable after successful completion of the course
Placement Fee	4000	4000	
TOTAL A	**52,496**	**52,496**	**75,698**
CHARGES PAYABLE FOR EACH SEMESTER			
Tuition Fee	26,022	0	
Examination/Evaluation Fee	1,150	1,150	
Registration Fee	1,392	1,392	
Sports	1,150	1,150	

Computer Contingency	1,150	1,150	
Medical Charges	1,100	1,100	
Hostel Rent	4,593	4,593	
Electricity Charges	3,061	3,061	
Benevolent fund	696	696	
Laboratory Fee	11,483	11,483	
Library Fee	1,531	1,531	
TOTAL B	**53,326**	**27,304**	**92,535**
TOTAL CHARGES PAYABLE			
Payable on Admission [Sem-1 (A+B)]	**1,05,822**	**79,800**	**1,68,233**
Payable for subsequent semesters (B)	**53,326**	**27,304**	**92,535**

M. B.A. (Pharm.)

Onetime payment of charges	General/ OBC/ EWS (Rs.)	SC/ST (Rs.)	Govt./Industry sponsored. (Rs.)*
*Admission Fee	5,000	5,000	
Alumni Fund	8,500	8,500	
Hostel Admission	3,496	3,496	
Group Insurance (for 2 years)	4,000	4,000	
Security Amount (Refundable)	27,500	27,500	Note: Refundable after successful completion of the course
Placement Fee	4000	4000	
TOTAL A	**52,496**	**52,496**	**75,698**
CHARGES PAYABLE FOR EACH SEMESTER			
Tuition Fee	1,11,968	0	
Examination/Evaluation Fee	1,150	1,150	
Registration Fee	1,392	1,392	
Sports	1,150	1,150	
Computer Contingency	1,150	1,150	
Medical Charges	1,100	1,100	
Hostel Rent	4,593	4,593	
Electricity Charges	3,061	3,061	
Benevolent fund	696	696	
TOTAL B	**1,26,258**	**14,290**	**2,30,294**
TOTAL CHARGES PAYABLE			
Payable on Admission [Sem-1 (A+B)]	**1,78,754**	**66,786**	**3,05,991**
Payable for subsequent semesters (B)	**1,26,258**	**14,290**	**2,30,294**

Study Guidelines

There will be a common paper for all Masters Programs including M.B.A. (Pharm.). The question paper will consist of 200 objective multiple type choice questions. The level of questions will be of B. Pharm.and M.Sc (relevant field). Duration of the examination will be 2 hours.

Well questions will be very easy so no need to go in depth of the topic, which clearly indicates that time management, is very important to get success in NIPER entrance. Understanding the question quickly is very important to pick the right choice. It is wise to leave the question if you do not know the answer perfectly. Chemistry, Pharmacology, Pharmacognosy, Biotechnology, Pharmaceutical analysis are the core subjects from which questions are being asked. There is no need to worry about Medicinal Chemistry and Pharmaceutical Jurisprudence as in GPAT, basic concepts based questions are asked M. Pharm branches and M.B.A. has a common entrance paper. So read some GK, GS, Pharma management, English language special Synonym and Antonym, Pharma News and Pharma Thrust area as given in the Book. Questions from various topics in a particular subject can vary from year to year, as exams are designed to test a student's understanding and knowledge of the subject matter. Even if the same topic is covered in different years, the questions asked may be different, and the level of difficulty can also vary.

GPAT and NIPER JEE Exam

GPAT EXAM	NIPER JEE EXAM
Computer-based online exam, Duration (3 hours), 125 MCQs (Max. marks -500)	Computer-based online exam, Duration (2 hours), 200 MCQs (Max. marks -200)
You will have 1.44 minutes per question (Rereading and rethinking is possible)	You will have 36 Sec per question (Speed and accuracy are must needed)
Mostly, questions are asked, which require application of basic knowledge and logic, to reach the correct answer.	Mostly, questions are asked directly, which require absolute basic knowledge to reach correct options, except some aptitude type questions, which require a logical way to answer.
Exam contains some time taking questions, requires more time to solve i.e. :– • **Match the following** • **Statement based** • **PQRS Questions** • **Assertion-Reason** • **Conceptual based MCQ**	Exam contains mostly one liner & straight forward questions (Less time Consuming) Requires basic knowledge to reach correct option
Syllabus is known and totally based on basic pharma knowledge	Syllabus, although same as GPAT, apart from pharma knowledge, questions are asked related to:- • **Mental Aptitude** • **General Knowledge** • **Business Processing** • **Indian Company Banking Acts & Rules** • **Business Management etc.**

Questions from Pharmaceutics, Pharmaceutical engineering, Physical Pharmacy and Biopharmaceutics are asked in depth.	Questions are more related to basics of dosage form and new drug delivery systems, polymers etc.
Chemistry all topics are very important and questions are asked related to structure, IUPAC, Basic rings, SAR, Synthesis.	Basics of Organic chemistry are important and questions are asked regarding name of reactions, application of basic synthetic reagents, general rules and concepts of stereochemistry.
Approximately, 20% questions are asked from Pharmacology.	Approximately, (15% questions are asked from Pharmacology, which mainly includes • **Molecular pharmacology** (types of receptors, transduction mechanisms and secondary messenger concepts) • **Drug classification** • **Mechanism of Action** • **Specific side effect** • **Drug interactions & contraindications, uses.**
General pharmacognosy and Microscopy, Chemical test, Chemical constituents, Chemical test	Questions are more or less similar to GPAT, mainly regarding :- • **Biological sources** • **Active constituents** • **Biogenetic pathway (alkaloids) and** • **Phytochemistry and Marine Drugs.**
Basic theory and instrumentation related questions are asked from analysis	Instrumental part is less important, but thorough knowledge of basic principles of all instrumental methods of analysis is required. EMR Range, Chromatography
Less numbers of questions are asked from Biochemistry and rarely on Biotechnology.	**In Biochemistry, more stress is given on :-** • **Carbohydrates** • **Amino Acids** • **Proteins and Peptides, Nucleic Acids** • **Enzymes, Basic Cycles.** **Biotechnology part related to :-** • **Proteins and peptides** • **Genetic engineering**
Questions related to current affairs in science, Reasoning aptitude, English and pharma recent news have not been asked yet	2-3 questions related to pharma news, which includes latest FDA approved drugs, company's brand products and latest Nobel prize winners, asked in the examination.

Syllabus

The NIPER does not have an official syllabus for its entrance examination. However, we have gathered information from our team and previous NIPER students to provide an expected syllabus. Our study materials and model question papers can assist in reviewing the subjects and practicing time management. If you aim to achieve a good rank in the NIPER entrance exam, it is essential to plan and prepare accordingly. Let us now discuss the preparation required for each subject in detail.

ORGANIC CHEMISTRY AND BULK DRUGS

1. IUPAC nomenclature, R and S nomenclature, E and Z isomerism, atropiisomerism, Conformations laws.
2. Hybridization, aromaticity, Huckel's rule reaction mechanisms- Electrophilic, Nucleophilic, SN1, Sn2, SNi, Elimination E1, E2 etc
3. Ester hydrolysis, Aac1 Aac2..all eight mechanisms (Jerry march) Markovnikoves rule with examples, Bredts rule, Stereoselectivity, stereospecificity, regioselectivity, chemoselectivity, chirality, stereochemistry, conformations, rearrangements, acids and bases.
4. Imine-enamine Tautomerism, keto-enol tautomerism, pericyclic reactions, racemic mixture, Resolution methods.
5. Amino acids, proteins, various methods for amino acid detection, Ninhydrin test, peptide sequencing, structures of amino acids, essential and nonessential amino acids.
6. Introduction to thermal methods of analysis like, TGA, DSC, DTA etc.
7. Carbohydrates, osazone test, mutarotation, etc.
8. Various Heterocycles, Heterocycle synthesis, reactions.
9. Introduction to Redox reactions.
10. Spectroscopy: (basics specially): Very very IMP topic. NMR, and C-NMR ranges from Morrison & Boyd or Pavia Mass -Basic concepts about various peaks M+1, molecular ion, base peak etc. (Silverstein) IR - Frequencies of various groups specially carbonyls. UV.
11. Chromatography: Details of every chromatographic method.
12. Reaction kinetics, first second third and pseudo first order reactions, radio labeling for determination of mechanism.
13. Common condensation reactions like Aldol, Claisen, Perkin, Dickmann, Darzen etc.
14. Other reactions like Cannizarro's reaction, Prins reaction, especially reactions of carbonyl compounds.
15. Oxidizing & reducing agents like sodium borohydride, chromic acid & their use in named reactions
16. Stereochemistry chiefly very important.
17. UV ranges, IR delta values, NMR peaks, Numericals

✍ Important study Points

- Computational drug design and molecular modeling: only few concepts need to be cleared.
- **"Mechanism of Chemical Reactions'** from O.P. Tandon
- **STEREOCHEMISTRY** is very important as NIPER JEE point of view
- **In name reaction,** remember **the name, starting product, catalyst, intermediate and end product.** No need to remember mechanisms and every step in detail.
- **Carbohydrates and Amino acids chemistry** can be covered from Satyanarayana biochemistry book.
- **Ester hydrolysis** should be covered. One question is asked on this every year.
- **Important books** are Morrison and Boyd, Finar, Bahl and Bahl

PHARMACOGNOSY AND NATURAL PRODUCTS

In natural products more stress should be given on phytochemistry part rather than biological aspects.

1. Methods of extraction, isolation and characterization of natural products. Various separation techniques used for isolation of natural products.
2. Biosynthetic pathways.
3. Primary metabolites, their examples.
4. Secondary metabolites, various classes of secondary metabolites (e.g. Alkaloids, glycosides, tannins, lignans, saponins, lipids, flavonoids, coumarins, anthocyanidines etc.). Here most imp. Part is chemistry of these classes.
5. Important therapeutic classes: antidiabetics, hepatoprotectives, immmunomodulators, neutraceuticals, natural products for gynecological disorders, anti-cancer, anti-viral (mainly anti HIV), adaptogens etc.
6. Dietary antioxidants, Marine natural products, Plant growth regulators.
7. Spectroscopy: Basic concepts of UV, NMR, IR and Mass spectroscopy. Give more stress on IR and NMR.
8. Stereochemistry: Basic concepts.
9. Fischer, sawhorse and newmon projection formulas.
10. Biological sources of important classes of natural products. (Selected ones only)
11. Standardization of natural products.
12. What is difference between natural products and pharmacognosy?
13. Natural products as anti viral & anti cancer agents with examples.

✍ Important study Points

- Biological sources of selected ones should be studied only, **especially of indigenous origin.** Focus on Important drugs only.
- **Microscopy See only types of stomata, trichomes etc,** chemical tests of all from Kokate and Khandelwal book
- Synonym, Important chemical constituents and Cultivation and collection where needed

PHARMACOLOGY AND TOXICOLOGY

1. Pharmacokinetics, pharmacodynamics, pharmacological effect, desired, undesired, toxic, adverse effects.
2. Bioavailability, bioequivalence, various factors of ADME. (From Bramhankar)
3. Drug metabolism: various pathways and other details.
4. Drug interactions, agonist, antagonist, partial agonist, protein binding, drug distribution, distribution volume, excretion pathways etc.
5. Pharmacological screening: general principles, various screening models, screening methodologies (in vitro and in vivo tests).
6. Mechanism of drug action, drug-receptor interaction.
7. Various adrenergic, cholinergic and other receptors
8. Detailed study of CNS pharmacology
9. Study of basis of threshold areas of work in NIPER in pharmacology dept. mentioned in brochure.
10. Diseases: study of the pharmacology of the diseases and drugs used with mode of action especially of diabetes, malaria, leishmaniasis, TB, hypertension, myocardial ischemia, inflammation, and immunomodualtion.
11. Chemotherapy and pathophysiology- knowledge of antibiotics, their mode of action and the microorganisms responsible for various common diseases.
12. Bioassay methods, various requirements. Brief knowledge of the statistical tests.
13. Basic mechanism of all drugs with major side effects & classification.
14. Receptors classification with examples.

✍ Important study Points

- MOA, toxicity, classification, adverse effects and specific use is very important do know (K.D. Tripathi),
- Drug interaction
- Syndrome

PHARMACEUTICS AND FORMULATION (PHARMACEUTICAL TECHNOLOGY)

1. Drug delivery systems (DDS): NDDS models, osmotic pumps, various release patterns eg.Controlled release, delayed release. Sustained release etc. order of release. Oral controlled DDS, factors affecting controlled release.
2. Carriers in DDS: polymers and their classification, types, carbohydrates, surfactants, proteins, lipids, prodrugs etc.
3. Transdermal drug delivery systems (TDDS): principles, absorption enhancers, evaluation of TDDS.
4. Parenterals: requirements, advantages, disadvantages, release pattern, route of drug delivery.

5. Drug targeting: microspheres, nano particles, liposomes, monoclonal antibodies, etc.
6. Preformulation detailed.
7. Complexation, solubilization, polymerization, viscosity measurements.
8. Dosage form development- stages, implications of dosage form.
9. Additives of formulation, types, examples, advantages, disadvantages, drug excepient interaction, incompatibility, various types of incompatibilities.
10. Dosage forms: solid (tablets, capsules, pills etc), liquid (emulsion, suspension etc), sterile (injectables), aerosols. Principles, advantages, disadvantages and problems.
11. Coating - in detail.
12. Packaging: materials, labeling etc. Types of containers (Tamper-proof containers)
13. In process controls, Product specification, documentation.
14. Compartmental modeling. (From Bramhankar)
15. Bioavailability, bioequivalence studies. Methods of improvement of oral bioavailability.
16. Evaluation of formulation, principles and methods of release control in oral formulations.

Important study Points

- **Preformulation study in detail from Lachman,** focus more on **bulk characterizations,** specially **amorphous, crystalline,** polymorphism, solvates, hydrates, **crystal habits, mesophase, surface area**, **aggregation, agglomeration,** complexation, **solubilization, polymerization**
- Calculations, posology, weights and measures and Latin names must be remembered.
- All **tables of Lachman and Martin.** Units are very important. **(You can refer GDC Digesters)**
- Regulatory aspects covered from Ansel and all unit operations (Do from Lachman) are recommended.
- **Read NDDS chapter minutely.**
- **Polymers are very important. Their name, class,** monomer unit, use should be remembered.
- **Basic concepts of physical pharmacy** should be clear, H-bonds, who invented polymorphism, number of polymorphs of particular drug, **what are xerogels, solubility of β-cyclodextrin,** etc. Follow Martin's book.

PHARMACEUTICALANALYSIS

1. Stability testing of pharmaceuticals, various stability tests, kinetic studies, shelf life determination, thermal stability, formulation stability.
2. Various analytical techniques
3. Tests: physical and chemical tests, limit tests, microbiological tests, biological tests, disintegration and dissolution tests.
4. Spectroscopic methods; UV, NMR, IR, MS, GCMS, FT-IR, FT-NMR, ATR (Attenuated Total Reflectance), FT-Raman- basics and applications.

5. Thermal techniques: DSC, DTA, TGA, etc.
6. Particle sizing: law of diffraction.
7. Electrophoresis: capillary electrophoresis.
8. Chromatography- detailed.
9. QA and QC: GLP, TQM, ISO system.
10. Preformulation, cyclodextrin inclusion compounds
11. Solubility: pH, pka, surfactant HLB values, Rheology.
12. Crystallinity, polymorphism, solvates and hydrates, crystal habits, porosity, surface area flow properties.
13. Dosage forms, Stages of dosage form development
14. Osmolality, osmolarity, osmotic pressure, conductivity, Preservatives, Media for bioassay.

Important study Points

- Principle and theory involved in various **techniques is sufficient**
- Types of chromatography do in **brief (only concept)**
- **Focus more on spectroscopy, especially UV, IR. NMR and mass,**
- Give attention to spectral analysis, **remember IR and NMR values thoroughly**
- For quality control related topics, see only basic understandings. Don't go into details.
- **Visit the website for ICH guidelines.**

PHARMACEUTICAL BIOTECHNOLOGY

1. **Enzyme :** Active site, Functional groups, Enz-Sub complex, Co-factors, Michaelis-menten eqn , Enzyme inhibition, Isoenzymes, Allosterism, Mechanism of action of some selected enzyme (Chymotrypsin, Trypsin). (Read from **Zubey**)
2. DNA replication, Transcription and Translation
3. **Recombinant DNA technology :** Bacterial transformation, transduction, etc. PCR, Southern, Northern blotting, Plasmid-Vector concept. (Read Microbiology-Tortora chapter on r-DNA technology).
4. **Immunology :** Concepts of Innate/ Adaptive/ immunity, epitope. Hypersensitivity reactions. ELISA, Immunofluorescence tests.
5. Microorganism for amino acids, baker's yeast, ethanol, aceton-butanol, citric acid, lactic acid. Also, antibiotics and vitamin producing organism.

BIOCHEMISTRY

1. Carbohydrates - Types of carbohydrates, Glycogenesis, glycogenolysis, & gluconeogenesis. Hexose monophosphate Shunt, associated diseases.
2. Proteins – Types, Denaturation, Biological activity, Renaturation, Urea formation, urea cycle, creatinine formation, Proteins as enzymes.
3. Lipids - Beta-Oxidation of fatty acids with energetics. Biosynthesis of cholesterol, bile acids / salts. Ketone bodies, associated diseases.

4. Vitamins - Biochemical role, Deficiency symptoms, Vitamins as co-factors in biochemical reactions.
5. Enzymes – Classification, Enzyme co-factors, Enzyme kinetics, Enzyme inhibition, competitive & non-competitive, & kinetics.
6. Nucleic acids - Purine & pyrimidine bases, DNA & RNA molecules, genetic information, Central dogma, Replication of DNA

✍ Important study Points

- Proteins, carbohydrate, lipids, enzymes & genetics are very important. Cover it from Satyanarayanan
- Read only general and basic information like starting points of cycles and enzymes used, from Metabolism.
- Ramchandran plot
- Symbols for amino acids. Read biomolecules chapter from Morrison and Boyd

MICROBIOLOGY

1. Microscopy and staining technique – Principle, working, Fluorescence & electron microscope, staining procedure
2. Bacteria - Fine structure, growth curve, Counting Methods, IMVIC test, Reproduction
3. Fungi and Viruses - Industrial and medical significance, HIV and Prions, types of Tumor viruses.
4. Microbial Assay - Importance, general methods of assay of antibiotics, methods for fungicidal & antiviral compounds, assay, microbial limit tests
5. Vaccines & Sera- Manufacturing, quality control, Preparation of allergenic extracts & diagnostics.

✍ Important study Points

- **Staining, vaccines, understanding of HIV.**
- **Study reproduction in bacteria and virus.**
- **Influenza, and Cancer are important.**
- **Storage of vaccines should be studied.**
- **Disease and their causing agent**

PHARMACEUTICAL JURISPRUDENCE

1. The Pharmacy Act
2. Drugs and Cosmetics Act & Rules
3. Narcotic Drugs and Psychotropic Substances Act
4. Drugs and Magic Remedies
5. Medicinal and Toilet Preparations
6. Medical Termination of Pregnancy Act

7. Prevention of Cruelty to Animals Ac
8. Drug (Price Control) Order.
9. Intellectual Property Rights and Indian Patent Act
10. Prevention of Food Adulteration Act and Rules

Important study Points

- **All schedules,** whole of D&C Act, **various years, administrative**
- **Some knowledge of Intellectual Property Rights** (Patents, copyrights, trademarks, trade secrets, etc.)

PHARMACY PRACTICE

The best part for the preparation for this best reference for this would be Remington's Pharmaceutical Sciences. This branch is quite new here, so till dates students of branch used to do case study of prescriptions in Fortis hospital, PGI Chandigarh and govt. college chd. This is much like pharmacology and drug-drug interactions and different interactions are emphasized. Diabetes, heart diseases are main area of study.

PHARMACOINFORMATICS

Terminologies related with new emerging informatics e.g. proteomics, genomics, QSAR (2D, 3D, regression, correlation).

Important study Points

- **Parametric/non-parametric test chi-square, t-test,** Wilcoxon signed-rank, goodness of fit.
- General: Mean, median, mode, standard deviation, correlation coefficient, variance, probability, precision, accuracy mean error, **relative error, profit and loss analysis**
- Regression: linear, **multiple regressions, correlation concept**
- Experimental design, factorial design, **Latin square design, crossover and parallel design.**
- **See about ANOVA.**

PHARMACEUTICAL MANAGEMENT

- ✓ **Organizational Behavior:** Ways in which people interact within organizations, including topics such as **motivation, leadership, communication, and team dynamics.**
- ✓ **Marketing Management:** Principles of marketing, including market research, product development, pricing, **promotion, and distribution.**
- ✓ **Financial Management:** Principles of finance and accounting, including financial analysis, budgeting, and **financial statement analysis.**
- ✓ **Operations Management:** Principles of operations management, including supply chain management, inventory **management, and production management.**

- ✓ **Strategic Management:** Strategy for an organization, including topics such as SWOT analysis, competitive **analysis, and strategy formulation.**
- ✓ **Human Resource Management:** Principles of managing people within organizations, including topics such as **recruitment, training, performance management,** and employee relations.
- ✓ **Project Management: Principles of managing projects,** including project planning, scheduling, **budgeting, and risk management.**

MISCELLANEOUS TOPICS (A STUDENT MUST REFER)

- **US FDA Approved Drugs**
- **Indian National Awards**
- **Founders of Big Companies**
- **Branded Products**
- **Important Software**
- **Pharma news**
- **Drug Interaction of Common Drugs**
- **General Knowledge, Logic & Aptitude**
- **Regulatory Authority of Different Countries**
- **National Laboratories & Research Institutes**
- **Basic knowledge about NABARD, RBI, SBI, planning commission**
- **Nobel Prizes**
- **Top Pharma Companies**
- **Brand Name**
- **Abbreviation and full forms**
- **Facts about Corona Virus**
- **New products from company**
- **Notable Epidemics And Pandemics**
- **Mental Ability & General Aptitude**

OTHERS (MOST IMPORTANT & SCORING)

Statistics, general mathematics and aptitude questions. Use MBA entrance test books like CET or CAT in MBA.

- Additionally some General awareness questions, synonym & antonyms - 5-10 questions
- Latest drugs banned & approved in US market, read latest journals, internet for this-5-6 questions
- Complete basics of organic chemistry.
- Advancement in analytical chemistry.

NIPER'S THRUST AREAS

- Microbial and viral diseases: Yeast, and fungi.
- Parasitic and tropical diseases: Malaria, Leishmaniasis, amoebiasis, cancer, aids etc.
- Metabolic Disorders: Diabetes Strokes
- Oxidizing, reducing agents & Stereochemistry
- Organic reactions & mechanisms
- Peptide and carbohydrate chemistry.
- Genomics and proteomics: yeast and fungi
- Hormonal disorders: Sex & TSH related diseases

But remember its not tough job you can attempt all questions. Only don't waste time on tough question more than 45sec. Most of the questions will take 5sec. to attempt. Try to manage time and success is yours.

Well we repeat again **no need to know everything very thoroughly but go through each bit and piece at least once. Basic conceptual and logical questions are there don't go in more depth.**

Lastly, remember

Men often believe what they believe themselves to be.

If I believe I can not do something, it makes me incapable of doing it.

But when I believe I can, and then I acquire the ability to do it even if I didn't have it in the beginning.

So think that you are destined to be in NIPER and rest assured you will be part of it.

ALL THE BEST