

Information Guide for M.Sc. and Integrated Ph.D. Entrance exams for Biology stream students

Graduating Biology Streams

- Botany
- Microbiology
- Zoology
- Biotechnology

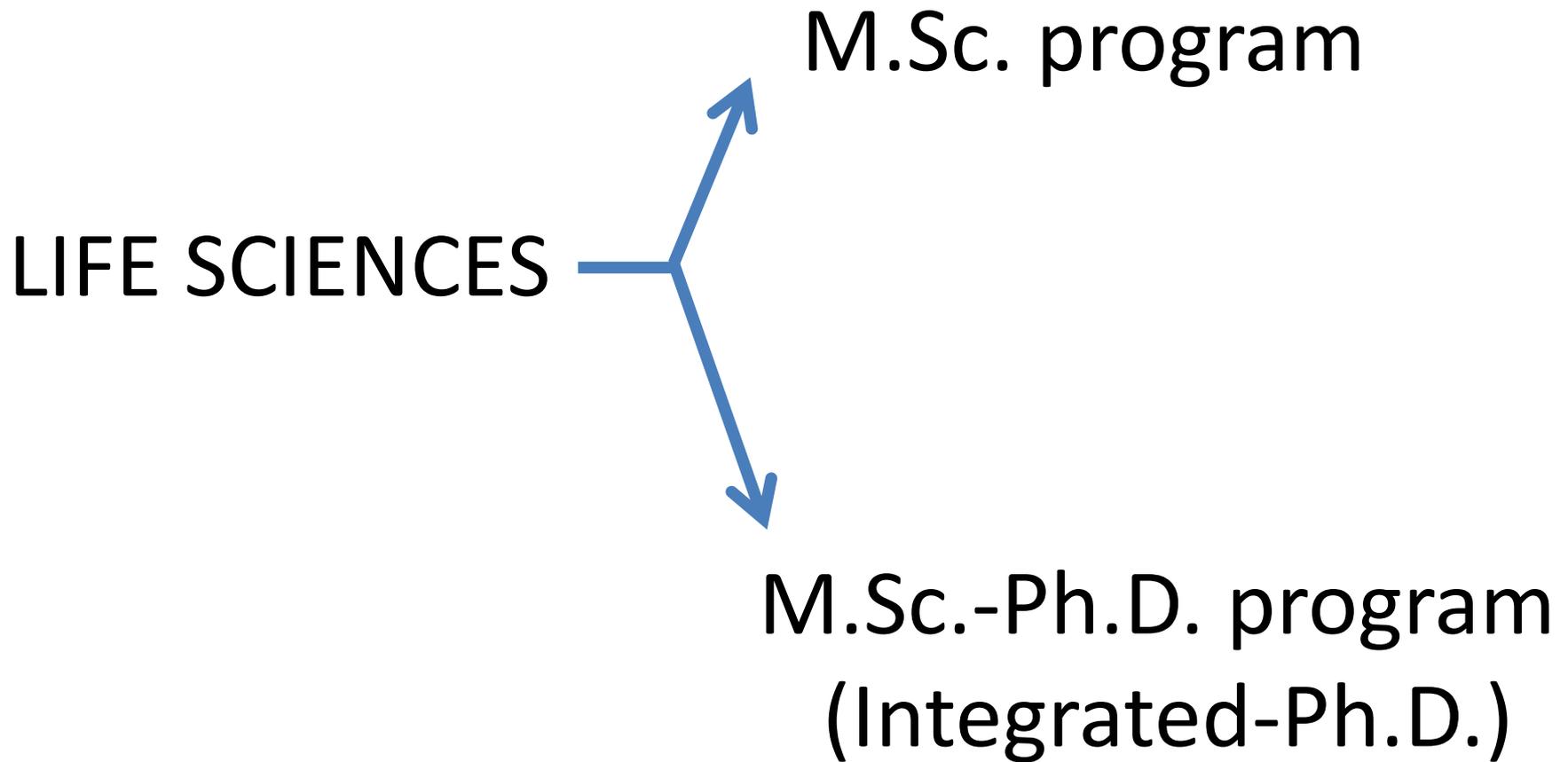
List of top entrance exams

- IIT-JAM
- JNU-CEEB
- TIFR-JGEEBILS
- CUCET
- Individual Universities
- TATA-Clinical Research

WHAT IS THE LIFE SCIENCES?

-Life sciences is the scientific study of living organisms like plants, animals (including human), and microorganisms.

-It includes basic sciences (Botany, Zoology, and Microbiology), applied sciences (Biological Science, Biotechnology) and other sciences (food sciences, Biochemistry, Virology, Biophysics, Bioinformatics etc).



List of M.Sc. Courses:

- M.Sc. Biotechnology
- M.Sc. Biological Sciences
- M.Sc. Wildlife Biology and Conservation
- M.Sc. Biochemistry
- M.Sc. Bioinformatics
- M.Sc. Applied Biology
- M.Sc. Zoology
- M.Sc. Botany
- M.Sc. Forensic Science
- M.Sc. Molecular and Human Genetics
- M.Sc. Plant Biology and Biotech
- M.Sc. Animal Biotech
- M.Sc. Molecular Biology
- M.Sc. Biomedical Research
- M.Sc. Genetics
- M.Sc. Microbiology
- M.Sc. Pharmacology
- M.Sc. Anatomy
- M.Sc. Biophysics
- M.Sc. Bioinformatics
- M.Sc. Clinical Research

MAJOR ENTRANCE EXAMS FOR M.Sc. or INTERGRATED Ph.D. PROGRAM:

- 1. Indian Institutes of Technology-Joint Admission Test for M.Sc. (IIT-JAM)** for M.Sc. (Two Years), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, and other Post-Bachelor Degree Programs
- 2. Jawaharlal Nehru University-Combined Entrance Examination for Biotechnology (JNU-CEEB)** for M. Sc. in number of UGC funded universities.
- 3. Tata Institute of Fundamental Research (TIFR), Mumbai** conducts graduate school admissions (**GS**) exam which is also called the Joint Graduate Entrance Examination for Biology and Interdisciplinary Life Sciences (**JGEEBILS**).

4. Central Universities-Common Entrance Test (CUCET).

Which includes 14 Universities

5. Individual University entrance exams:

Number of Universities conduct their own entrance tests.

6. M.Sc. Clinical Research in TATA Memorial Hospital, Mumbai

Why to appear for these exams?

Getting into one of the India's best Institutes can be a challenging task and many students ONLY dream about it.

- Great educational environment, where you excel your skills
- These Institutes give a great base to launch your career
- These Institutes have high edge curriculum which keeps you updated for future challenges
- Less course fees
- Scholarships during the course

1. IIT-JAM (Joint Admission test for M.Sc.):

Participating Institutes:

I. INDIAN INSTITUTES OF TECHNOLOGY (IIT)

- | | | |
|----------------|----------------|--------------|
| 1. BHUBANESWAR | 2. BOMBAY | 3. DELHI |
| 4. DHANBAD | 5. GANDHINAGAR | 6. GUWAHATI |
| 7. HYDERABAD | 8. INDORE | 9. JODHPUR |
| 10. KANPUR | 11. KHARAGPUR | 12. MADRAS |
| 13. PATNA | 14. ROORKEE | 15. ROPAR |
| 16. VARANASI | 17. BHILAI | 18. PALAKKAD |
| 19. TIRUPATI | 20. MANDI | |

IITs provide M.Sc. (Two Years), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, and other Post-Bachelor Degree Programs

II. INDIAN INSTITUTE OF SCIENCE, (IISc) BANGALORE

Provides Integrated Ph.D. program

- **Admission Process:** Online test

- **Pattern of Test: Objective type**, with three different patterns of questions, namely
 - (i) Multiple Choice Questions (MCQs),
 - (ii) Multiple Select Questions (MSQs), and
 - (iii) Numerical Answer Type (NATs) questions.

- **Notification:** September
- **Date of Test:** February

- **Admission procedure:** No additional requirements, such as **suitability test** or **interview**, are needed for admission to the programs under JAM.

- **Integrated Ph.D. programs at IISc Bangalore** will use the **JAM results to shortlist candidates for the final selection.**

- JAM score will also be used by other centrally funded technical institutions like **IISc, NITs, IEST Shibpur, SLIET Punjab and IISERs** for admission to their programs.
- JAM is conducted in seven subjects, also referred to as Test Papers; **Biological Sciences (BL), Biotechnology (BT)**, Chemistry (CY), Geology (GG), Mathematics (MA), Mathematical Statistics (MS) and Physics (PH).
- **Minimum eligibility:** Bachelor's degree with at least 55% or 5.5 out of 10 for General/OBC (NCL) category candidates, and 50% or 5.0 out of 10 for SC/ST and PwD category candidates.

2. Jawaharlal Nehru University-Combined Entrance Examination for Biotechnology (JNU-CEEB) for 2 years M.Sc. In Biotechnology, Molecular & Human Genetics, Neuroscience in **32** participating Universities.

Participating Universities:

1. University of Allahabad, Allahabad, (M.Sc. Biotechnology)
2. Annamalai University, Tamil Nadu (M.Sc. in Marine Biotechnology)
3. Baba Ghulam Shah Badshah University, Rajouri (M.Sc. in Bioresource's Biotechnology)
- 4. Banaras Hindu University, Varanasi (M.Sc. Biotechnology)**
- 5. Banaras Hindu University, Varanasi (M.Sc. in Molecular & Human Genetics)**
- 6. University of Calicut, Kerala (M.Sc. Biotechnology)**
7. Devi Ahilya Vishwavidyalaya, Indore (M.Sc. Biotechnology)
- 8. Goa University, Goa (M.Sc. in Marine Biotechnology)**
9. Gulbarga University, Gulbarga (M.Sc. Biotechnology)

Participating Institutes continue.....

10. Guru Jambheshwar University of Science & Technology, Hisar (M.Sc. Biotechnology)
11. Guru Nanak Dev University, Amritsar (M.Sc. Biotechnology)
12. Himachal Pradesh University, Shimla (M.Sc. Biotechnology)
13. HNB Garhwal University, Garhwal (M.Sc. Biotechnology)
- 14. University of Hyderabad, Hyderabad (M.Sc. Biotechnology)**
15. University of Jammu, Jammu (M.Sc. Biotechnology)
- 16. Jawaharlal Nehru University, New Delhi (M.Sc. Biotechnology)**
17. Kumaun University, Nainital (M.Sc. Biotechnology)
- 18. University of Lucknow, Lucknow (M.Sc. Biotechnology)**
19. Maharshi Dayanand University, Rohtak (M.Sc. in Medical Biotechnology)
- 20. M.S. University of Baroda, Vadodara (M.Sc. Biotechnology)**
21. University of Mysore, Mysore (M.Sc. Biotechnology)
22. University of North Bengal, Siliguri (M.Sc. Biotechnology)
23. North Eastern Hill University, Shillong (M.Sc. Biotechnology)
- 24. Pondicherry University, Pondicherry (M.Sc. Biotechnology)**
- 25. Savitribai Phule Pune University, Pune (M.Sc. Biotechnology)**
- 26. Sardar Patel University, Anand (M.Sc. in Industrial Biotechnology)**
- 27. Shivaji University, Kolhapur (M.Sc. in Environmental Biotechnology)**
28. Tezpur University, Tezpur (M.Sc. in Molecular Biology & Biotechnology)
29. Utkal University, Bhubaneswar (M.Sc. Biotechnology)
30. Visva-Bharati University, Santiniketan (M.Sc. Biotechnology)
31. Jiwaji University, Gwalior (M.Sc. in Neuroscience)
32. Sri Padmavathi Mahila Vishvavidyalayam, Tirupati (M.Sc. Biotechnology)

- **Pattern of Test:** Multiple Choice type Questions, written test (JNU-CEEB)
- **Notification:** September
- **Date of Test:** December
- **Eligibility:** Bachelor's degree under 10+2+3 pattern of education in Physical, Biological, Agricultural, Veterinary and Fishery Sciences, Pharmacy, Engineering/Technology, 4-years B.Sc. (Physician Assistant Course); OR Medicine (MBBS) OR B.D.S. with at least 55% marks.
- **Selection procedure:** As per JNU-CEEB score and preference of the University given by students
- **Scholarship:** Students selected for admission to M.Sc. Biotechnology Program of the participating Universities will be eligible to receive scholarship at the rate of Rs.3000/- p.m.

3. Tata Institute of Fundamental Research (TIFR), Mumbai conducts graduate school admissions (**GS**) exam which is also called the Joint Graduate Entrance Examination for Biology and Interdisciplinary Life Sciences (**JGEEBILS**).

➤ **Program:** M.Sc. (3 years) and Integrated Ph. D. program (6 years)

➤ **Participating Institutes:**

- ❖ **ACTREC:** Advanced Centre for Treatment, Research and Education in Cancer, **Mumbai**
- ❖ **Bose Institute:** Bose Institute, Kolkata
- ❖ **CCMB:** Centre for Cellular and Molecular Biology, Hyderabad
- ❖ **CDFD:** Centre for DNA Fingerprinting and Diagnostics, Hyderabad
- ❖ **DBS-TIFR:** Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai
- ❖ **IISER:** Indian Institute of Science Education and Research at: **Kolkata, Pune, Thiruvananthapuram, Tirupati**

- ❖ IMSc: Institute of Mathematical Sciences, Chennai
- ❖ **InStem**: Institute for Stem Cell Biology and Regenerative Medicine, Bengaluru
- ❖ **MAHE**: Manipal Academy of Higher Education, Manipal (Life Sciences)
- ❖ **NBRC**: National Brain Research Centre, Manesar
- ❖ **NCBS**: National Centre for Biological Sciences, Bengaluru
- ❖ **NCCS**: National Centre for Cell Science, Pune
- ❖ **NII**: National Institute of Immunology, New Delhi
- ❖ **NISER**: National Institute of Science Education and Research, Bhubaneswar
- ❖ RCB: Regional Centre for Biotechnology, Faridabad
- ❖ SINP: Saha Institute of Nuclear Physics, Kolkata
- ❖ **TIFR** Centre for Interdisciplinary Sciences (TCIS), **Hyderabad**

- **Notification:** October
- **Exam date:** December
- **Pattern of test:** Written test
- **Selection procedure:** Candidates will be shortlisted for on-campus interviews based on exam marks, CV, scientific write-up (SOP), and letters of recommendation.
- **Programs offered:**
 - a) Ph.D. (NCBS, DBS, TIFR-H), Course duration: 5 years
 - b) Integrated PhD (NCBS, DBS, TIFR-H), Course duration: 6 years
 - c) M.Sc. by Research (DBS)
 - d) M.Sc. in Wildlife Biology and Conservation (NCBS) **(Once in two years)**

Eligibility:

- ❑ **For I-Ph.D./M.Sc.:** Bachelors in any Basic Science (Physics/Chemistry/Any branch of Biology) OR any 4-year degree program that awards a "Bachelor's degree" including B.Tech., B.E., B.V.Sc., B.Pharma. (4 year course).
- ❑ **For Ph.D.:** Masters in Basic Science (M.Sc. Physics/Chemistry/Any branch of Biology) or any professional Master's Degree (M.Pharma./M.Tech.), or a > 4 year degree program (e.g. MBBS, BDS).

Scholarships:

- **M.Sc. (Biology)** Students receive a monthly fellowship of ₹ 16000/-.
- **M.Sc. (Wildlife Biology & Conservation)** Students receive a monthly fellowship of ₹ 12000/-.
- **I-Ph.D.** Students receive a monthly fellowship of ₹ 16,000/- for the first year. At the end of the first year, upon satisfactory performance, the fellowship is enhanced to ₹ 25,000/- per month (further raised to ₹ 28,000/- after registration for Ph.D.).
- **Ph.D.** Students receive a monthly fellowship of ₹ 25,000/- (enhanced to ₹ 28,000/- after registration).

4. Central Universities-Common Entrance Test (**CUCET**) which includes 14 Universities for M. Sc. in Biotech, Animal Science, Biochemistry and Molecular Biology.

Participating Universities:

- ❖ Central University of Haryana, (CUHAR)
- ❖ Central University of Jammu, (CUJAM)
- ❖ Central University of Jharkhand, (CUJHD)
- ❖ Central University of Karnataka, (CUKNK)
- ❖ Central University of Kashmir, (CUKAS)
- ❖ Central University of Kerala, (CUKER)
- ❖ Central University of Punjab, (CUPUN)
- ❖ Central University of Rajasthan, (CURAJ)
- ❖ Central University of South Bihar, (CUSBR)
- ❖ Central University of Tamil Nadu, (CUTND)
- ❖ Bengaluru Dr B R Ambedkar School of Economics, (BASE)
- ❖ Central University of Gujarat, (CUGUJ)
- ❖ Central University of Andhra Pradesh, (CUAPH)
- ❖ Mahatma Gandhi Central University, Bihar, (CUMGB)
- ❖ Assam University, Silchar, (CUASM)

- **Exam type:** MCQ
- **Notification:** March
- **Exam date:** May
- **Number of seats:** Varies according to university
- **M.Sc. Subjects: (Related to Biology)**

Biochemistry, Bioinformatics, Biotechnology, Botany, Environmental Science and Technology, Food Science and Technology, Genomic Science, Life Sciences, Microbiology, Nanotechnology, Nutrition Biology, Plant Science, Zoology.

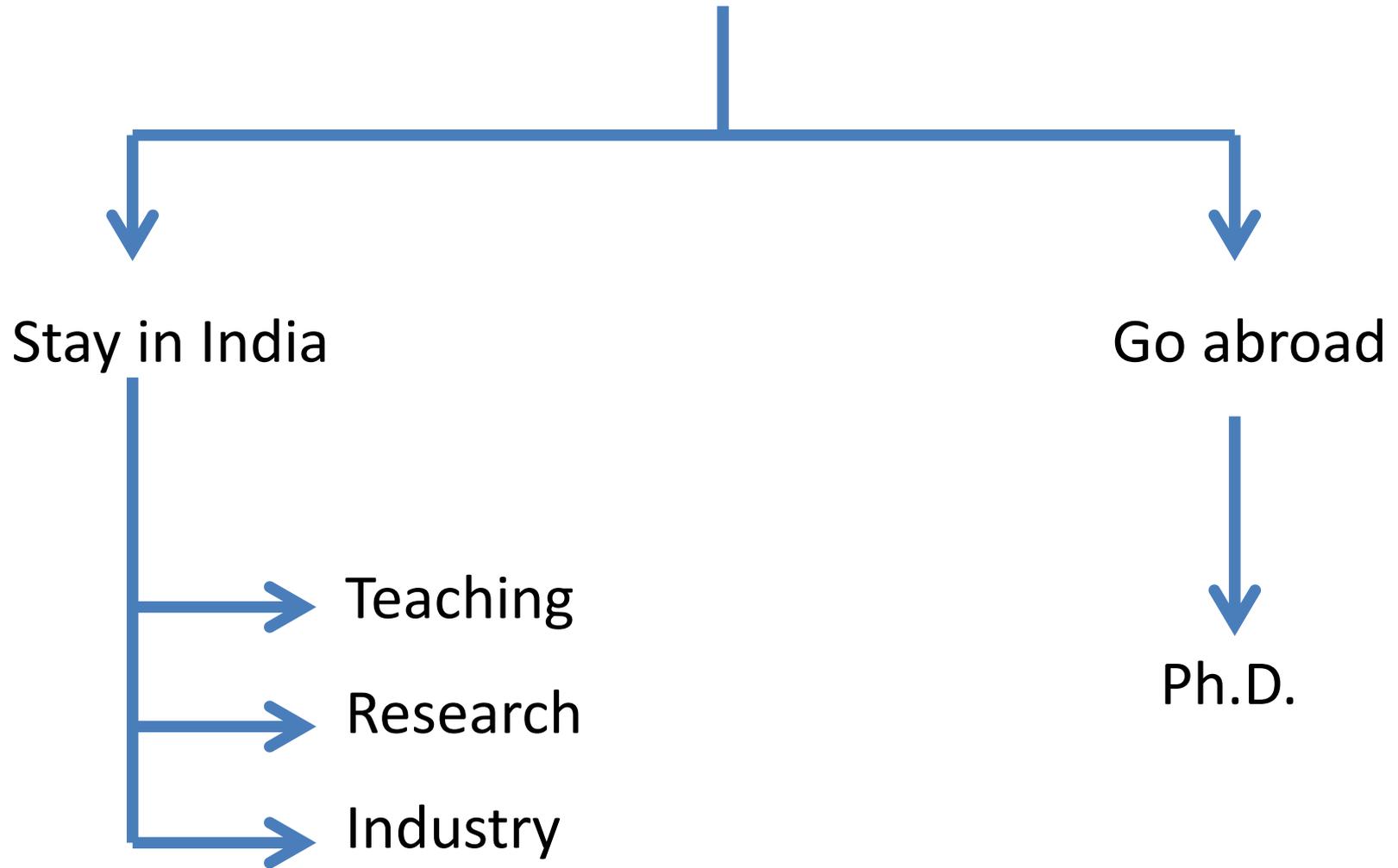
5. Individual entrance test for M. Sc. (2 years) in no. of Universities:

- Savitribai Phule Pune University (SPPU Pune, Mh)
- Andhra University (Visakhapatnam, AP).
- Banaras Hindu University (Varanasi, UP).
- University of Goa (Goa).
- Chhatrapati Shahu Ji Maharaj (CSJM) University (Kanpur, UP).
- Delhi University (Delhi).
- Madurai Kamaraj University (Hyderabad, Telangana).
- Bharathidasan University, (Tiruchirapalli, TN).
- Aligarh Muslim University, (Aligarh, UP).
- Osmania University, (Hydrebad, Telangana).
- University of Madras, (Chennai, TN).

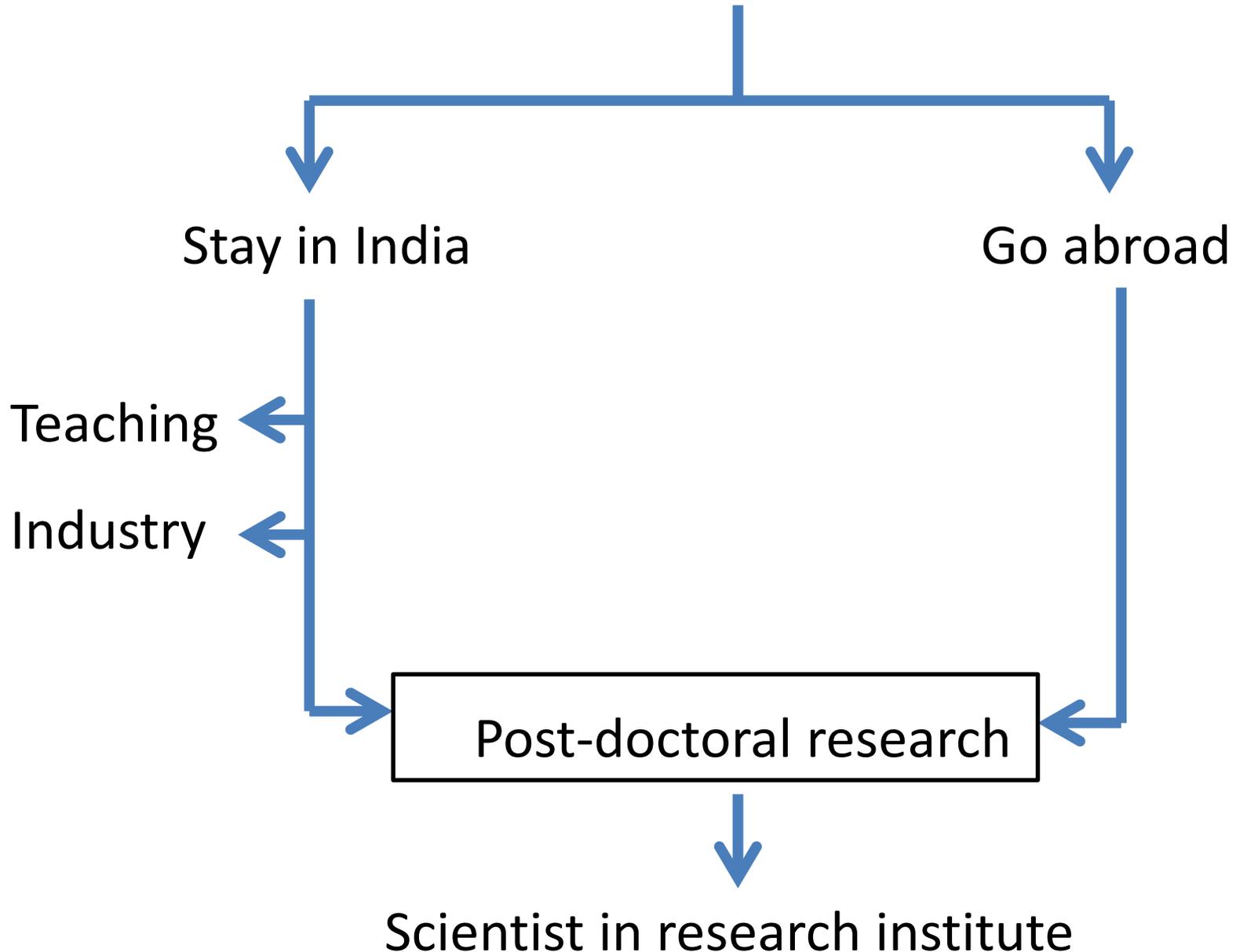
6. M.Sc. Clinical Research in TATA Memorial Hospital, Mumbai

- **Notification:** April-May
- **Exam date:** June
- **Interview:** July
- **Exam Pattern:** MCQ test
- **Course duration:** M.Sc. (2 years) + Internship (1 year)
- **Selection procedure:** Test score, Interview for selected candidates
- **Stipend:** First year: 10000 ₹ per month
Second year: 12000 ₹ per month
Third year (Internship period): 16000 ₹ per month

After M. Sc.



After integrated-Ph.D.



Catalyst Academy of Life Sciences [CALs], Mumbai

These institutes have few seats in take capacities (Mostly around 25), and All India competition makes it even tougher. So for each course only toppers gets selected. In addition, few institutes conduct the interviews and check scientific writing skills also.

CALS provide you a complete guidance which help you to ensure success in the entrance exams. Our program covers

- Classroom coaching covering all necessary syllabus (Biology, Chemistry, Physics, Maths)
- Quality notes
- Regular Online tests
- Interview Preparation
- SOP writing practice (Scientific writing)
- Career guidance during application, exam preparation, and admission



THANK YOU.