



राष्ट्रीय परीक्षा एजेंसी
National Testing Agency
Excellence in Assessment




icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH

DHR-ICMR

NON-MEDICAL FELLOWSHIP for Ph.D

BIOMEDICAL RESEARCH ELIGIBILITY TEST - 2024




**Information
BULLETIN**



www.nta.ac.in, <https://exams.nta.ac.in/>

NATIONAL TESTING AGENCY

Vision

The right candidates joining best institutions will give India her demographic dividend.

Mission

To improve equity and quality in education by administering research based valid, reliable, efficient, transparent, fair and international level assessments. The best subject matter experts, psychometricians and IT delivery and security professionals will ensure that the current gaps in existing assessment systems are properly identified and bridged.

Core Values

NTA will create a system which will promote teaching (by teachers), learning (by students) and assessment (by parents and institutions). NTA strongly believes in quality, efficiency, effectiveness, equity and security of assessments. To practice these values, NTA will constantly engage with its stakeholders, viz. students, parents, teachers, experts and partner institutions.

TABLE OF CONTENT

CHAPTER NO.	CHAPTER NAME	PAGE NO.
	IMPORTANT INFORMATION AND DATES AT A GLANCE	01-04
CHAPTER – 1	INTRODUCTION ABOUT NTA AND ICMR	05-07
CHAPTER – 2	ELIGIBILITY CRITERIA	8
CHAPTER – 3	DETAILS OF EXAMINATION	9-10
CHAPTER – 4	FACILITIES FOR PwD CANDIDATES	11-12
CHAPTER – 5	REGISTRATION AND APPLICATION PROCESS	13-18
CHAPTER – 6	ADMIT CARD, INSTRUCTION AND PROHIBITED MATERIALS	19-22
CHAPTER – 7	UNFAIR MEANS PRACTICES	23-24
CHAPTER – 8	PROCEDURE OF FINALIZE THE ANSWER KEY	25
CHAPTER – 9	GENERAL / MISCELLANEOUS PROVISIONS	26-31

Appendix

Appendix – 1	LIST OF EXAM CITIES	32
Appendix – 2	REPLICA OF THE APPLICATION FORM	33-45

ANNEXURE

Annexure – I	PROFORMA FOR APPEARING/ RESULT AWAITED CANDIDATES	46
Annexure – II	PROFORMA PRESCRIBED FOR SC/ST CERTIFICATE	47
Annexure – III	PROFORMA PRESCRIBED FOR OBC	48
Annexure – IV	DECLARATION TO BE SIGNED BY OBC CANDIDATES ONLY	49
Annexure – V	SELECTION CRITERIA FOR PERSON WITH BENCHMARK DISABILITIES	50
Annexure – VI (A)	FORM-V OF CERTIFICATE OF DISABILITY	51
Annexure – VI (B)	FORM-VI OF CERTIFICATE OF DISABILITY	52
Annexure – VI (C)	FORM-VII OF CERTIFICATE OF DISABILITY	53
Annexure – VII (A)	LETTER OF UNDERTAKING FOR USING SCRIBE	54
Annexure – VII (B)	CERTIFICATE REGARDING PHYSICAL LIMITATION IN AN EXAMINEE TO WRITE.	55
Annexure – VII (C)	LETTER OF UNDERTAKING FOR USING OWN SCRIBE	56
Annexure – VIII	FORMAT FOR INCOME AND ASSETS CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTION (GENERAL CATEGORY)	57
Annexure – IX	SYLLABUS	58-72

IMPORTANT INFORMATION AND DATES AT A GLANCE

(Please refer to Information Brochure for details)
Dates, Fee Details and Application Procedure for

DHR-ICMR 2024

Name of the Examination	Biomedical Research Eligibility Test (BRET)
Online registration and submission of Application Form through NTA Website(s): https://nta.ac.in/ , https://exams.nta.ac.in/	19.06.2024 to 09.07.2024 (up to 11:50 PM)
Last date for successful transaction of Examination fee	09.07.2024 (up to 11:50 PM)

Fee Payable for DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET) (Debit/Credit Card/UPI or Internet Banking through any of the payment gateway of ICICI)	
Category	Application Fee
General / General-EWS	INR 1800
OBC(NCL)*/SC/ST	INR 1500
PwBD/Third Gender	INR 1200
Note:	
<ul style="list-style-type: none"> An applicant can apply for payment through net-banking/debit/credit card/UPI. Service charges of the concerned Bank/ Payment Gateway Integrator, as applicable. Applicants are advised to read Payment instructions carefully before paying the application fee. 	

*OBC (Other Backward Classes)-NCL (Non-Creamy Layer) as per the central list of Other Backward Classes available on the website of National Commission for Backward Classes. The candidates falling in this list may mention OBC in the Category Column.

Name of the Examination	Biomedical Research Eligibility Test (BRET)
Correction in the Particulars of Application Form online only	10.07.2024 to 11.07.2024
City Intimation Slip	To be announced later through website.
Downloading of Admit Card by the Candidate from NTA Website	To be announced later through website.
Mode of Examination	Computer Based Test (CBT)
Pattern of Examination	Objective Type with MCQ
Duration of Examination	120 minutes (02 hours)
Date of Examination Schedule	31.07.2024 (Tentative)
Timing of Examination	Will be announced on NTA website
Centre, Date and Shift of Exam	As mentioned on the Admit Card
Display of Recorded Responses and Answer Keys	Will be announced later on website
Declaration of Result on NTA Website	Will be announced later on website
Website	www.nta.ac.in https://exams.nta.ac.in/

1. Candidates can apply for **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** through “Online” mode only.
 2. Candidates must carefully read the Instructions (including how to fill up Application Form online) given in the Information Brochure available on the NTA Website. Candidates not complying with the Instructions shall be summarily disqualified.
 3. Submission of Online Application Form may be done by accessing NTA website <https://exams.nta.ac.in/>. Application Form in any other mode will not be accepted.
 4. **Only one application is to be submitted by a candidate.**
 5. Candidates must ensure that E-mail Address and Mobile Number provided in the **Online Application Form are their own** as all information/ communication will be sent by NTA through e-mail on the **registered e-mail address or SMS on registered Mobile Number only**.
 6. Instructions for filling Online Application Form:
 - ❖ Download Information Brochure and read the same carefully regarding eligibility and procedure / documentation required for filling the Online Application Form.
 - ❖ **Follow the steps given below to Apply Online:**
 - Step-1:** Register for Online Form submission using unique Email ID and Mobile No.
 - Step-2:** Fill in the Online Application Form and note down the system generated Application No. Upload legible scanned images of: (i) a recent photograph (in jpg file, size 10Kb – 200Kb) either in colour or black & white with 80% face (without mask) visible including ears against white background; (ii) candidate’s signature (in jpg file size: 4kb - 30kb) (iii) Duly verified Result Appearing/Awaited Form (in PDF format file size: 50KB to 500KB), (iv) Category Certificate, if applicable (SC/ ST/ OBC/ EWS etc.) (in PDF format file size: 50KB to 300KB) & (v) PwD Certificate, if applicable (in PDF format file size: 50KB to 300KB).
 - Step-3:** Pay prescribed fee **through Net Banking / Debit Card / Credit Card and UPI**, keep proof of fee paid for future reference.
 - ❖ Download, save and print copies of Confirmation Page after successful remittance of fee and keep copies safely for future reference.
- All the 3 Steps can be done together or at separate sittings.**
7. After the submission of Online Application Form (i.e., successful completion of all the Steps), Confirmation Page of the Application Form, should be downloaded and a printout of the same may be retained for future reference. The Confirmation Page of the online Application Form will be generated **only after successful payment by the Candidate**.

In case the Confirmation Page is not generated after payment of the prescribed Fee, the candidate should approach the concerned Bank / Payment Gateway integrator (at the helpline number and email given in the Information Brochure), for ensuring the successful payment.

In spite of the above, if successful transaction is not reflected on the Portal, it means transaction is not complete and candidate may pay second time and ensure OK status. However, any duplicate payment received from the candidate by NTA in course of said transactions will be refunded (in the same payment mode through which the duplicate payment is received), after fee reconciliation by NTA.

8. **Information such as his/ her name, contact details / address, category, PwD status, educational qualification details, date of birth, choice of exam cities, etc. provided by the candidate in the online Application Form will be treated as final.** Any request for change in such particulars after the closure of correction period will not be considered by NTA.
9. **NTA does not edit/modify/alter any information entered by the candidate under any circumstances. Any request for change in information will not be entertained. Therefore, candidates are advised to exercise utmost caution for filling up correct details in the Application Form. Request for corrections made by any candidates through Post/Fax/WhatsApp/Email/by hand will not be entertained by NTA.**
10. *Candidates must ensure that their email address and mobile number registered on their online Application Form are their own, as relevant/ important information/ communication will be sent by NTA through e-mail on the registered e-mail address and/or through SMS on registered mobile number only. NTA shall not be responsible for any non-communication/ mis-communication with a candidate in the email address or mobile number given by him/ her other than his/ her own.*
11. *NTA disclaims any liability that may arise to a candidate(s) due to incorrect information provided by him/her in his/her online Application Form.*
12. Candidates are advised to visit the NTA Website and check their e-mails regularly for latest updates.
13. Role of NTA is confined to registration of candidates and conduct of exam. Further, finalization of answer keys after inviting challenges, processing and declaration of results and preparation of the list of qualified candidates is being done by NTA in collaboration with ICMR. NTA has no role to play in the award of fellowships or other downstream processes.

Notes:

- i. The final submission of Online Application Form will remain incomplete if Step-3 is not complete. Such forms will stand rejected and no correspondence on this account will be entertained.
- ii. No request for refund of fee once remitted by the candidate will be entertained by NTA under any circumstances.
- iii. The entire application process for **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** is online, including uploading of scanned images, payment of fees, and printing of Confirmation Page, Admit Card, etc.
- iv. Usage of Data and Information: NTA / Government of India can use the data provided by the End Users (test taker in this case) for internal purpose(s) including training, research and development, analysis and other permissible purpose(s). However, this information is not for use by any third party or private agency for any other use.

Candidates are advised to carry only the following with them into the examination venue:

- i. Admit card along with Self Declaration (Undertaking) downloaded from the NTA Website (A clear printout on A4 size paper) duly filled in
- ii. A simple transparent Ball Point Pen
- iii. Additional photograph (same as uploaded on the Online Application Form) to be pasted on the attendance sheet in examination Room/ Hall.
- iv. Any one of the authorized photo IDs (must be original, valid, and non-expired) – PAN card/ Driving License/ Voter ID/ Passport/ Aadhaar Card (With photograph) / E-Aadhaar with photograph/ Bank Passbook with Photograph
- v. PwBD certificate issued by the authorized medical officer, if claiming the relaxation under PwBD category
- vi. Personal transparent water bottle
- vii. Sugar tablets/fruits (like banana/apple/orange) in case the candidate is diabetic.

Notes:

1. In case it is found at any time in future that the Candidate has used / uploaded the photograph and signature of someone else in his/ her Application Form / Admit Card or he/she has tampered his/her Admit Card / result, these acts of the candidate shall be treated as Unfair Means (UFM) Practices on his/her part and he/she shall be proceeded with action as contemplated under the provisions of the Information Brochure relating to Unfair Means Practices.
2. Candidates are NOT allowed to carry Instruments, Geometry or Pencil box, Handbag, Purse, any kind of Paper/ Stationery/ Textual material (printed or written material), Eatables (loose or packed), Mobile Phone/ Earphone/ Microphone/ Pager, Calculator, DocuPen, Slide Rules, Log Tables, Camera, Tape Recorder, Electronic Watches with facilities of calculator, any metallic item or electronic gadgets/ devices in the Examination Hall/Room. Smoking, chewing gutka, spitting etc. in the Examination Room/Hall is strictly prohibited.
3. Possession by a candidate of any of the above-mentioned items will be treated as an act of Unfair Means and may lead to cancellation of his/her candidature in the Examination & may also involve debarring the candidate for future Examination(s) conducted by NTA.

1.1. About National Testing Agency (NTA)

The Ministry of Education (MoE), Government of India (GOI) has established the National Testing Agency (NTA) as an independent, autonomous, and self-sustained premier testing organization under the Societies Registration Act (1860) for conducting efficient, transparent and international standard tests in order to assess the competency of candidates for admissions to premier higher education institutions.

The National Testing Agency (NTA) has been entrusted by the DHR-ICMR, with the task of conducting of **Biomedical Research Eligibility Test (BRET)** which is a test to determine determining the eligibility of Indian National candidates for the award of junior research fellowship (JRF) through DHR-ICMR.

1.2. About DHR-ICMR

The Indian Council of Medical Research (ICMR), New Delhi an apex body in India for the formulation, coordination and promotion of biomedical research under Department of Health Research (DHR), Ministry of Health and Family Welfare (MoH&FW), is one of the oldest medical research organizations in the world which has completed more than 100 years of its existence. The Governing Council of the ICMR is presided over by the Hon'ble Union Minister of Health & Family Welfare.

The ICMR conducts biomedical research through its (i) 27 permanent mission-oriented institutes (Intramural Research) located in different parts of India, which address themselves to research on specific health topics like tuberculosis, leprosy, cholera, diarrhoeal diseases, viral diseases including AIDS, malaria, kala-azar, vector control, nutrition, food & drug toxicology, reproduction, immuno-haematology, oncology, medical statistics, etc. including (ii) Regional Medical Research Centres (RMRC) addressing themselves to regional health problems, as well as aim to strengthen or generate research capabilities in different geographic areas of the country.

Extramural research is promoted through grants-in-aid given as a project mode to scientists from non-ICMR institutes by (i) setting up Centres for Advanced Research in different research areas in selected departments of Medical Colleges, Universities and other non-ICMR Research Institutes; (ii) Task force projects which emphasize on a time-bound, goal-oriented approach with clearly defined targets, specific time frames, standardized and uniform protocols and often a multi-centric structure and (iii) open-ended research on the basis of applications for grants-in-aid received from scientists from non-ICMR Research Institutes located in different parts of the country.

Strengthening of research capabilities and a definite research strategy are recognized as a vital tools for successful research operations and the ICMR has strive to adopt new strategies from time to time. Human resource development in biomedical research is encouraged through various schemes such as (i) Research Fellowships (i.e. Research Junior & Senior Fellowships and Research Associateship); (ii) Short-term Visiting Fellowships which allow scientists to learn advanced research techniques from other well-established research Institutes in

India; (iii) Short Term Studentship (STS) (for undergraduate pursuing medical/dental students to encourage them to familiarize themselves with research methodologies and techniques); (iv) Financial assistance to MD/MS/DM/MCh/DNB/DrNB/MDS thesis in priority areas of Biomedical Research, (100 slots/year) Financial assistance of Rs. 50,000/- is provided to candidates who are in the 2nd year of MD/MS/DM/MCh/DNB/DrNB/MDS course; (v) MD-Ph.D. Programme 25 slots/year: To identify young medical graduates with brilliant academic records for pursuing postgraduate qualifications; (vi) Post Doctoral Fellowship (PDF) Programme (50/year): To identify and support young Ph.D. for the conduct of research using ICMR Institutes working for priority areas of Health Research and (vii) ICMR "Nurturing Clinical Scientists (NCS) Scheme has been instituted to foster high quality research opportunities for fresh MBBS/BDS candidates within two years of completing their degree who are eligible to apply (Interns/PG students are NOT eligible) in the cutting edge areas Fundamental Basic/Clinical Research in communicable and non communicable diseases, and reproductive health including nutrition etc. at MCI/DCI recognized medical colleges/ICMR network of Institutes/Centers. (viii) Various Training Programmes and Workshops conducted by various Institutes including ICMR Institutes and Headquarters.

Two broad lines of biomedical research endeavours are focused predominantly in ICMR:

- (i) Leveraging the advanced tools of modern biology and health research to unravel basic mechanisms and identify risk factors which. This research is aimed at facilitating the research in descriptive, discovery, development, and delivery of innovative diagnostic and therapeutic solutions.
- (ii) Application of available knowledge, under the prevailing inter and trans-disciplinary efforts in the field of biomedical health research, epidemiology & social and behavioural sciences, bridging socio-economic and cultural environment through comprehensive health systems research.

About Department of Health Research (DHR)

The President notified the creation of the Department of Health Research under the Ministry of Health & Family Welfare through an amendment to the Government of India (Allocation of Business) Rules, 1961 on the 17th September 2007. The Department of Health Research was formally launched on 5th October 2007 by the Minister for Science & Technology and Earth Sciences in a function presided over by the Minister for Health & Family Welfare, in the presence, inter-alia, of the Minister of State for Health & Family Welfare.

Department of Health Research (DHR) was created as a separate Department within the Ministry of Health & Family Welfare by an amendment to the Government of India (Allocation of Business) Rules, 1961 on 17th Sept, 2007. The Department became functional from November 2008 with the appointment of first Secretary of the Department. The aim of the DHR is to bring modern health technologies to the people through research and innovations related to diagnosis, treatment methods and vaccines for prevention; to translate them into products and processes and, in synergy with concerned organizations, introduce these innovations into public health system.

1.3. Overview about the Program

The Biomedical Research Eligibility Test (BRET) will be held on **31.07.2024 (Tentative Date)** for determining the eligibility of Indian National candidates for the award of junior research fellowship (JRF) through DHR-ICMR. The award of fellowship to the successfully qualified & eligible candidates will depend on their finding placement in a medical college/hospital/university/national laboratory/institution of national importance/ICMR institutes/centres as per the two categories given below:

- A. To pursue doctoral degree from UGC-recognized universities/research institutions/ institute of national importance in India.
 - B. To pursue the doctoral degree from 27 ICMR institutes/centers, where in they will be registered for Ph.D. under the newly established AcSIR-ICMR Faculty of Medical Research.
1. A total of 500 fellowships would be awarded to work in the field of biomedical sciences/health research.
 2. The merit list comprising the candidates qualifying test will be made on the basis of their performance in the test and will be declared as per the criteria given above.
 3. The candidates selected under this programme of **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** would be permitted to enrol themselves for the Ph.D. programme in subject related to biomedical/health research only.
 4. SC/ST/OBC/PwBD (Persons with Bench-mark Disabilities) and Economically Weaker Sections (EWS) applicants in General category will be given reservation as per Govt. policy guidelines.

CHAPTER – 2: ELIGIBILITY CRITERIA

2.1 Educational Qualifications

- M.Sc. or equivalent post-graduate (PG) degree (M. Tech/M. Pharma), in life sciences, zoology, botany, biomedical sciences, microbiology, biochemistry, genetics, biotechnology, biophysics, bioinformatics, forensic sciences, environmental sciences, food and nutrition, molecular biology, biological sciences, ecology, immunology, neurosciences, veterinary sciences, nursing, biostatistics, pharmacology, pharmaceutical sciences, public health, social work, with minimum 55% marks in PG test for General/EWS/OBC candidates and 50% for the SC/ST and PwBD candidates.
- A candidate who is appearing/has appeared in the final year (IV/VI Semester whichever is applicable, and final year where semester system is not there) of M.Sc. or equivalent post graduate test during the session (2023-24) can also apply for the test as RA (Result Awaited).
- **Such candidates will have to submit the attestation format (given in annexure-I duly certified by the Head of the Department/Institute over his/her signature and official seal/stamp (with address and name) where he/she is appearing in the final year PG test.**
- However, such candidates shall be admitted to the Test provisionally and shall be considered eligible for JRF only after they submit the proof of having passed the Master's Degree test with **requisite percentage**.

2.2 Age Limit

The age limit for admission to the eligibility test is **30** years as on last date of the application form i.e. 09.07.2024. (Upper age limit relaxation up to five years in case of candidates belonging to SC/ST, PwBD and female candidates, three years in the case of OBC category).

2.3 Declaration

In the event of any ineligibility being detected by DHC-ICMR / NTA at any stage, their candidature will be cancelled and they shall be liable for legal action. NTA does not verify the information provided by the candidates during online registration and hence candidature will be purely provisional subject to the fulfillment of eligibility criteria.

CHAPTER – 3: Details of Examinations

3.1 Mode of Examinations

The Examinations will be conducted in Computer Based Test (CBT) mode.

3.2 Scheme of Test

The Test will consist of three parts. All the parts will consist of objective type, multiple choice questions. There will be no break between papers. The subject-wise scheme of examination is as per details below:

- The test will consist of one paper of two hours duration.
- The question paper will be divided into **three sections A, B and C** as per the syllabus at Annexure-IX.
- All questions in each section are compulsory carrying one mark each.
- Negative marking @0.25 will be made for each of the wrong answer.
- Questions not attempted will be marked zero.

3.3 Pattern of Question Papers

Section-A (Aptitude Section) comprising of 50 questions from the following areas:

1. **Reading Comprehension:** Evaluate comprehension and interpretation skills across diverse fields.
2. **Reasoning Ability:** Assess deductive reasoning, data interpretation, verbal and non-verbal reasoning.
3. **Analytical Ability:** Analyze information systematically and logically, interpret data, and apply logical reasoning.
4. **Quantitative Ability:** Evaluate logical reasoning, numerical analysis, and graphical interpretation.
5. **Quantitative comparison:** Problem-solving through quantitative comparison and analytical reasoning

Section-B will be having 50 questions pertaining to cross-disciplinary areas and not from any specific domain but related to fundamental knowledge which is common to the topics listed below:

1. Molecular basis of changes occurring in living cells.
2. Cell structure and function including cell communication, signaling, growth, reproduction and differentiation.
3. Basic understanding of physiological processes.
4. Genetic inheritance and genomics
5. Origin of life and evolution
6. Biotechnological processes, techniques and applications
7. Biosafety
8. Bioethics
9. Natural and acquired immune responses
10. Common bacterial, viral, fungal and parasitic infections

Section-C would comprise of 50 questions relevant to applied/analytical part of the biological processes from the eleven (11) specific disciplines/subjects as listed below, candidate will have to opt for only for one subject for this section:

1. Microbiology (Bacteriology, Virology, Parasitology, Entomology, Mycology)
2. Biochemistry
3. Biostatistics
4. Veterinary Science/Medicine
5. Public Health
6. Nursing
7. Biotechnology
8. Social Behavioral Sciences (Anthropology, Sociology, Psychology)
9. Nutrition
10. Pharmacology
11. Biological Sciences (Life Sciences, Human Biology, Environmental Sciences, Zoology, Botany)

3.4 Medium of Examination

The Paper will be in English only.

3.5 Marking Scheme of Examinations

Please refer to point no. 3.2.

3.6 Subjects of the Test

The Test will be held in the subjects mentioned below:

Subject Code	Subjects of the Test
A	Microbiology
B	Biochemistry
C	Biostatistics
D	Veterinary Science/Medicine
E	Public Health
F	Nursing
G	Biotechnology
H	Social Behavioral Sciences
I	Nutrition
J	Pharmacology
K	Biological Sciences

3.7 Syllabus of the Test

Please refer to Annexure-IX

CHAPTER – 4: FACILITY FOR PWD CANDIDATES

4.1 Provisions relating to Persons with Disability (PwD):

- ❖ As per provisions (Chapter VI Clause 32) of the Rights of the Persons with Disabilities Act, 2016 Five percent of seats shall be reserved for PwBD who are Indian Nationals. The reservation will be provided on horizontal basis, as per their rank in order of merit in Entrance Test.
- ❖ CRITERIA FOR PwBD : In accordance with the provisions of the Rights of Persons with Disabilities Act, 2016, 5% seats of the sanctioned intake capacity shall be filled up by candidates with benchmark disabilities, based on the merit list of ICMR-JRF Entrance Test. For this purpose, the Specified Disability contained in the Schedule to the Rights of Persons with Disabilities Act, 2016 is annexed in ANNEXURE-V. The candidate must possess a valid certificate certifying his/her physical disability. The disability certificate should be certified by a duly constituted and authorized Medical Board of the State or Central Govt. Hospitals/Institutions.
- ❖ Degree of Benchmark Disability for Reservation and Competent Authority for Issue of Disability Certificate: Only such persons would be eligible for relaxation in conditions/ reservation in posts who suffer from not less than 40 percent of relevant benchmark disability. Those PwBD who have availed the relaxation and/or reservation have to submit Certificate of Disability issued by the Competent Authority as per the form V, VI and VII of rule 18(1) under chapter 7 of Rights of Persons with Disabilities Rules, 2017 dated 15.06.2017. Refer Annexure-VI (A), Annexure-VI (B) and Annexure- VI (C) for the revised formats.
- ❖ Assistance of Scribe: Visually Impaired (VI) candidates/candidates whose writing speed is affected by Cerebral Palsy/muscular dystrophy/candidates with Locomotor disability (one arm)/Intellectual disability (Autism, specific learning disability and mental illness) can avail the assistance of scribe for writing answers on their behalf. Engagement of scribe will be subject to the following conditions:
- ❖ Candidates may arrange own scribe.
- ❖ The qualification of the scribe should be one step below the qualification of the candidate taking entrance test.
- ❖ The scribe so arranged should not himself/herself be the candidate for the ICMR-JRF entrance test for which the candidate is appearing. Also same scribe should not be engaged for more than one candidate. The scribe and the candidate shall give a declaration to this effect. Any violation, if detected at any stage, will render both candidate and scribe disqualified.
- ❖ Candidates opting for scribe will have to provide additional details for scribes before closing date of submission of ONLINE application form as per Annexure- VII (A, B & C) so that ICMR/PGIMER can issue Call Letter for scribe and the same shall be signed by both candidate and scribe. Scribe should produce original and valid ID proof at the Test Centre and bring passport size photograph.

- ❖ Separate Call Letter will be issued to scribes accompanying the candidates.
- ❖ The candidate shall be responsible for any misconduct on the part of the scribe brought by him/her during the test.
- ❖ Candidates availing the assistance of a scribe shall be eligible for compensatory time of not less than 20 minutes for every hour of entrance test.
- ❖ **Candidates who wish to avail services of scribe but are unable to furnish the details of scribe by the stipulated time, may avail the services of scribe by filling up necessary details in Format given at Annexure-VII (A, B & C) at the Test Centre, NTA will arrange the Scribe as per the conditions/norms stipulated for scribe. The change of scribe may also be allowed in emergency duly recording reasons and filling the relevant details including pasting of photograph of the new scribe as per Annexure-VII (A, B & C).**
- ❖ All one eyed candidates and candidates whose visual degree of disability is less than 40% shall not be considered as Visually Impaired persons and the provision for engaging scribe shall not be applicable to them.

CHAPTER – 5: Registration and Application Process

5.1. Ready Reckoner:

Before beginning the process of filling the Online Application Form, read Information Brochure carefully, keep ready required documents and follow the following instructions:

- ❖ Copy of Board / University Certificate for Candidate's Name, Mother's Name, Father's Name and Date of Birth
- ❖ Type of Identification – Bank A/c passbook with photograph/ Passport Number/ Ration Card/ Aadhaar Card Number/Voter ID Card Number/ Other Govt ID
- ❖ Qualifying Degree Certificate or last semester marks sheet
- ❖ Your Mailing Address as well as Permanent Address with Pin Code
- ❖ **Four cities** for Centres of your choice
- ❖ Category Certificate, if applicable
- ❖ Result Awaited Certificate, if applicable
- ❖ Economically Weaker Section (EWS) Certificate, if applicable
- ❖ Person with Disability (PwD) Certificate, if applicable
- ❖ e-mail address and Mobile Number of candidate
- ❖ Scanned images in **PDF format only**

Candidate's Photograph	File size must be between 20 kb to 100 kb.
Candidate's Signature in running hand	File size must be between 10 kb to 50 kb.

5.2. Instructions for filling Online Application Form

- 5.2.1. Candidates must apply "Online" only for **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** by accessing the website: <https://exams.nta.ac.in/> (The Application other than online mode would not be accepted in any case).
- 5.2.2. If a candidate submits more than one Application Form for the same course, all his/her Application Forms shall summarily be rejected.
- 5.2.3. Replica of Application Form is given at **Annexure-X**.
- 5.2.4. Information Brochure and Replica of Application Form given therein may be downloaded and read carefully by the candidate to be sure about his/her eligibility and acquaint with requirements for submission of Online Application Form.
- 5.2.5. Whether they fulfil the eligibility conditions for the Exam as prescribed.
- 5.2.6. In order to avoid correction in the particulars at a later stage, the candidate should *exercise utmost caution while filling up the details in the Application Form.*

5.2.7. Following Steps may be followed to Apply Online:

Step-1: Register for Online Form submission using your own Email ID and Mobile No. and note down system generated Application Number.

Step-2: Complete the Online Application Form and note down the system generated Application Number. Upload scanned images of (i) Candidate's Photograph (in JPG file size: 20 kb - 100 kb), (ii) Candidate's Signature (in JPG file size: 40kb - 50kb), (iii) Duly verified Result Awaited Attestation Form (in PDF file size: 50kb - 500kb), (iv) Category Certificate, if applicable (SC/ ST/ OBC/ EWS etc.) (in PDF file size: 50kb - 300kb) & (v) PwD Certificate, if applicable (in PDF file size: 50kb - 300kb).

Step-3: Pay prescribed fee **through Net Banking / Debit Card / Credit Card / UPI** and keep proof of fee paid for future reference.

All the 3 Steps can be completed at one go or each step completed at a time, saved, and the next completed later.

After the submission of Online Application Form (i.e. successful completion of Step-3), Confirmation Page of the Application Form, should be downloaded and a printout of the same may be retained for future reference. The Confirmation Page of the online Application Form could be generated **only after successful payment by the Candidate.**

In case the Confirmation Page is not generated after payment of Prescribed Fee, then the candidate should approach the concerned Bank/Payment Gateway Integrator, for ensuring the successful payment.

In spite of above, if successful transaction is not reflected on the Portal, it means transaction is not complete and candidate may pay second time and ensure OK status. However, any duplicate payment received from the candidate by NTA in course of said transactions will be refunded (in the same payment mode through which the duplicate payment is received), after fee reconciliation by NTA.

However, any duplicate payment received from the candidate by NTA in course of said transactions will be refunded (in the same payment mode through which the duplicate payment is received), after fee reconciliation by NTA.

Notes:

- i. The final submission of Online Application Form will remain incomplete if Step - 2 and Step-3 are not completed, such Application Forms will stand rejected and no correspondence on this account will be entertained.
- ii. No request for refund of fee once remitted by the candidate will be entertained.
- iii. The entire application process of **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** is online, including uploading of scanned images, Payment of Fees and Printing of Confirmation page. Therefore, candidates are not required to send/submit any document(s) including Confirmation page to NTA through Post/Fax/By Hand/E-mail.
- iv. Candidates are advised to keep visiting the NTA's website regularly for latest updates and to check their e-mails.
- v. The NTA can make use of the data generated for the purpose of research and analysis.
- vi. All the candidates who have submitted the online Application and paid the Examination fee till last date will be allowed to appear in **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** and their admit cards will be uploaded on the website.
- vii. NTA verifies neither the information filled by the candidates in the Application Form nor any certificate of Category/Educational Qualification for deciding the eligibility of candidates.
- viii. The certificates of educational qualification and category (if applied under reserved category) will be verified by the concerned institution. The candidates are, therefore, advised to ensure their eligibility and the category (if applying under reserved category).
- ix. NTA will, in no way, be responsible for any wrong/incorrect information furnished by the candidate(s) in his/her Online Application Form. The letter/e-mails/WhatsApp Message/Public Grievance in this regard will not be entertained by the NTA.

5.3. Choice of Cities for Examination Centre

- 5.3.1 **It is mandatory for candidates to select four cities of their choice while filling out the Online Application Form.**
- 5.3.2 An effort will be made to allot a Centre of Examination to a candidate in a City of his/her Choice. However, due to logistic & administrative reasons, exam centre may be allotted to him/her in a different city of nearby area.
- 5.3.3 The City for Examination Centre once chosen and allotted cannot be changed (after the closing of the correction window) and any request in this regard will not be entertained.

5.4. Procedure for Filling Application Form**PART I: REGISTRATION PAGE**

Fill in the basic information and note down the system generated Application No.

- (i) Candidate's Name/ Mother's Name/ Father's Name:
Provide Candidate's Name, Mother's Name, and Father's Name as given in the Secondary School Examination or equivalent Board / University Certificate in capital letters. No prefix in the name of the candidate is allowed

- (ii) Date of Birth: dd/mm/yyyy Provide Candidate's date of birth as recorded in Secondary School Examination or equivalent Board/University Certificate.
- (iii) Mobile Number and e-mail Address:
Candidates must provide own Mobile Number and e-mail address.

Note: Only one e-mail address and one Mobile Number are valid for one application

PART III: Uploading of scanned images

- (i) **Candidate's Photograph:** to be uploaded
- Photograph should not be with cap or goggles. Photograph should cover 80% face (without mask) visible including ears against white background.
 - Spectacles are allowed if being used regularly.
 - **Polaroid and Computer generated photos are not acceptable.**
 - **Applications not complying with these instructions or with unclear photographs are liable to be rejected.**
 - **Candidates may please note that if it is found that photograph uploaded is fabricated i.e. de- shaped or seems to be hand-made or computer made, the form of the candidate will be rejected and the same would be considered as using unfair means and the candidate would be dealt with accordingly.**
 - Application without photograph shall be rejected. The photograph need not be attested. Candidates are advised to take 6 to 8 passport size colored photographs with white background.

Note: Passport size photograph is to be used for uploading on Online Application Form and also for pasting on Attendance Sheet at the Examination Centre.

- The candidate should scan his/her passport size photograph for uploading. File size must be between **20 kb to 100 kb** (in JPG Format only).
- (ii) **Candidate's Signature:** to be uploaded
- The candidates are required to upload the full signature in running hand writing in the appropriate box given in the Online Application Form. Writing full name in the Box in Capital letters would not be accepted as signature and the Application Form would be rejected. Further, unsigned Online Application Forms will also be rejected.
 - The candidate should put his full signature on white paper with Blue/Black Ink pen and scan for uploading.
 - File size must be between **10 kb to 50 kb** (in JPG Format only).
- (iii) **Result Awaited Attestation Form: to be uploaded (if applicable)**
- File size must be between **50 kb to 700 kb** (in PDF Format only).
- (iv) **Category Certificate: to be uploaded (if applicable)**
- File size must be between **50 kb to 700 kb** (in PDF Format only).
- (v) **PwD Certificate: to be uploaded (if applicable)**
- File size must be between **50 kb to 700 kb** (in PDF Format only).

Note: Candidate must ensure that the uploaded images are clear and proper.

PART IV: Payment of Examination Fee

Pay prescribed fee through **Net Banking / Debit Card / Credit Card / UPI** and keep proof of fee paid for future reference.

PART V: Check List for filling the Online Application Form

The candidates are advised to ensure the following points before submitting the Online Application Forms:

- (i) Whether they fulfill the eligibility conditions for the Test as prescribed under the heading '**Conditions of Eligibility**' and '**Age Limit**'.
- (ii) That they have selected their **category** viz General/ General-EWS/ OBC (Non-Creamy Layer)/ SC/ ST/ PwD/ Third gender and Minority option, in the relevant column correctly.
- (iii) That they have filled their **Subject and City of examination and code** in the relevant column correctly.
- (iv) That the Person with Disability (PwD) candidate has filled the relevant column in the Online Application Form. Only PwD candidates have to fill this column and the others have to leave it blank.
- (v) Whether they have kept a Printout of Application Form (Confirmation Page) for their own record.

5.5. Important Points to Note:

- 5.5.1. The Candidates should fill their complete postal address with PIN Code for further correspondence.
- 5.5.2 The Candidate must ensure that e-mail address and Mobile Number provided in the Online Application Form is his/her own (which cannot be changed later) as communication would be sent by NTA through e-mail or SMS.**
- 5.5.3 The Candidate should not give the postal address, Mobile Number or e-mail ID of Coaching Centre in the Online Application Form. In order to appear in **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)**, the candidates are required to apply 'online'. The Application Form other than online mode shall not be accepted. No change will be accepted through offline mode i.e. through fax/application including e-mail etc.
- 5.5.4 Online Application Form cannot be withdrawn once it is submitted successfully.**
- 5.5.5 Application Form of candidates who do not fulfil the eligibility criteria shall be rejected.

- 5.5.6 In case a candidate is found providing incorrect information or the identity is proved to be false at any time in the future, the candidate shall face penal action as per the law.
- 5.5.7 The Candidates are not required to send/submit the confirmation page of Online Application Form to the NTA. However, he/she is advised to retain the following documents with them as reference for future correspondence:
- ❖ **Printouts of the Confirmation Page of Online Application Form.**
 - ❖ **Proof of fee paid**
 - ❖ **Photographs (same as uploaded on the Online Application Form) – 6 to 8 passport size photographs need to be kept aside.**
- 5.5.7.1 The name on the photo identification must match with the name as shown on the Admit Card. If the name has been changed due to events such as marriage, candidate must show the relevant document at the time of exam. Marriage Certificate / Divorce / Decree / Legal Name Change Document / Gazette Notification.**
- 5.5.8 Provision of Reservation for candidates belonging to EWS/ OBC/ SC/ ST/ PwD will be as per Gol instructions issued from time to time.
- 5.5.9 The Aadhaar number is only one of the types of identification and is not mandatory. Candidates may also enter Passport number, Ration Card number, Bank Account number or any other valid Government identity number.**
- 5.5.10 A candidate can filling only one application. Multiple application by the same candidate are liable to be rejected.**

CHAPTER – 6: Admit Card, Instructions and Prohibited Materials

6.1. Admit Card for the Examinations

- 6.1.1. The Admit Card will be issued provisionally to the candidates, subject to their satisfying the eligibility conditions.
- 6.1.2. The candidate has to download the Admit Card from the NTA website and appear for the Examination at the given Centre on Date, timing and Examination as indicated in their Admit Card.
- 6.1.3. **No candidate will be allowed to appear at the Examination Centre, on Date and timing other than that allotted to them in their Admit Card.**
- 6.1.4. In case candidates are unable to download Admit Cards from the website, they may approach the Help Line 011-40759000 / 011-69227700 between 09:30 am and 5:30 pm or write to NTA at bret@nta.ac.in.
- 6.1.5. **The candidates are advised to read the instructions on the Admit Card carefully and follow them during the conduct of the Examination.**
- 6.1.6. **In case of any discrepancy in the particulars of the candidate or his/her photograph and signatures shown in the Admit Card and Confirmation Page, the candidate may immediately approach the Helpline between 09:30 am and 5:30 pm. In such cases, candidates would appear in the Examination with the already downloaded Admit Card. However, NTA will take necessary action to make correction in the record later.**

Notes:

- a. Candidate may please note that Admit Cards will not be sent by post.
- b. Under no circumstance, a duplicate Admit Card will be issued at the Exam centre.
- c. Candidate must not mutilate the Admit Card or change any entry made therein.
- d. Candidates are advised to preserve their Admit Cards in good condition for future reference.
- e. No Admit Card shall be issued to the candidates whose Applications are found to be incomplete for any reasons (including indistinct/ doubtful photographs/unsigned Applications) or who do not fulfill the eligibility criteria for the examination.
- f. Issue of Admit Cards, however, shall not necessarily mean acceptance of eligibility which shall be further scrutinized at subsequent stages of admission process.

6.2. Important Instructions for Candidates

Candidates are advised to go through instruction printed on Admit Card carefully before going for the Examination and follow them strictly

- 6.2.1. The candidates are advised to read the instructions on the Admit Card carefully and follow them strictly.
- 6.2.2. Candidates MUST bring the following documents on the day of Examination at the test centre. Candidates who do not bring these will not be allowed to appear in the Examination.
 - i. Print copy of Admit Card downloaded from NTA website.
 - ii. One passport size photograph (same as uploaded on the Online Application Form) for pasting on the specific space in the attendance sheet at the Centre during the Examination.
 - iii. Any one of the authorized Govt. photo IDs (must be original, valid and non-expired), viz. School Identity Card/ PAN card/ Driving Licence/ Voter ID/ Passport/ Aadhar Card (With photograph)/ Aadhar Enrolment No/ Ration Card
 - iv. PwD certificate issued by the Competent Authority, if claiming the relaxation under PwD category.

If the name has been changed due to events such as marriage, candidate must show the relevant document at the time of exam. Marriage Certificate/ Divorce/ Decree / Legal Name Change Document.

- 6.2.3 Candidates should not be in possession of any material listed in the list of prohibited material.
- 6.2.4 Candidates are not allowed to carry any baggage inside the Examination Centre. NTA will not be responsible for any belongings stolen or lost at the premises.
- 6.2.5 The candidates shall report at the Examination Centre at the time mentioned on the Admit Card so as to avoid crowding at the Examination Centre.
- 6.2.6 Candidates must reach the test centres on or before the reporting time. Entry of the candidates into centre shall be stopped 30 mins before the start of the Examination.
- 6.2.7 Candidates may note that late entry to the Examination premises is not permitted under any circumstances. NTA shall not be responsible for any delayed arrival of the candidate in reaching the centre due to any reason. Candidates are advised to familiarize themselves with the location of test centre and plan travel time accordingly.
- 6.2.8 Biometric information of all the candidates shall be captured. Identity checks will be made upon arrival at the test centre to ensure that there are no unauthorized candidates appearing for the test. Candidates are required to cooperate with the security personnel for security checks.

- 6.2.9 The candidate must show, on demand, the Admit Card for entry in the Examination room/hall. A candidate who does not possess the valid Admit Card shall not be allowed to enter the Examination Centre.
- 6.2.10 Candidates should take their seat immediately after opening of the Examination hall on their allotted seat. If not they are likely to miss some of the general instructions to be announced in the Examination Rooms / Halls. NTA shall not be responsible for any delay.
- 6.2.11 Any candidate found to have changed room / hall or the seat on his/her own other than allotted would be considered as a case of unfair means and the candidature shall be cancelled and no plea would be accepted.
- 6.2.12 The candidate must sign and paste the photograph on the Attendance Sheet at the appropriate place.
- 6.2.13 The candidate should ensure that the question paper available on the computer is as per the opted Examination indicated in the Admit Card. In case, the subject of question paper is other than the opted Examination, the same may be brought to the notice of the Invigilator concerned.
- 6.2.14 All calculations/writing work are to be done only in the rough sheet provided at the centre in the Examination Room/ Hall and on completion of the test candidates must hand over the rough sheets to the invigilator on duty in the Room/ Hall.
- 6.2.15 No candidate, without the special permission of the Centre Superintendent or the Invigilator concerned, will leave his/ her seat or Examination Room/ Hall until the full duration of the paper is over. Candidates must follow the instructions strictly as instructed by the Centre Superintendent/Invigilators.
- 6.2.16 Please note that only registered candidates will be allowed at the Examination Centre. Friends or relatives accompanying the candidates shall not be allowed entry in the test centre under any circumstances and will not be allowed to contact the candidate while the Examination process is going on.
- 6.2.17 Candidate shall appear at their own cost at the Centre on Date and time as indicated on their Admit Card issued by the NTA. No TA, DA or any accommodation facility will be admissible for appearing the examination.
- 6.2.18 The candidates are to be governed by the Rules and Regulations/Instruction of the NTA with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per rules.
- 6.2.19 Applications of candidates submitting false and fabricated information will be rejected and such candidates will be further debarred from appearing in Examinations conducted by NTA.

6.2.20 NTA reserves the right to withdraw permission, granted inadvertently if any, to any candidate who is not eligible to appear in the **DHR-ICMR 2024 - Biomedical Research Eligibility Test (BRET)** even though the Admit Card had been issued by the NTA.

6.2.21 In case of any ambiguity in interpretation of any of the instructions / terms / rules / criteria regarding determination of Eligibility / Conduct of Examination / Registration of Candidates / Information contained therein, the interpretation of the DHR-ICMR/ NTA shall be final and binding.

6.3. Prohibited Materials

Candidates are not allowed to carry any textual material, Calculators, DocuPen, Slide Rules, Log Tables and Electronic Watches with facilities of calculator, printed or written material, bits of papers, mobile phone, Blue-tooth devices, pager or any other electronic gadget/ device etc.

- The candidates are prohibited to bring any kind of electronic gadgets/device in the Examination room/hall.
- If any candidate is in possession of any of the above item, his/ her candidature will be treated as unfair means and lead to cancellation of the current Examination and also debar the candidate for future Examination(s) & the material will be seized.
- Smoking, chewing gutka, spitting etc. in the Examination Room/Hall is strictly prohibited.
- Instrument / Geometry / Pencil box, Handbag, Purse or Any kind of Paper/ Stationery, Eatables / Snacks and Tea / Coffee / Cold drinks / Water (loose or packed), Mobile Phone / Ear Phone / Microphone / Pager / Calculator/ Camera / Tape Recorder, any metallic item or electronic gadgets etc. are NOT allowed in the Examination Room / Hall.

Note: Diabetic students will be allowed to carry eatables like sugar tablets / fruits (like banana / apple / orange) and transparent water bottle to the Examination hall. However, they will not be allowed to carry packed foods like chocolate / candy / sandwich etc.

CHAPTER – 7: Unfair Means Practices

7.1. Unfair Means Practices and Breach of Examination Rules

7.1.1. Definition: Unfair Means practice is an activity that allows a candidate to gain an unfair advantage over other candidates. It includes, but is not limited to:

- a. Being in possession of any item or article which has been prohibited or can be used for unfair practices including any stationery item, communication device, accessories, eatable items, ornaments or any other material or information relevant or not relevant to the Examination in the paper concerned;
- b. Using someone to write Examination on his / her behalf (physical or virtual impersonation) or preparing material for copying;
- c. Writing the Exam at an Exam Centre other than the one allotted to him / her;
- d. Violating Examination rules or any direction issued by NTA in connection with DHR-ICMR Fellowship Examination.
- e. Assisting other candidate to engage in malpractices, giving or receiving assistance directly or indirectly of any kind or attempting to do so;
- f. Contacting or communicating or trying to do so with any person, other than the Examination Staff, during the Examination time in the Examination Centre;
- g. Threatening any of the officials connected with the conduct of the Examination or threatening any of the candidates;
- h. Using or attempting to use any other undesirable method or means in connection with the Examination;
- i. Manipulation and fabrication of online documents viz. Admit Card, Rank Letter, Self-Declaration, etc.;
- j. Forceful entry in/exit from Examination Centre/Hall;
- k. Use or attempted use of any electronic device after entering the Examination Centre;
- l. Affixing/ uploading of wrong/ morphed photographs/signatures on the Application Form/ Admit Card/ Proforma;
- m. Creating obstacles in smooth and fair conduct of Examination;
- n. Availing of the service of a scribe and/ or compensatory time without processing the extent of disability that warrants the use of service and/ or grant of compensatory time;
- o. Any other malpractices declared as Unfair Means by the NTA;

Disclaimer- The decision of NTA shall be final and binding for declaration of any person / candidate guilty of foregoing or such offence as shall be classified as Unfair Means Case (UMC).

7.1.2. Punishment for using Unfair means practices

During the course of or before or after the Examination, if a candidate is found indulging in any of the practices as defined above, he/she shall be deemed to have used Unfair means practice(s) and booked under UNFAIRMEANS (U.F.M.) Case. The candidate could be debarred for 3 years in future and shall also be liable for criminal action and /or any other action as deemed fit.

CHAPTER – 8: Procedure of Finalize the Answer Key

8.1. Display of Recorded Responses

The NTA will display the Recorded Responses and Question Paper attempted by the candidates on the NTA website prior to declaration of result. The recorded responses are likely to be displayed for two to three days.

A Public Notice in this regard informing the date/s when the window will open will be hosted on the NTA website.

8.2. Display of Provisional Answer Key for Challenges

The NTA will display Provisional Answer Key of the questions on the NTA website <https://exams.nta.ac.in/> to provide an opportunity to the candidates to challenge the Provisional Answer Key. The Answer Keys are likely to be displayed for two to three days.

The Candidates will be given an opportunity to make a challenge online against the Provisional Answer Key, on payment of Rs. 200/- per challenged question, as a non- refundable processing fee.

The NTA decision on the challenges shall be final and the result will be declared on the basis of final answer keys.

9.1. Procedure for appearing in Computer Based Test (CBT)

Please read the detailed procedures for Computer Based Test (CBT)

9.2. Caution Notice and Non-Disclosure Agreement






9.2.1. Caution Notice



- a. Candidates are advised to refer to **DHR-ICMR, 2024 Biomedical Research Eligibility Test (BRET)** website <https://exams.nta.ac.in/> for authentic information and periodic updates about **DHR-ICMR, 2024 Biomedical Research Eligibility Test (BRET) Examination**.
- b. Candidates are advised not to be allured by various claims of any party or person or institute for qualifying **DHR-ICMR, 2024 Biomedical Research Eligibility Test (BRET)** securing seat.
- c. Candidates are advised to bring any such information to the notice to NTA by e-mail on bret@nta.ac.in.

Please read the instructions carefully

General Instructions:

1. Total duration of examination is 120 minutes.
2. The clock will be set at the server. The countdown timer in the top right corner of screen will display the remaining time available for you to complete the examination. When the timer reaches zero, the examination will end by itself. You will not be required to end or submit your examination.
3. The Questions Palette displayed on the right side of screen will show the status of each question using one of the following symbols:

	You have not visited the question yet.
	You have not answered the question.
	You have answered the question.
	You have NOT answered the question but have marked the question for review.
	The question(s) "Answered and Marked for Review" will be considered for evaluation.
4. You can click on the ">" arrow which appears to the left of question palette to collapse the question palette thereby maximizing the question window. To view the question palette again, you can click on "<" which appears on the right side of question window.
5. You can click on your "Profile" image on top right corner of your screen to change the language during the exam for entire question paper. On clicking of Profile image you will get a drop-down to change the question content to the desired language.

6. You can click on  to navigate to the bottom and  to navigate to top of the question are, without scrolling.

Navigating to a Question:

7. To answer a question, do the following:
- Click on the question number in the Question Palette at the right of your screen to go to that numbered question directly. Note that using this option does NOT save your answer to the current question.
 - Click on **Save & Next** to save your answer for the current question and then go to the next question.
 - Click on **Mark for Review & Next** to save your answer for the current question, mark it for Review, and then go to the next question.

Answering a Question:

8. Procedure for answering a Multiple-Choice type question:
- To select you answer, click on the button of one of the options.
 - To deselect your chosen answer, click on the button of the chosen option again or click on the Clear Response button
 - To change your chosen answer, click on the button of another option
 - To save your answer, you MUST click on the Save & Next button.
 - To mark the question for review, click on the Mark for Review & Next button.
9. To change your answer to a question that has already been answered, first select that question foranswering and then follow the procedure for answering that type of question.

Navigating through sections:

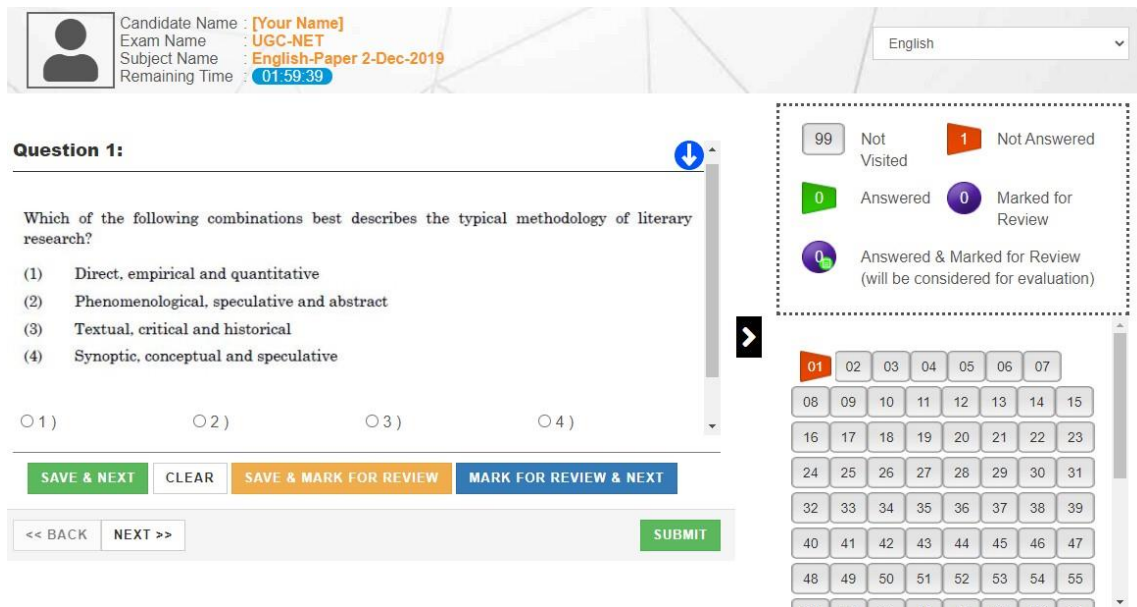
10. Sections in this question paper are displayed on the top bar of the screen. Questions in a Section can be viewed by click on the section name. The Section you are currently viewing is highlighted.
11. After click the **Save & Next** button on the last question for a section, you will automatically be taken to the first question of the next section.
12. You can shuffle between sections and questions anything during the examination as per your convenience only during the time stipulated.
13. Candidate can view the corresponding section summery as part of the legend that appears in every section above the question palette.

The keyboard attached to the computer, if any, will be disabled during the entire duration of the examination. Depending on the type of question, the answers to questions can either be entered by clicking on the virtual on-screen keyboard (numeric or otherwise) using the computer mouse or by

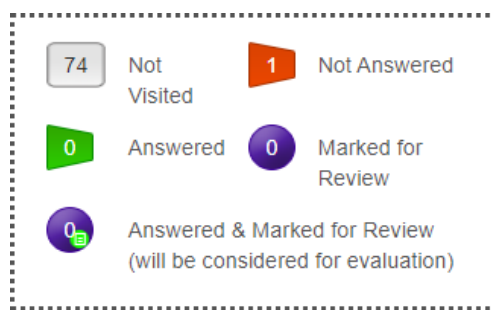
clicking the chosen option(s) using the computer mouse. Candidates will have the option to change/modify answers already entered anytime during the entire duration of the examination.

In case the computer/mouse allotted to any candidate malfunctions anytime during the test, he/she will be immediately allotted another computer system and the time lost due to this will be adjusted in the server so as to give the candidate the full allotted time.

The on-screen computer clock counter of every candidate will be set at the server. The countdown timer in the top right side of computer screen will display the time remaining (in minutes) available for the candidate to complete the examination. When the timer reaches zero, the examination will end by itself. Candidate will not be required to end or submit the examination.



- (a) The Question Palette displayed on the screen will show the status of each question using one of the following symbols:



The question(s) “Answered and Marked for Review” status for a question indicates that candidate would like to have a relook at that question again. A candidate has the option of answering a question and simultaneously “Marked for Review”, these answers will be considered for evaluation. However, if a candidate has simply put “Marked for Review” for a question without answering it, the corresponding question marked for review without an answer will not be considered for evaluation. It may be noted that a candidate can return to any “Marked for Review”

question any time during the examination by clicking on the corresponding question number icon displayed on the Question Palette of the corresponding section.

- (b) Candidate can click on the “>” arrow which appears to the left of question palette to collapse the question palette thereby maximizing the question viewing window. To view the question palette again, candidate can click on “<” which appears on the right side of question window.
- (c) Candidate can click on to navigate to the bottom and to navigate to the top of the question area, without scrolling. Using the computer mouse the candidate can scroll up and down the question viewing area for viewing the entire question.
- (d) The full paper can be viewed by clicking the “Question Paper” icon on the top right corner of the screen.
- (e) Blank Sheets for doing rough Work/calculations shall be provided to the candidates. The Blanks Sheets would have a Header page for the candidates to write down his/her Name and Roll Number. All calculations/writing work are to be done only in the Blank Sheets provided at the centre in the examination Room/Hall and on completion of the test candidates must hand over the rough sheets to the invigilator on duty in the Room/Hall.
- (f) Navigating to a Question to navigate between questions within a Paper, candidate needs to do the following:**
 - (a) Click on the question number in the Question Palette at the right of the screen to go to that numbered question directly. Note that using this option does NOT save the answer to the currently displayed question.
 - (b) Click on “Save & Next” to save the answer of any question. Clicking on “Save & Next” will save the answer for the current question and the next question will be displayed on the candidate’s computer screen.
 - (c) Click on “Mark for Review & Next” to mark a question for review (without answering it) and proceed to the next question.



(g) Answering a Question

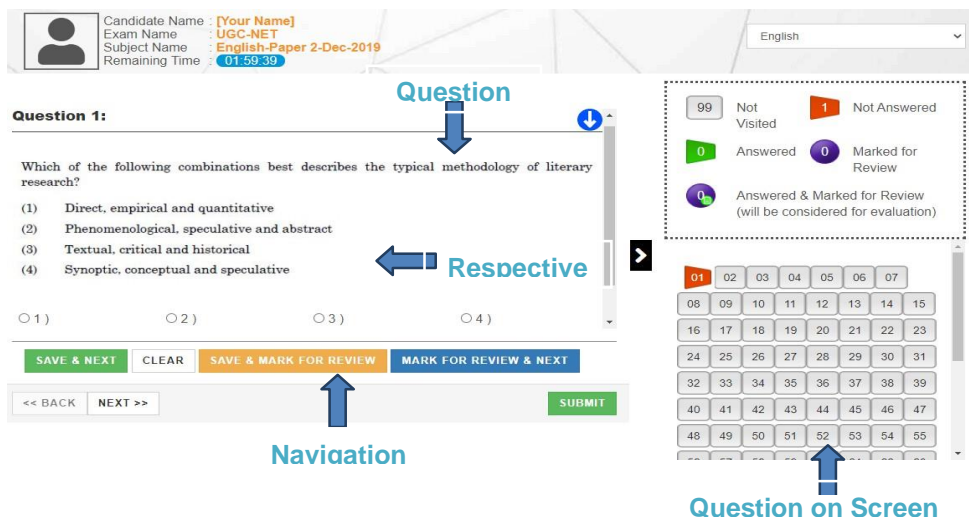
To navigate between questions within a Paper, candidate needs to do the following: Procedure for answering a Multiple-Choice type question:

- (a) To select the option(s), click on the corresponding button(s) of the option(s).
- (b) To deselect the chosen answer, click on the button of the chosen option again or click on the “Clear Response” button.

- (c) To save the answer, the candidate MUST click on the “Save & Next” button.
- (d) To mark the question for review (without answering it), click on the “Mark for Review & Next” button.

(h) Navigating through sections:

- (i) Sections in the question paper are displayed on the top bar of the screen. Questions in a section can be viewed by clicking on the section name. The section in which candidate is currently viewing will be highlighted.
- (ii) After clicking the “Save & Next” button on the last question for a section, candidate will automatically be taken to the first question of the next section.
- (iii) Candidate can shuffle between sections and questions within sections anytime during the examination as per the convenience only during the time stipulated.
- (iv) Candidate can view the corresponding section summary as part of the legend that appears in every section above the question palette.



(i) Procedure for answering questions that require inputs from virtual key board (numeric or otherwise):

- (a) Candidates will have to use the on-screen virtual keyboard (that would be displayed just below the question statement of these types of questions) and the attached computer mouse to enter his/her answer in the space provided for answer.



On Screen Virtual Keyboard



- (b) The answer can be changed, if required, anytime during the test. To save the answer, the candidate MUST click on the “Save & Next” button.
- (c) To mark the question for review (without answering it), click on the “Mark for Review & Next” button.

Candidate will have the option to change previously saved answer of any question, anytime during the entire duration of the test. To change the answer to a question that has already been answered, first select the corresponding question from the Question Palette, then click on “Clear Response” to clear the previously entered answer and subsequently follow the procedure for answering that type of question.


(j) ROUGH WORK:

All calculations/writing work are to be done only in the rough sheet provided at the Centre in the examination Room/Hall and on completion of the test candidates must hand over the rough sheets to the invigilator on duty in the Room/Hall


LIST OF EXAM CITIES FOR DHR-ICMR 2024 - BIOMEDICAL RESEARCH ELIGIBILITY TEST

SL. NO.	CITY (STATE) NAME
1.	AMBALA (HARYANA)
2.	BENGALURU (KARNATAKA)
3.	BHOPAL (MADHYA PRADESH)
4.	BHUBANESWAR (ODISHA)
5.	BILASPUR (CHHATTISGARH)
6.	CHANDIGARH
7.	CHENNAI (TAMIL NADU)
8.	COIMBATORE (TAMIL NADU)
9.	DARJEELING (WEST BENGAL)
10.	DELHI
11.	DEHRADUN (UTTARAKHAND)
12.	GUWAHATI (ASSAM)
13.	HYDERABAD (TELANGANA)
14.	JABALPUR (MADHYA PRADESH)
15.	JAMMU (JAMMU AND KASHMIR)
16.	JODHPUR (RAJASTHAN)
17.	KOLKATA (WEST BENGAL)
18.	KOCHI (KERALA)
19.	KURNOOL (ANDHRA PRADESH)
20.	LUCKNOW (UTTAR PRADESH)


Replica of the Application Form



Department of Health Research
Ministry of Health and Family Welfare
Government of India



icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH



राष्ट्रीय परीक्षा एजेंसी
National Testing Agency
Excellence in Assessment

Home

Contact Us

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

Important Dates

- ▼ **June 19, 2024, Wednesday**
Commencement of on-line submission of application form
- ▼ **July 09, 2024, Tuesday**
Closure of Registration of Application
- ▼ **July 09, 2024, Tuesday**
Last Date of Online Fee Payment
- ▼ **July 10, 2024, Wednesday - July 11, 2024 Thursday**
Correction Period
- ▼ **To be announced later**
Hall Ticket / Admit Card can be downloaded
- ▼ **July 31, 2024, Wednesday (Tentative Date)**
Date of Computer Based Test

Registration of New User
for DHR-ICMR

New User

Candidate login
of DHR-ICMR for Registered Candidate

Existing User Login

Information & Instructions

[Public Notice](#)

[Online Application Instructions](#)

[Annexure - I \(Proforma for appearing/ result awaited candidates\)](#)

[Annexure - II \(Proforma Prescribed for SC/ST Certificate\)](#)

[Annexure - III \(Proforma Prescribed for OBC\)](#)

[Annexure - IV \(Declaration to be signed by OBC Candidates only\)](#)

[Annexure - V \(Selection Criteria for person with Benchmark Disabilities\)](#)

[Annexure - VI \(A\) \(Form-V of Certificate of Disability\)](#)

[Annexure - VI \(B\) \(Form-VI of Certificate of Disability\)](#)

[Annexure - VI \(C\) \(Form-VII of Certificate of Disability\)](#)

[Annexure - VII \(A\) \(Letter of Undertaking for Using Scribe\)](#)

[Annexure - VII \(B\) \(Certificate regarding physical limitation in an Testinee to write.\)](#)

[Annexure - VII \(C\) \(Letter of Undertaking for using own Scribe\)](#)

[Annexure - VIII Format for Income and Assets Certificate to be produced by Economically Weaker Section \(General Category\)](#)

Assistance

Contact Us

Help Desk E-Mail ID - bret@nta.ac.in

Help Desk Number - 011-40759000/011-6922770

Timing - 09:00 AM To 06:00 PM (Monday to Saturday except on Public Holidays)

© Copyright DHR-ICMR 2024
Site best viewed in Chrome 100+, Edge 100+, Firefox 100+, Safari 14+ at 1024 x 768 pixels resolution and JavaScript should be enabled.

IMPORTANT INSTRUCTIONS

Please read the instructions and proceed carefully before you start filling the Online Application Form.

SCHEDULE	
Activity	Date
Commencement of Online Registration of Application	19.06.2024
Closure of Registration of Application	09.07.2024
Last Date Of Online Fee Payment	09.07.2024
Correction Period	10.07.2024 to 11.07.2024
Hall Ticket/ Admit Card can be downloaded	To be announced later
Date of Computer Based Test	31.07.2024 (Tentative Date)
* Any change will be updated on the website.	

Eligibility:

Please refer to the detailed [notification](#) for eligibility criteria and ensure you meet all requirements before applying for the DHR-ICMR NON MEDICAL FELLOWSHIP FOR PhD 2024 (Biomedical Research Eligibility Test). Make sure to follow all the specified procedures and guidelines for this test.

HOW TO APPLY FOR THE BRET

1. Procedure for Online Application:

1. Prerequisites:

Before proceeding for filling the registration form keep the following information ready:

- Mobile Number (to be verified through OTP)
- Email ID (to be verified through OTP)

***Note: For all applicants fee will be applicable as per Category/Gender selected by the candidate.**

3. Closing Date for Registration of Application:

The registration of online application will close on at 23:59 hrs.

4. Correction Period Guidelines:

- Candidates who have submitted the application form and paid the required fees on or before last date registration / payment, will get an opportunity to make correction if any in their respective application form during the correction.
- Email and Mobile Number fields will not be allowed to be changed; hence ensure accuracy during the initial submission.
- If category is changed from GEN/EWS to SC/ST/OBC-NC or PH status is changed from No to Yes then no refund will be given for the access fees paid during main registration / payment window.
- If category is changed to SC/ST/OBC-NC to GEN/EWS is changed or if PH Status is changed from Yes to No then candidate needs to pay additional fees for their candidature to be considered, if not paid then candidate's application will not to be considered as submitted.
- Modification will be allowed only once during correction period, once modified and submitted then candidate won't be allowed modify again.
- Complete all modifications within the specified correction period; after submission, no further modifications are permitted; review details carefully.
- Contact support for assistance and adhere to guidelines to avoid application rejection.

5. Disclaimer:

DHR - ICMR does not make any phone calls/SMS to the Applicants for depositing any money. List of Selected Applicant will be displayed on website only. The correspondence, if any, is made with Applicants through respective Admission authority only. Applicants are advised not to disclose their Reference number and mobile numbers and be guarded against any unscrupulous phone calls.

For any queries related to online application process, payment gateway and Exam Process, kindly contact on below given Technical Helpdesk Number for eligibility related queries please contact Eligibility Helpdesk.

Help Desk Number – 011-40759000 / 011-40759000

Helpdesk Email – bret@nta.ac.in

Timing – 09:00 AM to 06:00 PM (Monday to Saturday except on Public Holidays)

DECLARATION :

I have read and understood and agree to abide by the above Instructions.

Continue

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

Sign Up Form

Exam Applying for *
DHR-ICMR NON MEDICAL FELLOWSHIP FOR PhD 2024 (Biomedical Research Eligibility Test)

Elective subject for Examination (Part C) * Subject Code *
Select Elective subject for Examination (Part C) []

Note - Part A and Part B of Examination will be common for all the candidates, Part C will have question set according to the subject selected

Applicant's Name * Gender * Nationality *
[] Select Gender Indian

Mobile Number *
+91 [] Send OTP

(10 digits only, without leading 0)
Email ID * Send OTP

Email should be in standard format
Set Password * Confirm Password *

57390 Please enter text shown in image *

Submit Cancel

Do not change E-Mail ID and Mobile number provided in this application until the full process is completed, if Institute is unable to communicate to the candidate on given e-mail id and mobile number then

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

- 1 Personal Details
- 2 Educational Qualification
- 3 Upload Photo
- 4 Upload Signature
- 5 Upload Document
- 6 Preview

Personal Details Reference Number - DHRICMR00196

Note: Fields marked with * are compulsory

Personal Details

Examination applying for: Elective subject for examination:

Subject Code: Applicant's Name: Gender:

Nationality: Mobile Number: Email ID:

Section I

Social Category *

Section II

Are you a person with benchmark disability of 40% and above? *

Section III

Candidate Father's Name *
 Candidate Mother's Name *

Candidate's Date of Birth *
 Years Months Days

Candidate Marital Status *

Candidate Permanent Address (Home)

Permanent Address - Line 1 * Permanent Address - Line 2 Permanent Address - State / Union Territory *

Permanent Address - District * Permanent Address - City / Village / Town * Permanent Address - Pincode *

Candidate Correspondence Address Same as Permanent Address

Correspondence Address - Line 1 * Correspondence Address - Line 2 Correspondence Address - State / Union Territory *

Section II

Are you a person with benchmark disability of 40% and above? *

Section III

Candidate Father's Name *
 Candidate Mother's Name *

Candidate's Date of Birth *
 Years Months Days

Candidate Marital Status *

Candidate Permanent Address (Home)

Permanent Address - Line 1 * Permanent Address - Line 2 Permanent Address - State / Union Territory *

Permanent Address - District * Permanent Address - City / Village / Town * Permanent Address - Pincode *

Candidate Correspondence Address Same as Permanent Address

Correspondence Address - Line 1 * Correspondence Address - Line 2 Correspondence Address - State / Union Territory *

Permanent Address - District * Permanent Address - City / Village / Town * Permanent Address - Pincode *

Candidate Correspondence Address Same as Permanent Address

Correspondence Address - Line 1 * Correspondence Address - Line 2 Correspondence Address - State / Union Territory *

Correspondence Address - District * Correspondence Address - City / Village / Town * Correspondence Address - Pincode *

Test Centre Location Preference Selection

Test Centre Location Preference 1 * Test Centre Location Preference 2 * Test Centre Location Preference 3 *

Test Centre Location Preference 4 *

Note: Final location that will be allotted to candidate will be on sole discretion of from DHR-ICMR. The Institute reserves the right to add any additional location or withdraw any of the existing locations depending on the number of candidates or for any other reason.

Save & Continue

Academic Details

Reference Number - DHRICMR00108

Note : Fields marked with * are compulsory.

Graduation

UG Degree Name *	UG Subject Name *	UG University / College / Institute Name *
Select UG Degree Name		
UG Year of Passing *	Percentage / CGPA *	
	Select Percentage / CGPA	
<input type="button" value="Clear"/>		

Post-Graduation

PG Degree Name *	PG Subject Name *	PG University / College / Institute Name *
Select PG Degree Name	Select Subject Name	
PG Status *		
Select PG Status		
<input type="button" value="Clear"/>		



ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

- Personal Details
- Educational Qualification
- 3 Upload Photo**
- 4 Upload Signature
- 5 Upload Document
- 6 Preview

Upload Photo

Reference Number - DHRICMR00108

Candidate Details

Reference Number
DHRICMR00108

Applicant Full Name
SAURABH

Candidate Photo

Gender
MALE

Date of Birth
01-JUL-2000

Choose File No file chosen

Upload

Click on Choose file and select photo file to be uploaded from your machine. After selecting your photo, please click on Upload button.

Note: The minimum file size is 20 KB, Maximum file size is 100 KB and jpg file images are accepted.

Please upload recent photograph, not older than six months.

Kindly Upload clear photo image, if photo image upload is not clear then your application is liable to rejection by DHR-ICMR.

Save & Continue



ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

- ✔ Personal Details ✔ Educational Qualification ✔ Upload Photo 4 Upload Signature 5 Upload Document 6 Preview

Upload Signature

Reference Number - DHRICMR00108

Candidate Details

Reference Number
DHRICMR00108

Applicant Full Name
SAURABH

Candidate Signature

Gender
MALE

Date of Birth
01-JUL-2000

Choose File No file chosen

Upload

Click on Choose file and select sign image file to be uploaded from your machine. After selecting your Signature, please click on Upload button.

Note: The Minimum File Size is 10 KB, Maximum File Size is 50 KB and .jpg file images are accepted.

Kindly Upload clear signature image, if signature image upload is not clear then your application is liable to rejection by DHR-ICMR.

Kindly upload your full signature (not initials).

Save & Continue

This is Demo/Test Instance



Department of Health Research
Ministry of Health and Family Welfare
Government of India



icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH

Home Dashboard **Application**

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

✔ Personal Details ✔ Educational Qualification ✔ Upload Photo ✔ Upload Signature 5 Upload Document 6 Preview

Upload Document

Reference Number - DHRICMR00108

Kindly check and verify the document before uploading.
Click on Choose file and select document file to be uploaded from your machine. After selecting your file, please click on Upload button
Kindly upload the documents which does not have any of the mentioned special characters in its file name %#&*\$+=@|\\/'<>.,?
The uploaded Document should be of size 50KB to 700KB and only jpg/jpeg/pdf Format File are allowed to upload.
Kindly Upload clear document, if document uploaded is not clear then your application is liable to rejection by DHR-ICMR.

10th/SSC Passing Certificate/Marksheet *

Upload

Graduation Degree Completed Certificate *

Upload

Post Graduation Completed Certificate *

Upload

Save & Continue

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

Personal Details Educational Qualification Upload Photo Upload Signature Upload Document Preview

Preview Reference Number : DHRICMR00108

Note Candidates are advised to verify details on this page before submitting the form, candidates can use edit link against each section to edit details of the respective section before submitting the form. For verification to next step from you can also take the print of the Preview page by using browser print option (Ctrl+P). The Preview page printed will not be considered as submitted application form, after verifications check the declaration and submit your form and make payment. After application fees payment, you can download your submitted application form from Candidate Dashboard.

Personal Details

Examination Applying for
DHR-ICMR NON MEDICAL FELLOWSHIP FOR PhD 2024 (BIOMEDICAL RESEARCH ELIGIBILITY TEST)

Elective subject for examination
BIOCHEMISTRY

Subject Code
B

Applicant's Name
SAURABH

Gender
MALE

Nationality
INDIAN

Mobile Number
9876543215

Email ID
D.JURIAJ@GMAIL.COM

Edit Applicant Photo
Edit Photo

Section I

Social Category
GENERAL

Section I

Social Category
GENERAL

Section II

Are you a person with benchmark disability of 40% and above?
NO

Section III

Candidate Father's Name
WGWYGYDGV

Candidate Mother's Name
WDWUDUH

Candidate's Date of Birth
01-07-2000

Age as on 07-07-2024
24 YEARS 0 MONTHS 6 DAYS

Candidate Marital Status
SINGLE

Candidate Permanent Address (Home)

Permanent Address - Line 1 WGWYGY	Permanent Address - Line 2 UWUJUDI	Permanent Address - State / Union Territory MAHARASHTRA
Permanent Address - District MUMBAI SUBURBAN	Permanent Address - City / Village / Town WUJUDUH	Permanent Address - Pincode 400000

Candidate Correspondence Address

Candidate Correspondence Address

Correspondence Address - Line 1 WGWYGY	Correspondence Address - Line 2 UWUJUDI	Correspondence Address - State / Union Territory MAHARASHTRA
Correspondence Address - District MUMBAI SUBURBAN	Correspondence Address - City / Village / Town WUJUDUH	Correspondence Address - Pincode 400000

Test Centre Location Preference

Test Centre Location Preference 1 DELHI	Test Centre Location Preference 2 JODHPUR	Test Centre Location Preference 3 DEHRADUN
Test Centre Location Preference 4 KOLKATA		

Educational Qualification

Graduation

UG Degree Name BTECH	UG Subject Name DHUSHRU	UG University / College / Institute Name UWUUDUH
UG Month & Year of Passing JUNE 2019	Percentage / CGPA PERCENTAGE	Percentage Obtained 99

Post-Graduation

PG Degree Name MASTER OF TECHNOLOGY	PG Subject Name MOLECULAR BIOLOGY	PG University / College / Institute Name FHUWUJUD
PG Status PASSED	Month & Year of Passing JUNE 2022	Percentage / CGPA PERCENTAGE
Percentage Obtained 99		

Uploaded Documents

10th/SSC Passing Certificate/Marksheet	Preview.pdf	VERIFY DOCUMENT
Graduation Degree Completed Certificate	Preview.pdf	VERIFY DOCUMENT
Post Graduation Completed Certificate	Preview.pdf	VERIFY DOCUMENT

Applicable Fees (INR) : 10

Declaration

I hereby declare that all the statements made in this application are True, Complete and Correct to the best of my knowledge and belief. I understand that in the event of any information being found untrue or incorrect at any stage or I am not satisfying any of the eligibility criteria stipulated, and also in case of creating influence/undue pressure regarding recruitment shall amount to cancellation of my candidature.

Application submitted through On-Line form does not imply that candidate has fulfilled all the criteria given in the advertisement. Application is subject to subsequent scrutiny and can be rejected if found to be ineligible at any point of time.

I accept all the above declarations.

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

Candidate Status
APPLICATION FORM SUBMITTED

Candidate Basic Details

Candidate Name (Full Name) SAURABH	Reference Number DHRICMR00108	Date of Birth 01-07-2000
Gender MALE	Email ID DJUIDIU@GMAIL.COM	Mobile Number 9876543765

Examination Applied for
DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PHD 2024
- BRET (BIOMEDICAL RESEARCH ELIGIBILITY TEST)

Application Status

Payment Mode	Application Status	Application Print	Payment Receipt
No Record Found			

ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PhD 2024 - BRET (Biomedical Research Eligibility Test)

Reference ID *	DHRICMR00108
Examination Applied for *	DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PHD 2024 (BIOMEDICAL RESEARCH ELIGIBILITY TEST)
Elective Subject for Examination(Part C) *	BIOCHEMISTRY
Payment Mode *	<input checked="" type="radio"/> ONLINE
Applicable Fees (INR) *	INR 10

[Proceed to Payment](#)



Department of Health Research
Ministry of Health and Family Welfare
Government of India



PAYMENT RECEIPT

REFERENCE NUMBER	DHRICMR00003
REGISTRATION NUMBER	DHRICMRR00003
APPLICANT NAME	SAURABH
APPLIED COURSE	BIOCHEMISTRY
PAYMENT AMOUNT (RS.)	1200.00
PAYMENT STATUS	SUCCESSFUL
PAYMENT TYPE	ONLINE
PAYMENT DATE	16-JUN-2024
ORDER ID	TESTICMR-1
PAYMENT ID	356387642

AUTHORIZED SIGNATORY

NOTE : THIS IS A COMPUTER GENERATED RECEIPT AND DOES NOT REQUIRE A SIGNATURE.



Department of Health Research
Ministry of Health and Family Welfare
Government of India



ONLINE PORTAL TO REGISTER FOR DHR-ICMR NON-MEDICAL FELLOWSHIP FOR PHD 2024 - BRET (BIOMEDICAL RESEARCH ELIGIBILITY TEST)

REFERENCE NUMBER	DHRICMR00003
REGISTRATION NUMBER	DHRICMRR00003
EXAMINATION APPLYING FOR	DHR-ICMR NON MEDICAL FELLOWSHIP FOR PHD 2024 (BIOMEDICAL RESEARCH ELIGIBILITY TEST)

PERSONAL DETAILS

ELECTIVE SUBJECT FOR EXAMINATION	BIOCHEMISTRY
SUBJECT CODE	B
APPLICANT'S NAME	SAURABH
GENDER	MALE
NATIONALITY	INDIAN
MOBILE NUMBER	8169409877
EMAIL ID	DIVYESHPATEL489@GMAIL.COM

CANDIDATE PHOTO



SECTION I

SOCIAL CATEGORY	SC
CATEGORY CERTIFICATE ISSUING AUTHORITY NAME	FJKWKJ
CATEGORY CERTIFICATE SERIAL NO	HSFLJ
CATEGORY CERTIFICATE DATE OF ISSUE	12-06-2017

SECTION II

ARE YOU A PERSON WITH BENCHMARK DISABILITY OF 40% AND ABOVE?	YES
TYPE OF DISABILITY	LOCOMOTORS DISABILITY (ONE ARM)
PH CERTIFICATE ISSUING AUTHORITY NAME	EOYDYAOI
PH CANDIDATE REGISTRATION NUMBER	YDOHWOH
SCRIBE ASSISTANCE	NO

SECTION III

CANDIDATE FATHER'S NAME	HEDUHUQK
CANDIDATE MOTHER'S NAME	DHUQHDJ
CANDIDATE'S DATE OF BIRTH	08-07-1998
AGE AS ON 07-07-2024	25 YEARS 11 MONTHS 29 DAYS
CANDIDATE MARITAL STATUS	SINGLE

CANDIDATE PERMANENT ADDRESS (HOME)

PERMANENT ADDRESS - LINE 1	DGG
PERMANENT ADDRESS - LINE 2	DIHUIH

PERMANENT ADDRESS - STATE / UNION TERRITORY MAHARASHTRA
PERMANENT ADDRESS - DISTRICT MUMBAI SUBURBAN
PERMANENT ADDRESS - CITY / VILLAGE / TOWN RTWUHJ
PERMANENT ADDRESS - PINCODE 827392

CANDIDATE CORRESPONDENCE ADDRESS

CORRESPONDENCE ADDRESS - LINE 1 DGG
CORRESPONDENCE ADDRESS - LINE 2 DIHUIH
CORRESPONDENCE ADDRESS - STATE / UNION TERRITORY MAHARASHTRA
CORRESPONDENCE ADDRESS - DISTRICT MUMBAI SUBURBAN
CORRESPONDENCE ADDRESS - CITY / VILLAGE / TOWN RTWUHJ
CORRESPONDENCE ADDRESS - PINCODE 827392

TEST CENTRE LOCATION PREFERENCE

TEST CENTRE LOCATION PREFERENCE 1 JABALPUR
TEST CENTRE LOCATION PREFERENCE 2 KOCHI (KERALA)
TEST CENTRE LOCATION PREFERENCE 3 HYDERABAD
TEST CENTRE LOCATION PREFERENCE 4 DEHRADUN

EDUCATIONAL QUALIFICATION

EXAMINATION	DEGREE NAME	SUBJECT NAME	INSTITUTE NAME	PERCENTAGE / CGPA	PERCENTAGE	CGPA	PG STATUS	MONTH & YEAR OF PASSING	EXPECTED YEAR OF PASSING
GRADUATION	BTECH	DHJKAN	DYAUJIOH	CGPA	-	9	-	JUNE 2016	-
POST-GRADUATION	MASTER OF TECHNOLOGY	BIOLOGICAL SCIENCES	DHUHD	PERCENTAGE	99	-	PASSED	JUNE 2023	-

UPLOADED DOCUMENTS

DOCUMENT NAME	FILE NAME
10TH/SSC PASSING CERTIFICATE/MARKSHEET	PREVIEW.PDF
GRADUATION DEGREE COMPLETED CERTIFICATE	PREVIEW.PDF
POST GRADUATION COMPLETED CERTIFICATE	PREVIEW.PDF
ANNEXURE 2 - SC/ST	PREVIEW.PDF
PH CERTIFICATE ISSUED BY THE AUTHORITY.	PREVIEW.PDF
CASTE CERTIFICATE ISSUED BY THE AUTHORITY.	PREVIEW.PDF

DECLARATION

I HEREBY DECLARE THAT ALL THE STATEMENTS MADE IN THIS APPLICATION ARE TRUE, COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT IN THE EVENT OF ANY INFORMATION BEING FOUND UNTRUE OR INCORRECT AT ANY STAGE OR I AM NOT SATISFYING ANY OF THE ELIGIBILITY CRITERIA STIPULATED, AND ALSO IN CASE OF CREATING INFLUENCE/UNDUE PRESSURE REGARDING RECRUITMENT SHALL AMOUNT TO CANCELLATION OF MY CANDIDATURE.

APPLICATION SUBMITTED THROUGH ON-LINE FORM DOES NOT IMPLY THAT CANDIDATE HAS FULFILLED ALL THE CRITERIA GIVEN IN THE ADVERTISEMENT. APPLICATION IS SUBJECT TO SUBSEQUENT SCRUTINY AND CAN BE REJECTED IF FOUND TO BE INELIGIBLE AT ANY POINT OF TIME.

I ACCEPT ALL THE ABOVE DECLARATIONS.

PLEASE ENSURE THAT EVERYTHING HAS BEEN FILLED CORRECTLY, BEFORE PROCEEDING TO PAYMENT. THE DATA ENTERED CAN'T BE CHANGED AFTER CANDIDATE PROCEEDS TO PAYMENT. HENCE, BEFORE PROCEEDING FURTHER, THE DETAILS ALREADY ENTERED MAY BE VERIFIED TO ENSURE THAT THEY ARE CORRECT. IF ENTERED DETAILS ARE CORRECT, KINDLY PROCEED TO PAYMENT.

CANDIDATE SIGNATURE

SUBMITTED DATE: 16-JUN-2024

ATTESTATION

***(By Head of the Institution/University from where the candidate has appeared
OR will be appearing***

I, certify that the information given by the candidate Sh./Smt./Kumari.....has been checked by me and it is certified that the candidate is appearing/has appeared (✓tick appropriate) in _____ (name of the programe); IV/VI Semester, (✓tick appropriate) in the final test of the year (2022-2024) but final result is awaited *vide* roll number_____.

**Name and signature of the Head of Institute/University
(With Rubber stamp/seal- Mandatory)**

Place-.....

Date-.....

FORM OF SCHEDULED CASTES (SC) AND SCHEDULED TRIBES (ST) CERTIFICATE PRESCRIBED

**Form of certificate to be produced by SC/ST candidates applying for appointment to posts under the Government of India
CASTE CERTIFICATE**

This is to certify that Shri/Smt./Kum.son/daughter* of of village/Town* in district/Division* of the State/Union Territory* belongs to the Caste/TribewhichisrecognisedasaScheduledCaste/ScheduledTribe* under:

- @ The Constitution (Scheduled Caste) Order, 1950
- @ The Constitution (Scheduled Tribe) Order, 1950
- @ The Constitution (Scheduled Caste) Union Territories Order, 1951
- @ The Constitution (Scheduled Tribe) Union Territories Order, 1951

1. [As amended by the Scheduled Caste and Scheduled Tribe Lists (Modification) Order, 1956, the Bombay Re-organization Act, 1960, the Punjab Re-organization Act, 1966-the State of Himachal Pradesh Act, 1970 The North Eastern Areas (Re-organization) Act, 1971 and the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976), the State of Mizoram Act, 1986, the State of Arunachal Pradesh Act, 1986 and the Goa, Daman and Diu (Re-organisation) Act, 1987]

- @ The Constitution (Jammu and Kashmir) Scheduled Caste Order, 1956.
- @ The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959 as amended by the Scheduled Castes and Scheduled Tribes Order (Amendment) Act, 1976
- @ The Constitution (Dadar and Nagar Haveli) Scheduled Castes Order, 1962.
- @ The Constitution (Dadar and Nagar Haveli) Scheduled Tribes Order, 1962.
- @ The Constitution (Pondicherry) Scheduled Castes Order, 1964.
- @ The Constitution (Uttar Pradesh) Scheduled Tribes Order, 1967.
- @ The Constitution (Goa, Daman & Diu) Scheduled Castes Order, 1968.
- @ The Constitution (Goa, Daman & Diu) Scheduled Tribes Order, 1968.
- @ The Constitution (Nagaland) Scheduled Tribes Order, 1970.
- @ The Constitution (Sikkim) Scheduled Castes Order, 1978.
- @ The Constitution (Sikkim) Scheduled Tribes Order, 1978.
- @ The Constitution (Jammu & Kashmir) Scheduled Tribes Order, 1989
- @ The Constitution (SC) Order (Amendment) Act, 1990
- @ The Constitution (ST) Order (Amendment) Act, 1991
- @ The Constitution (ST) Order (Second Amendment) Act, 1991
- @ The Scheduled Castes and Scheduled Tribes Orders (Amendment) Act 2002
- @ The Constitution (Scheduled Castes) Order (Amendment) Act, 2002
- @ The Constitution (Scheduled Castes and Scheduled Tribes) Orders (Amendment) Act, 2002
- @ The Constitution (Scheduled Castes) Orders (Second Amendment) Act, 2002

2. Applicable in the case of Scheduled Caste/Schedule Tribe persons who have migrated from one State/Union Territory/Administration to another.

This certificate is issued on the basis of the Scheduled Caste/Scheduled Tribe certificate issued to Shri/Smt* Father/mother of Shri/Smt/Kum* Of village/ town* in District/Division* of the State/Union Territory* who belongs to the Caste/tribe which is recognized as a Scheduled Caste/Scheduled Tribe* in the State/Union Territory* of issued by the (Name of prescribed authority) vide their No. Date.....

3. Shri/Smt./Kum* and/or*his/her* family ordinary reside(s) in Village/town* of State/Union Territory of.....

Place:.....
Date:.....

Signature.....
****Designation**.....
(With seal of office)
State/Union Territory*.....

* Please delete the words which are not applicable.

@ Please quote specific Presidential Order.

% Delete the paragraph which is not applicable.

NOTE: The term "ordinarily reside (s)" used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

** List of authorities empowered to issue Scheduled Caste/Scheduled Tribe Certificate.

- (i) District Magistrate/Additional District Magistrate/Collector/Deputy Commissioner/Additional Deputy Commissioner/Deputy Collector/1st Class Stipendiary Magistrate/ Sub-Divisional Magistrate/Taluka Magistrate/Executive Magistrate/Extra Assistant Commissioner.
(not below of the rank of 1st Class Stipendiary Magistrate.)
- (ii) Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
- (iii) Revenue Officers not below the rank of Tehsildar.
- (iv) Sub Divisional Officer of the area where the candidate and/or his/her family normally resides.
- (v) Administrator/Secretary to Administrator/Development Officer (Lakshadweep)

**FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES (OBC) APPLYING FOR
ADMISSION TO CENTRAL EDUCATIONAL INSTITUTE (CEIs) UNDER THE GOVERNMENT OF INDIA**

This is certify that Shri/Smt./Kum. _____ Son/Daughter of Shri/Smt. _____ of village _____ District/Division _____ in the _____ State belongs to the _____ community which is recognized as a Backward Class under:-

- (i) Resolution No.12011/68/93-BCC (C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated13/09/93.
- (ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated20/10/94.
- (iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated25/05/95.
- (iv) Resolution No. 12011/96/94-BCC dated 9/03/96.
- (v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.
- (vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
- (vii) Resolution No. 12011/99/94-BCC dated 11/12/97.
- (viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
- (ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
- (x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated04/04/2000.
- (xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated21/09/2000.
- (xii) Resolution No. 12015/9/2000-BCC dated06/09/2001.
- (xiii) Resolution No. 12011/1/2001-BCC dated19/06/2003.
- (xiv) Resolution No. 12011/4/2002-BCC dated13/01/2004.
- (xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated16/01/2006.
- (xvi) Resolution No. 12011/14/2004-BCC dated 12/03/2007 published in the Gazette of India Extraordinary Part I Section I No. 67 dated12/03/2007.
- (xvii) Resolution No. 12018/6/2005-BCC dated 10/10/2007 published in the Gazette of India Extraordinary Part I Section I No. 311 dated12/10/2007.
- (xviii) Resolution No. 12015/2/2007-BCC dated 18/08/2010 published in the Gazette of India Extraordinary Part I Section I No. 232 dated 18/08/2010 & Corrigendum dated11/10/2010.

Sh./Smt./Kum. _____ and/or his/her family ordinarily reside(s) in the _____ District/Division of the _____ State. This is also to certify that he/she does not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the Government of India , Department of Personnel and Training, O.M. No. 36012/22/93-Estt. (SCT), dated 08.09.1993. Which is modified vide O.M. No.36033/3/2004 Estt. (Res.) dated 09.03.2004 or the latest modification of the Govt. of India.

Dated:

**District Magistrate/Competent Authority
With Seal**

NOTE:

- (a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
 - (i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / 1st Class Stipendiary Magistrate / Sub-Divisional magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of 1st Class Stipendiary Magistrate).
 - (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
 - (iii) Revenue Officer not below the rank of Tehsildar.
 - (iv) Sub-Divisional Officer of the area where the candidate and / or his family resides.
- (c) The annual income/status of the parents of the applicant should be based on financial year ending March 31st

DECLARATION TO BE SIGNED BY OBC CANDIDATES ONLY

I son/daughter of Shri resident of village/town/city
..... district..... statecertificate enclosed)
hereby declare that I belong to the..... community which is recognized as a
backward class by the Govt. of India for the purpose of reservation in services as per orders contained in
Department of Personnel and Training Office Memorandum No.36012/22/93-Esstt(SCT)dated 8-9-1993. It is also
declared that I do not belong to the Persons/Sections (Creamy Layer) mentioned in Column 3 of the Schedule of
the Government of India, Department of Personnel and Training O.M.No.36012/22/93-Esstt. (SCT) dated 08.09.93
& its subsequent revision through O.M.No.36033/3/2004-Esstt. (Res) dated 09.03.2004, 27.05.2013, 13.09.2017

Place.....

(Signature of applicant in running handwriting)

Date.....

Note: The closing date for receipt of application will be treated as the date of reckoning for OBC status of the candidate and also for as summing that the candidate does not fall in the creamy layer.

SELECTION CRITERIA FOR PERSONS WITH BENCHMARK DISABILITY (PwBD)

A SCHEDULE is annexed regarding, "SPECIFIED DISABILITY" clause (zc) of section 2, that states as under,

1. Physical disability

A. Locomotor disability (a person's inability to execute distinctive activities associated with movement of self and objects resulting from affliction of musculoskeletal or nervous system or both), including—

- (a) "leprosy cured person" means a person who has been cured of leprosy but is suffering from—
 - (i) loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifest deformity;
 - (ii) manifest deformity and paresis but having sufficient mobility in their hands and feet to enable them to engage in normal economic activity;
 - (iii) extreme physical deformity as well as advanced age which prevents him/her from undertaking any gainful occupation, and the expression "leprosy cured" shall construed accordingly;
- (b) "cerebral palsy" means a Group of non-progressive neurological condition affecting body movements and muscle coordination, caused by damage to one or more specific areas of the brain, usually occurring before, during or shortly after birth;
- (c) "dwarfism" means a medical or genetic condition resulting in an adult height of 4 feet 10 inches (147 centimetres) or less;
- (d) "muscular dystrophy" means a group of hereditary genetic muscle disease that weakens the muscles that move the human body and persons with multiple dystrophy have incorrect and missing information in their genes, which prevents them from making the proteins they need for healthy muscles. It is characterized by progressive skeletal muscle weakness, defects in muscle proteins, and the death of muscle cells and tissue;
- (e) "acid attack victims" means a person disfigured due to violent assaults by throwing of acid or similar corrosive substance.

B. Visual impairment—

- (a) "blindness" means a condition where a person has any of the following conditions, after best correction—
 - (i) total absence of sight; or
 - (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or 92
 - (iii) Limitation of the field of vision subtending an angle of less than 10 degree.
- (b) "low-vision" means a condition where a person has any of the following conditions, namely: —
 - (i) Visual acuity not exceeding 6/18 or less than 20/60 up to 3/60 or up to 10/200 (Snellen) in the better eye with best possible corrections; or
 - (ii) Limitation of the field of vision subtending an angle of less than 40 degree up to 10 degrees.

C. Hearing impairment-

- (a) "Deaf" means persons having 70 DB hearing loss in speech frequencies in both ears;
- (b) "hard of hearing" means person having 60 DB to 70 DB hearing loss in speech frequencies in both ears;

D. "Speech and language disability" means a permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes.

2. Intellectual disability, a condition characterized by significant limitation both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour which covers a range of every day, social and practical skills, including—

- (a) "specific learning disabilities" means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia;
- (b) "autism spectrum disorder" means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.

3. Mental behaviour,— "mental illness" means a substantial disorder of thinking, mood, perception, orientation or memory that grossly impairs judgment, behaviour, capacity to recognize reality or ability to meet the ordinary demands of life, but does not include retardation which is a condition of arrested or incomplete development of mind of a person, specially characterized by sub normality of intelligence.

4. Disability caused due to—

(a) chronic neurological conditions, such as—

- (i) "multiple sclerosis" means an inflammatory, nervous system disease in which the myelin sheaths around the axons of nerve cells of the brain and spinal cord are damaged, leading to demyelination and affecting the ability of nerve cells in the brain and spinal cord to communicate with each other;
- (ii) "Parkinson's disease" means a progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and elderly people associated with degeneration of the basal ganglia of the brain and a deficiency of the neurotransmitter dopamine.

(b) Blood disorder—

- (i) "haemophilia" means an inheritable disease, usually affecting only male but transmitted by women to their male children, characterized by loss or impairment of the normal clotting ability of blood so that a minor wound may result in fatal bleeding;
- (ii) "thalassemia" means a group of inherited disorders characterized by reduced or absent amounts of haemoglobin.
- (iii) "sickle cell disease" means a haemolytic disorder characterized by chronic anaemia, painful events, and various complications due to associated tissue and organ damage; "haemolytic" refers to the destruction of the cell membrane of red blood cells resulting in the release of haemoglobin.

5. Multiple Disabilities (more than one of the above specified disabilities) including deaf blindness which means a condition in which a person may have combination of hearing and visual impairments causing severe communication, developmental, and educational problems.

6. Any other category as may be notified by the Central Government.

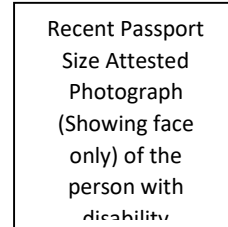
Note: Any amendment to the Schedule to the RPWD Act, 2016, shall consequently stand amended in the above schedule.

FORM-V
Certificate of Disability

(In cases of amputation or complete permanent paralysis of limbs or dwarfism and in cases of blindness)

[See Rule 18(1)]

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)



Certificate No.: Date:

This is to certify that I have carefully tested Shri / Smt / Kum son / wife / daughter of Shri
Date of Birth (DD/MM/YYYY) Age.....
Years, Male/Female Registration No. Permanent Resident of House No.
..... Ward / Village / Street Post Office..... District.....
State, whose photograph is affixed above, and am satisfied that:

- (A) He/she is a case of:
*Locomotor Disability
*Dwarfism
*Blindness
(Please tick as applicable)

(B) The diagnosis in his/her case is

(1) He / She has% (in figure)..... percent (in words) permanent Locomotor disability / dwarfism/blindness in relation to his/her (part of body) as per guidelines (to be specified).

(2) The applicant has submitted the following document as proof of residence:

Nature of Document	Date of Issue	Details of authority issuing certificate
--------------------	---------------	--

Signature/Thumb Impression of the person in whose favour disability certificate is issued

(Signature and Seal of Authorized Signatory of notified Medical Authority)

FORM-VI
Certificate of Disability
(In case of multiple disabilities)
[See Rule 18(1)]

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)

Certificate No.: Date:

Recent Passport Size
Attested Photograph
(Showing face only) of
the person with
disability

1. This is to certify that we have carefully tested Shri/Smt./ Kum
..... son/wife/daughter Of Shri
..... Date of Birth.....(DD/MM/YYYY)
Age.....years, Male/FemaleRegistration No. Permanent
Resident of House No. Ward/Village/Street whose
photograph is affixed above and are satisfied that:

(A) He/She is a case of **Multiple Disability**. His / Her extent of permanent physical impairment/disability has been evaluated as per guidelines (to be specified) for the disabilities ticked below and shown against the relevant disability in the table below:

S. No.	Disability	Affected Part of Body	Diagnosis	Permanent Physical Impairment/ Mental Disability (in%)
1	Locomotors Disability	@		
2	Muscular Dystrophy			
3	Leprosy cured			
4	Dwarfism			
5	Cerebral Palsy			
6	Acid attack Victim			
7	Low Vision	#		
8	Blindness	#		
9	Deaf	£		
10	Hard of Hearing	£		
11	Speech and Language disability			
12	Intellectual Disability			
13	Specific Learning Disability			
14	Autism Spectrum Disorder			
15	Mental illness			
16	Chronic Neurological Conditions			
17	Multiple Sclerosis			
18	Parkinson's Disease			
19	Hemophilia			
20	Thalassemia			
21	Sickle Cell disease			

(B) In the light of the above, his/her overall permanent physical impairment as per guidelines (to be specified), is as follows:

In figures:percent , In words :percent

2. This condition is progressive/non-progressive/likely to improve/not likely to improve.

3. Reassessment of disability is :

i) not necessary, Or

ii) is recommended/afterYearmonths, and therefore this certificate shall be valid till(DD/MM/YYYY)

@ e.g. Left/Right/both arms/legs; # e.g Single eye/both eyes; £e.g. Left/Right/both ears

4. The applicant has submitted the following document as proof of residence:

Nature of Document	Date of issue	Details of authority issuing certificate
--------------------	---------------	--

5. Signature and seal of the Medical Authority

Name and seal of Member	Name and seal of Member	Name and seal of the Chairperson
-------------------------	-------------------------	----------------------------------

Signature/Thumb Impression of the person in whose
favour disability certificate is issued

FORM-VII

Certificate of Disability

{In case of other than those mentioned in Forms V and VI i.e. Annexure VI (A & B)}

[See Rule 18(1)]

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)

Certificate No.: Date:

1. This is to certify that we have carefully tested Shri/Smt./ Kum
 son/wife/daughter of Shri
 Date of Birth..... (DD/MM/YYYY)

Age.....years, Male/Female Registration No.

Permanent Resident of House No. Ward/Village/Street whose
 photograph is affixed above and are satisfied that He/She is a case of

..... **Disability**. His/Her extent of permanent physical
 impairment/disability has been evaluated as per guidelines (to be specified) for the
 disabilities ticked below and shown against the relevant disability in the table below:

S. No.	Disability	Affected Part of Body	Diagnosis	Permanent Physical Impairment/ Mental Disability (in%)
1	Locomotors Disability	@		
2	Muscular Dystrophy			
3	Leprosy cured			
4	Cerebral Palsy			
5	Acid attack Victim			
6	Low Vision	#		
7	Deaf	£		
8	Hard of Hearing	£		
9	Speech and Language disability			
10	Intellectual Disability			
11	Specific Learning Disability			
12	Autism Spectrum Disorder			
13	Mental illness			
14	Chronic Neurological Conditions			
15	Multiple Sclerosis			
16	Parkinson's Disease			
17	Hemophilia			
18	Thalassemia			
19	Sickle Cell disease			

Recent Passport
 Size Attested
 Photograph
 (Showing face only)
 of the person with
 disability

(B) In the light of the above, his/her overall permanent physical impairment as per guidelines (to be specified), is as follows:

In figures:percent , In words :percent

2. This condition is progressive/non-progressive/likely to improve/not likely to improve.

3. Reassessment of disability is:

i) not necessary, Or

ii) is recommended/afterYearmonths, and therefore this certificate shall be valid till(DD/MM/YYYY)

@ e.g. Left/Right/both arms/legs; # e.g Single eye/both eyes; £e.g. Left/Right/both ears

4. The applicant has submitted the following document as proof of residence:

Nature of Document	Date of issue	Details of authority issuing certificate

5. Signature and seal of the Medical Authority

Countersigned [(Countersignature and seal of the CMO / Medical Supdt.) Superintendent / Head of Government Hospital in case the certificate is issued by a medical authority who is not a government servant (with seal)]

(Authorised Signatory of notified Medical Authority) (Name and Seal)

Signature/Thumb Impression of the person in whose favour disability certificate is issued

Note: In case this certificate is issued by a medical authority who is not a government servant, it shall be valid only if countersigned by the Chief Medical Officer of the District. The principal rules were published in the Gazette of India vide notification number S.O. 908(E).dated the 31st December. 1996issued.

ANNEXURE –VII(A)

LETTER OF UNDERTAKING FOR USING SCRIBE

NOTE: Candidates who are Visually Impaired (VI)/candidates whose writing speed is affected by Cerebral Palsy / muscular dystrophy / candidates with Locomotor disability (one arm)/Intellectual disability (Autism, specific learning disability and mental illness) are eligible for Scribe. PARTICULARS OF SCRIBE PROPOSED TO BE ENGAGED BY THE CANDIDATE

- 1. Name of the Candidate
- 2. ICMR-JRF 2024 Roll No
- 3. Name of Test Centre
- 4. Qualification of Candidate
- 5. Disability Type
- 6. Name of the Scribe
- 7. Date of Birth of the Scribe
- 8. Father's Name of the Scribe
- 9. Address of the Scribe :
 - (a) Permanent Address
 -
 - (b) Present Address
 -
- 10. Educational Qualification of the Scribe
-
- 11. Relationship, if any, of the Scribe to the Candidate.....

Paste here recent colour Passport Size Photograph of the SCRIBE of size 3.5 cm x 4.5 cm (The colour photograph should not be more than 3 months old.
Signature of SCRIBE in the above box below the photograph

12. DECLARATION:

- i) We hereby declare that the particulars furnished above are true and correct to the best of our knowledge and belief. We have read/ been read out the instructions of the ICMR&PGIMER regarding conduct of the candidates assisted by Scribe/Scribes at this test and hereby undertake to abide by them.
- ii) We do hereby undertake that the qualification of scribe is mentioned correctly and the qualification of the scribe is one step below qualification of candidate. In case, subsequently it is found qualification of scribe is not as declared by the candidate, I (the candidate) shall forfeit my right to the post and claims relating thereto.
- iii) We declare that the Scribe himself/herself is not a candidate in this test. We understand that in case it is found otherwise the candidature of both of us will be rejected.
- iv) We declare that the scribe has not acted/will not act as Scribe to any other candidate of this test.

(Signature of the Candidate)
Left thumb impression of the Candidate in the box given above

(Signature of the Scribe)
Left thumb impression of the Scribe in the box given above

Signature of the Observer/Office Supdt. of the Test Centre

ANNEXURE –VII(B)

Certificate regarding physical limitation in an testinee to write

This is to certify that I have carefully testined Shri/Smt./ Kum(name of the candidate with disability) a person with.....(nature and percentage of disability as mentioned in the certificate of disability, son/wife/daughter of Shri a Resident of Village/District/State and to ensure that he/she has physical limitation which hampers his/her writing capabilities owing to his/her disability.

Signature

Chief Medical Officer/Civil Surgeon/Medical Superintendent of a
Government Health Care Institution

Name and Designation

Name of Govt Hospital/Health Care Centre with Seal

Place:

Date:

Note:

Certificate should be given by a specialist of the relevant stream/disability (e.g. Visual Impairment-Ophthalmologist, Locomotordisability-Prthopaedic specialist/PMR)

Letter of Undertaking for Using Own Scribe

I _____ a _____ candidate with _____
_____ (name of the disability) appearing for the _____
_____ (name of the test) bearing Roll No. _____ at _____
_____ (name of the Centre) in the District _____, _____ (name of the
State). My qualification is _____.

I do hereby state that _____ (name of the scribe) will provide the service
of scribe/reader (✓tick appropriate) for the undersigned for taking the ICMR-JRF 2024 Test. My (scribe/reader
✓tick appropriate) qualification is _____ (proof enclosed- self attested).

I do hereby undertake that qualification of my Scribe/reader (✓tick appropriate) is
_____. In case, subsequently it is found that his/her qualification is not as declared by
the undersigned and is beyond my qualification, I shall forfeit my right to the selection and claims relating thereto.

(Signature of the candidate with Disability)

Photo of the Scribe/Reader

*Paste recent self-
attested
passport size
photograph of
the
Scribe/Reader*

(Signature of the Scribe/Reader ✓tick appropriate)

Place:

Date:

Format for Income and Assets Certificate to be produced by Economically Weaker Sections (EWS)

Government of.....

(Name & Address of the **authority issuing the certificate**)**INCOME & ASSETS CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS**

Certificate No. _____

Date: _____

VALID FOR THE YEAR _____

This is to certify that Shri/Smt./Kumari _____ son/daughter/wife
of _____ permanent resident of _____, Village/Street
_____ Post Office _____ District _____
_____ in the State/Union Territory _____ Pin Code _____ whose photograph is
attested below belongs to Economically Weaker Sections, since the gross annual income* of his/her 'family'*** is
below Rs. 8 lakh (Rupees Eight Lakh only) for the financial year _____. His/her family does not own or
possess any of the following assets*** :

- I. 5 acres of agricultural land and above;
- II. Residential flat of 1000 sq. ft. and above;
- III. Residential plot of 100 sq. yards and above in notified municipalities;
- IV. Residential plot of 200 sq. yards and above in areas other than the notified municipalities.

2. Shri/Smt./Kumari _____ belongs to the _____ caste which is not
recognized as a Scheduled Caste, Scheduled Tribe and Other Backward Classes (Central List)

Signature with seal of Office _____

Name _____

Designation _____

Recent Passport size
attested photograph of
the applicant

*Note1: Income covered all sources i.e. salary, agriculture, business, profession, etc.

**Note 2: The term "Family" for this purpose include the person, who seeks benefit of reservation, his/her parents and
siblings below the age of 18 years as also his/her spouse and children below the age of 18 years

***Note 3: The property held by a "Family" in different locations or different places/cities have been clubbed
while applying the land or property holding test to determine EWS status.

Syllabus of Subject for Part-C [50 questions].

Questions relevant to applied/analytical part of the biological processes from specific disciplines/subjects.

1. Biochemistry

- *Molecules and their interaction relevant to biology:*
Structure of atoms, molecules and chemical bonds, Composition, structure and function of biomolecules (carbohydrates, lipids, proteins, nucleic acids and vitamins).
Stabilizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.). Principles of biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties). Bioenergetics, glycolysis, oxidative phosphorylation, coupled reaction, group transfer, biological energy transducers.
Principles of catalysis, enzymes and enzyme kinetics, enzyme regulation, mechanism of enzyme catalysis, isozymes, Conformation of proteins (Ramachandran plot, secondary structure, domains, motif and folds). Conformation of nucleic acids (helix (A, B, Z), t-RNA, micro-RNA). Stability of proteins and nucleic acids. Metabolism of carbohydrates, lipids, amino acids nucleotides and vitamins.
- *Introduction to biochemistry;*
Biomolecules: structure and function
Techniques in biochemistry: chromatography, electrophoresis, spectrophotometry, etc.
- *Cell Biology and Molecular Biology:*
Cell structure and function and Cell signaling and communication: The Cell Theory of Life, Sub-cellular organelles, Cytoskeleton and Extracellular matrix, Cell cycle: Prokaryotic and Eukaryotic cells. Structure and function of subcellular organelles. Importance of cell shape, motility in intracellular transport. Structure and movement of cilia and flagella. Microtubules, structure and dynamics. Assembly of various extracellular matrix and their role in integrating cells into tissues and cell-cell interactions. Control of cell cycle in yeast and mammalian cells. Role of various cycle-CDK complexes in the transition of various checkpoint of cell cycle. Role of ubiquitin-protein ligase –SCF and APC/C in the control of cell cycle. Transport across cell membranes: Understanding membrane transport phenomenon, Passive and active transport, Symport, uniport and antiport. Overview of membrane structure and function. Endocytosis and endosome-endosome fusion, Classification of endocytosis, phagocytosis and pinocytosis, clathrin-independent endocytosis, receptor-mediated endocytosis. Overview of exocytosis. Transport of cholesterol and iron in mammalian cells. Identification and mechanism of action of various molecular factors (like Rab5, PI-3-Kinase) involved in endosome-endosome fusion. Protein sorting and targeting: Protein translocation across ER membrane, SRP. ER and Golgi vesicular traffic, Protein import in mitochondria, peroxisomes, chloroplasts. Signal for Import and Export of Macromolecules from Nucleus. Glycosylation in mammalian cells - types, role in protein stability and folding. General principles of signaling by cell surface receptors, endocrine, paracrine and autocrine signaling, types of cellular responses induced by signaling molecules, components of intracellular signal-transduction pathways. G-protein coupled receptor system, General mechanism of the activation of effectors molecules associated with GPCRs, GPCRs that activate or inhibit adenylatecyclase, activate phospholipase C, regulating ion channels. Signaling of growth factors (EGF and Insulin) via activation of receptor tyrosine kinases. Signaling of TGF β by Smad proteins. Cytokine signaling via JAK/STAT pathway. Cell Survival and Death Signal: Programmed cell death and role of Caspase protein in apoptosis. Various pro-apoptotic and anti-apoptotic regulators and pathways. Various diseases associated with dysregulated signaling.

Molecular biology techniques: PCR, cloning, gene expression analysis, Electrophoresis – Principle, Polyacrylamide gel electrophoresis (native), SDSPAGE, Agarose gel electrophoresis, Buffer systems, Detection, identification and staining and applications. Chromatography- Introduction to chromatography, Principle and applications of Paper Chromatography, Thin Layer Chromatography, Ion Exchange Chromatography, Molecular Sieve Chromatography and Affinity Chromatography. Reversed-phase chromatography;

FPLC, HPLC and their applications. DNA and RNA isolation; Northern Blot; Southern Blot; Western Blot; In situ hybridization; In vitro transcription assay; In vitro translation assay; Electrophoretic Mobility Shift Assay; DNA foot printing assay; RNase protection assay; Chromatin immunoprecipitation; Reporter assays, PCR, qPCR, Microarray, Sequencing, mammalian cell culture techniques; Immortalization of cells; Overexpression and Silencing of genes; Cell synchronization, Cell cycle analysis; Cytotoxicity and apoptosis tests; Cell staining techniques; Assays for cell proliferation, migration invasion of cells and cytotoxicity tests. Centrifugation - Principle of centrifugation, Sedimentation coefficient. Factors affecting sedimentation, Various types of centrifuges, Types of rotors. Differential centrifugation, Density gradient centrifugation - zonal and isopycnic. Spectroscopic methods -Absorbance, Beer's & Lambert's Law, Fluorescence, Chemiluminescence, Phosphorescence, Circular dichroism, IR, ESR, FRET, Biomolecular fluorescence complementation assay, FRAP (Fluorescence recovery after photobleaching); Differential Scanning Calorimetry and Isothermal titration Calorimetry. Structural methods - NMR; Xray crystallography; Cryo-EM, Imaging techniques and Microscopy. Protein purification - Gel filtration, ion-exchange, hydrophobic interaction chromatography, affinity chromatography, reversed-phase chromatography; FPLC, HPLC and their applications.

- *Enzymology and Metabolism:*

Enzyme kinetics and regulation

Metabolic pathways: glycolysis, TCA cycle, oxidative phosphorylation, etc.

Metabolic disorders and their biochemical basis

- *Biochemical Techniques and Instrumentation:*

Advanced chromatography techniques

Mass spectrometry

Nuclear magnetic resonance (NMR) spectroscopy

Immunology and Immunotechniques

- *Basics of immunology:*

Immunoassays: ELISA, western blotting, immunohistochemistry, etc.

Applications of immunology in research and diagnostics

Molecular Genetics and Genetic Engineering

DNA replication, transcription, and translation

Gene regulation

Recombinant DNA technology and its applications

- *Bioinformatics and Computational Biology:*

Introduction to bioinformatics

Sequence analysis

Structural bioinformatics

Advanced Topics in Biochemistry

- *Proteomics and systems biology:*

Neurochemistry

Biochemical pharmacology

Advanced enzymology

Cancer biology

Biochemical toxicology

Industrial biochemistry

- *Biochemical Techniques:*

Electrophoresis – Principle, Polyacrylamide gel electrophoresis (native), SDS PAGE, Agarose gel electrophoresis, Buffer systems, Detection, identification and staining and applications. Chromatography- Introduction to chromatography, Principle and applications of Paper Chromatography, Thin Layer Chromatography, Ion Exchange Chromatography, Molecular Sieve Chromatography and Affinity Chromatography. Reversed-phase chromatography; FPLC, HPLC and their applications. DNA and RNA isolation; Northern Blot; Southern Blot; Western Blot; In situ hybridization; In vitro transcription assay; In vitro translation assay; Electrophoretic Mobility Shift Assay; DNA foot printing assay; RNase protection assay; Chromatin immunoprecipitation; Reporter assays, PCR, qPCR, Microarray, Sequencing, mammalian cell culture techniques; Immortalization of

cells; Overexpression and Silencing of genes; Cell synchronization, Cell cycle analysis; Cytotoxicity and apoptosis tests; Cell staining techniques; Assays for cell proliferation, migration invasion of cells and cytotoxicity tests. Centrifugation - Principle of centrifugation, Sedimentation coefficient. Factors affecting sedimentation, Various types of centrifuges, Types of rotors. Differential centrifugation, Density gradient centrifugation - zonal and isopycnic. Spectroscopic methods -Absorbance, Beer's & Lambert's Law, Fluorescence, Chemiluminescence, Phosphorescence, Circular dichroism, IR, ESR, FRET, Biomolecular fluorescence complementation assay, FRAP (Fluorescence recovery after photobleaching); Differential Scanning Calorimetry and Isothermal titration Calorimetry. Structural methods - NMR; Xray crystallography; Cryo-EM, Imaging techniques and Microscopy. Protein purification - Gel filtration, ion-exchange, hydrophobic interaction chromatography, affinity chromatography, reversed-phase chromatography; FPLC, HPLC and their applications.

- ***Clinical Biochemistry***

Types of clinical samples, safety regulations, handling and storage of biological samples, types of vacutainers. Collection of blood and preparation of plasma and serum, Hemoglobin estimation by Sahli's method/ Drabkins's method, Types of Diabetes mellitus- IDDM, NIDDM, Estimation of Blood glucose by enzymatic method, Glucose Tolerance Test, Functions of liver, analysis of liver enzymes, Liver Function test, Estimation of Total protein and A:G ratio in serum. Functions of kidney, analysis of parameters related to kidney function, Kidney function test, Estimation of serum Urea (BUN) and serum Creatinine. Lipids of physiological importance (triglycerides, lipoproteins), Lipid Profile, Estimation of total blood cholesterol. Introduction to automation in clinical biochemistry labs, key Biomarkers used in preventive Health Checkups and their relevance

- ***Biochemical correlation of Diseases:***

Inherited Metabolic diseases and Hormonal disorders- Introduction to inherited Metabolic diseases. Alkaptonuria, Phenylketonuria; Glycogen storage diseases (Von Gierke disease, Cori disease); Lipid storage diseases: Gaucher's disease; SCID. Overview of the endocrine disorders: Cushing's disease, Diabetes insipidus.

Nutritional deficiency and lifestyle-based diseases - Concept of nutrition and balanced diet; Protein-energy malnutrition: Kwashiorkor and Marasmus; Vitamin deficiency diseases: Beri-Beri, Scurvy, Pellagra, Nutritional deficiency Anemia, Night blindness, Rickets. Lifestyle-based diseases: Atherosclerosis, Diabetes Mellitus-II.

Autoimmune diseases - Concepts in immune recognition-self and non-self-discrimination, organ specific autoimmune diseases- Hashimoto's thyroiditis, Graves' disease, Myasthenia Gravis, Diabetes Mellitus-I, Systemic diseases: Systemic lupus erythematosus (SLE), Rheumatoid arthritis.

Infectious diseases - Classification of infectious diseases; Role of sanitation, drugs and vaccines in prevention, transmission and treatment of infectious diseases. Diseases caused by viruses: Polio, Influenza, HIV and COVID. Diseases caused by bacteria: Tetanus, Tuberculosis. Protozoan infections: Malaria; Parasitic infections: Kala Azar.

2. Biological Sciences (Life Sciences, Human Biology, Botany)

Life Sciences:

- ***Developmental Biology and Physiology:***
 - Embryonic development and organogenesis
 - Stem cells and regeneration
 - Physiology of major organ systems (e.g., cardiovascular, respiratory, nervous)
 - Endocrine regulation and hormone signaling
 - Homeostasis and physiological adaptation
- ***Introduction to Applied Immunology:***
 - Overview of the immune system and its components

- Immune responses: innate and adaptive immunity
- Components of the innate immune system: barriers, cells, and soluble mediators
- Recognition of microbial pathogens by pattern recognition receptors
- Activation of innate immune responses: inflammation and phagocytosis
- Principles of adaptive immunity: antigen recognition and lymphocyte activation
- Humoral and cellular immune responses.
- *Principles of immunological techniques:*
 - ELISA, western blotting, immunofluorescence
 - Flow cytometry: principles and applications in immunology
 - Immunohistochemistry and immunocytochemistry
 - Immunoassays for infectious diseases and autoimmune disorders
 - Molecular techniques in immunology: PCR, gene cloning, and sequencing
- *Immunodiagnostics:*
 - Principles of immunodiagnostics
 - Serological tests for infectious diseases
 - Autoimmune disease diagnostics
 - Cancer biomarkers and immunodiagnosis
- *Immunotherapy and Vaccines:*
 - Principles of immunotherapy
 - Monoclonal antibodies in disease treatment
 - Immunotherapy in cancer and autoimmune diseases
 - Vaccine development and design
- *Immunoengineering and Biotechnology:*
 - Immunomodulatory drugs and their applications
 - Gene therapy and immunogenetics
 - Immunological approaches in regenerative medicine
 - Immunological considerations in bioprocessing and biomanufacturing
- *Ethical and Societal Implications:*
 - Ethical considerations in immunology research and application
 - Societal impact of immunological interventions
 - Access to immunotherapies and vaccines
 - Future perspectives and challenges in applied immunology.

Human Biology:

- Cancer genetics: Basics of DNA damage, underlying causes, genotoxic agents, repair mechanisms, carcinogenesis including defects in DNA repair and hereditary diseases, techniques in DNA damage analysis (DNA adduct analysis, comet assays, immunostaining tools), tumour progression and metastasis, tumour heterogeneity, familial and sporadic cancers and associated causes, cancer diagnostics, markers, treatment and prevention, delivery systems for targeted anti-cancer therapy.
- Human disease biology: Congenital and metabolic disorders of cardiovascular (emphasis on Atherosclerosis, diabetes, coronary artery disease, obesity etc.), skeletal and neuromuscular system (emphasis on Parkinson's, Alzheimer's, stroke etc.), immune system function during infectious diseases (including viral, bacterial and parasitic pathogens), Auto-immune and immuno-deficiency disorders, allergic and rare diseases such as muscular dystrophies.
- Human clinical genetics: Patterns of inheritance in human diseases, genetic basis of inborn errors and monogenic diseases, Genome-wide association studies, genetics of well-known cases of genetic disorders including neuromuscular pathologies, multi-factorial syndromes, male and female infertility, mosaicism and uniparental disomy etc.
- Regenerative Medicine: Principles of regeneration, types of stem cells and their developmental origin, concept of cell and gene therapy and potential applications, intellectual property rights and production practices (GMP, GLP etc.)
- Personalised medicine: Human genome project, importance of genetic variation in human health and disease (including disease penetrance and drug response), potential clinical applications of next-gen and single cell sequencing, genome guided therapy for cancer.

- Molecular basis of genetic testing: Principles of types of PCR amplification.
- Management of genetic disorders: Topics covered under genetic inheritance patterns and risk assessment, pharmacological interventions, potential of gene and cell therapy, clinical applications of gene editing tools.
- Techniques in human genetics: Prenatal diagnosis, chromosomal testing, invasive and non-invasive methods of genetic testing.
- Aging: Concepts of age-associated functional decline in various physiological systems, molecular mechanisms underlying cellular senescence, DNA damage and repair pathways in aging, mitochondrial dysfunction, immune system function during aging, Management: caloric restriction, dietary intervention, exercise and pharmacological intervention etc.

Botany:

- Photosynthesis & Respiration: Light harvesting complexes, mechanisms of electron transport, CO₂ fixation-C₃, C₄, and CAM pathways, Citric acid cycle, plant mitochondrial electron transport and ATP synthesis.
 - Plant hormones: Biosynthesis, storage, breakdown and transport, physiological effects, mechanisms of action.
 - Secondary metabolites: Biosynthesis of terpenes, phenols, nitrogenous compounds and their roles.
 - Principles and methods of taxonomy: Concepts of species and hierarchical taxa, Biological nomenclature, Criteria for classification of taxon, Major classification of plants
 - Economic Botany & Ethnobotany: Production, uses and general account of Cereals and Millets (wheat, paddy, and maize), Legumes (Pea, Gram and Lentil), Fibres (Cotton, jute and coir), Timbers (Teak, Shisham and Sal), Medicinal plants (*Aconitum*, *Cinchona* and *Rauwolfia*), Oils (Castor, mustard and groundnut) and Beverages (Tea, coffee and cocoa); Concept and history of ethnobotany, Ethnobotany and conservation of natural resources, Ethnobotanical plants as leads for drug development.
 - Stress physiology: Responses of plants to biotic (pathogen and insects) and abiotic (water, temperature and salt) stresses, mechanisms of stress resistance.
 - Ecosystem: Structure and function, energy flow and mineral cycling, Food chain and trophic levels, Effects of pollution and phytoremediation.
- Economic Botany
 - Genetics
 - Plant molecular biology
 - Plant Physiology and Development

- *Ecology and Environmental Sciences*

- Ecosystem structure and function
- Population dynamics and community ecology
- Biodiversity and conservation biology
- Environmental pollution and toxicology
- Climate change and global warming

3. Biostatistics

- Basic biostatistics: Types of data, measurement, descriptive statistics
- Probability concepts
- Probability distributions: Binomial, Poisson, Normal, Chi-square, t, F
- Sampling distributions
- Estimation and hypothesis testing
- Analysis of variance
- Simple linear regression and correlation
- Multiple regression and correlation
- Multivariable regression techniques
- Categorical data analysis
- Non parametric distribution
- Survival analysis methods
- Vital statistics

- Study designs
- Quantifying the extent of disease in different study designs
- Sample size and power

4. Biotechnology

- *Proteins:*

Primary structure of a protein: methods of sequencing, forces stabilizing protein structure, secondary and super secondary structures of a protein, tertiary structure of globular and fibrous proteins, quaternary structure of a protein, post-translational modifications, G-proteins and G-protein coupled receptors (GPCRs), structure and function, proteins in inherited syndromes.

- *Protein folding:*

Introduction: Genes and Proteins, Protein structural organization, Protein folding, Anfinsen's experiments and lessons, Levinthal's paradox, Energy minima and stability of protein folds, protein evolution, protein conformational diseases, Methods of determining protein structures: Basic principles and drawbacks, Protein structure prediction: Principles and advantages, Protein structure prediction: Uses and Applications.

- *Bioinformatics:*

Sequence analysis - pair wise & multiple sequence alignment & phylogenetic, Biological softwares & tools: ExPASy & BLAST, Biological databases of genes, proteins & structures: NCBI, UniProt & PDB

- *Structural Bioinformatics, Molecular Modeling & Simulations:*

Secondary structure prediction of protein, Tertiary structure prediction of protein: Homology Modeling, Threading & *Ab initio*, Modeling of protein-ligand interactions: Molecular Docking, Molecular mechanics force field, Energy Minimization, Molecular Dynamics Simulation.

- *Drug discovery & CADD:*

Drug target identification & validation, Lead compound identification & optimization, Preclinical development & Clinical trials, Receptor based drug design – Molecular docking & *de novo* design

Ligand based drug design – QSAR & pharmacophore modeling,

- *Enzyme Kinetics:*

General principles, Enzyme assays, Single substrate reaction, Michaelis- Menten kinetics, Multi substrate reaction, NonMichaelis - Menten kinetics, Enzyme inhibition and activation, allosteric mechanism, control of enzyme activity, Bimolecular interactions analyzers, Principles and applications of Surface Plasmon Resonance, ELISA and Western blot.

- *Elementary spectroscopy: Principles and applications:*

Introduction to spectroscopy, basic principles, instrumentation and applications of UV-VIS absorption, infrared, Raman Spectroscopy Atomic Force Microscopy, Circular dichroism. Fluorescence spectroscopy, Mass spectroscopy for small molecules, nuclear magnetic resonance, Electron microscopy.

- *Basic and Applied Molecular biology:*

Nucleotides and Nucleic Acids, Structure of DNA and RNA, Forces stabilizing nucleic acid structure, DNA replication and structural mechanisms of DNA polymerase, Mutations and DNA repair, transcription and RNA polymerase, Genetic code, Structure of acyl tRNA and amino-acylation, Prokaryotic and eukaryotic translation, Post translational modifications.

Basic principle of cloning, Primer design, Polymerase chain reaction, Vectors, Chromosomal and Plasmid DNA isolation from *E. coli*, Protein expression in bacterial and mammalian systems, Cell free translation, Northern, southern and western blotting, Genomic and cDNA library preparation, Basics of Sanger and Next generation sequencing, Genome editing (CRISPR-Cas) systems. Gene therapy, Micro array analysis, Protein-nucleic acid

interaction, siRNA and their applications.

- **Cell biology:**

Organization and structure of prokaryotes and eukaryotes. How cells are studied: Microscopy, Light and Electron Microscopy, principles, techniques and sample preparations. Nucleus, cytoplasm, plasma membrane, mitochondria-structure, function respiratory chain and ATP synthesis, endoplasmic reticulum, golgi apparatus, peroxisomes, lysosomes, protein modifications, glycosylation. Intracellular transport of proteins, vesicular transport, receptor mediated endocytosis. Cell contractibility and Mobility, cytoskeletal motility, dynamics of Aqua and aero motions.

- **Membrane Biophysics:**

Membrane Structure, Lipid structure and their organization, comparison of different membrane models, diffusions and permeability, different types of transport system across membranes, Passive Membrane Properties, electrical equivalent circuit of membrane, membrane resistance Nernst Equation, Ion Pump, Goldman's Equation, Methods to record membrane potential, Current-voltage relation, Ion Channels – Structure and Types, Ion Permeability, ion selectivity, Channel Gating, Gating Current

- **Analytical techniques and separation methods:**

Protein salting in, salting out, Basic principle and application: Principle of centrifugation-sedimentation, sedimentation coefficient, Preparative centrifugation and analytical centrifugation, sedimentation velocity method and equilibrium method; molecular weight, size and shape determination.

- **Principle of chromatography:** capacity factor, distribution coefficient; retention factor, selectivity factor, Chromatographic techniques- ion exchange chromatography, Gel filtration chromatography, Affinity chromatography, hydroxyapatite chromatography, hydrophobic interaction chromatography for separation of proteins. HPLC, FPLC and UPLC: principle and its applications, SDS PAGE, Native PAGE, Isoelectric focusing: principle and procedure, 2D Electrophoresis, preparative electrophoresis, estimation of relative molecular weight of proteins, Dynamic light scattering principle and application.

5. Microbiology (Bacteriology, Virology, Parasitology)

- **Bacteriology:**

- Bacterial cell structure and appendages: Overview of eubacterial cell organization: nucleoid, ribosomes, intracytoplasmic membranes and cell inclusions. Detailed account of biogenesis and function of various cell structure appendages: flagella- structure, assembly and mechanism of movement; pili and fimbriae- types, structure and their role. External cell surface structures: capsule, glycocalyx, slime layer and S-layer.
- Bacterial cell wall and cell membrane: Overview of gram negative and gram positive bacterial cell wall, outer membrane lipopolysaccharide (LPS). Detailed account of cell wall synthesis and its inhibitors including different antibiotics.
- Bacterial cell division and reproduction: Binary fission and other forms of reproduction in bacteria, bacterial cell cycle, assembly, maintenance and disassembly of Z ring, endospore structure and stages involved in endospore development in *Bacillus subtilis*
- Bacterial genome: Genome organization of *E.coli* and salient features of genomes of *Deinococcus radiodurans*, *Azotobacter vinelandii*, *Buchnera sp.*, *Agrobacterium tumefaciens* and *Epulopiscium sp.*
- Bacterial secretion system: Introduction. Sec secretion pathway, SecB secretion pathway, SRP pathway, Tat pathway. Protein secretion in Gram-negative bacteria: Type I-Type VII. Protein secretion in Gram-positive bacteria: Type VII, Sec A2, Sortases and Injectosome. Introduction to Type VIII and Type IX secretion systems.

- **Virology:**

- Introduction to Virology: The big picture of all viruses using a common strategy, virus classification, the infectious cycle, studying virus infection. Koch's Postulates for viruses,

virus genome types, double stranded DNA (dsDNA), gapped DNA genomes, single-stranded (ssDNA) genomes, double stranded RNA (dsRNA), single stranded RNA (ssRNA), (+) strand RNA, single stranded (+) sense RNA with DNA intermediate, single stranded RNA (-) sense, ambisense RNA genomes.

- Virus Structure and Assembly: Meta stability, the tools for viral structural biology. Helical symmetry, Icosahedral symmetry, Triangulation number, Quasi-equivalence. Virus attachment and entry, Initiation of infection, Affinity, Avidity, cellular receptor for viruses. Getting into the nucleus, virus disassembly, metastable structures, concentrating components for assembly, getting things to the right place. How do viruses make sub-assemblies, sequential and concerted assembly. Packaging signals, packaging of segmented genome, acquisition of an envelope, budding strategies.
- RNA directed RNA synthesis, Reverse Transcription and Integration, Translation and genome replication of DNA viruses: Identification of RNA polymerase, how RNA synthesis occurs in viruses? Reverse transcriptase, retrovirus genome organization, steps of DNA synthesis in retroviruses. Regulation of translation in virus infected cells. Basic rules of genome replication in DNA viruses, viral origins of DNA replication. Generic steps in transcription, host polymerases, initiation, splicing, alternate splicing, promoter structure, steps in regulation of transcription, enhancers, virus coded transcriptional regulators, transcriptional cascade, export.
- Virus Infections basics, interaction with host, acute and persistent infections: Fundamental questions of viral pathogenesis. Virion defenses to hostile environment, viral spread, viremia, determinants of tissue tropism. Virus shedding, transmission of infection, host defense, innate immune response, virus virulence, identifying virulence genes. Toxic viral proteins, cellular virulence genes, immunopathology, systemic inflammatory response syndrome. Immune complexes, virus induced auto-immunity, general pattern of infection. In apparent acute infections, defense against the acute infection. Influenza, Polio, Measles, Rotavirus, persistent infections, chronic and latent Infections.
- Vaccines and anti-Viral drugs, virus evolution and emerging viruses: Herd immunity, requirement of an effective vaccine, different ways of making vaccine. Inactivated vaccine, subunit vaccines, subunit vaccines, live attenuated vaccines, polio eradication. Anti-viral drugs, search for anti-viral drugs, the path for drug discovery, mechanism based screens, cell based screen, antiviral screening. Resistance to antiviral drugs, main drivers of virus evolution, the quasi-species concept, error threshold, genetic bottlenecks, Muller ratchet, genetic shift and drift. Theories on origin of virus, evolution of new viruses, emerging viruses, Factors that drive viral emergence, evolving host-virus relationship.
- Unusual Infectious Agents, viral cancer, transformation and oncogenesis: Viroids, origin of viroids, Satellites, Prions, Transmissible spongiform encephalopathy (TSE) caused by prions, Prion hypothesis, Prion species barrier. Virus-induced cancer, Avian leucosis retroviruses, Proviral DNA sequences, Proto-oncogenes, DNA tumor Viruses, the link between DNA virus biology and transformation.
- Virus Evasion strategies and investigation of virus outbreak: Strategies for evasion, Translational regulation, Innate defense targets, Viral modulators of interferon, Autophagy, Apoptosis, Apoptotic pathway and viruses, Immune modulation, Immune modulation strategies. Case study of health risk associated with a virus epidemic, the origin of outbreak, the spread, the intervention strategies, public health response.
- *Parasitology:*
 - *General Parasitology*
 - Scope and historical landmarks in Parasitology. Basic principles and nomenclature aspects of parasites. Parasitology as an academic and applied science. Parasite fauna of hosts belonging to different groups. Zoogeography of parasites. Host parasite inter-relationship.
 - Properties of parasites. Host specificity. Kinds of parasites. Hyperparasitism. Parasitoids. Relation of parasite fauna with the food, age and migration of the host and season of the year.

Molecular Parasitology:

- Virus: Introduction and molecular characteristics, mode of transmission, clinical presentation and control measures of human viral diseases (Hepatitis A, B & C, Dengue, Mumps, Influenza and HIV). General introduction to bird flu (avian influenza). Bacteria: General characteristics, culture characters, pathogenesis, laboratory diagnosis and control measures of human bacterial diseases (Meningitis, Tuberculosis, Typhoid and Leprosy). Bacteriology of water, milk and air. Biological warfare: Bioterrorism. Fungi: Opportunistic mycoses: define and list; Candidiasis (*Candida albicans*). Biochemical and molecular techniques and their application: Concept of centrifugation, spectrophotometry, electrophoresis, chromatography, Western blotting, Southern and Northern blotting, ELISA, PCR and RFLP.

6. Nursing

- *Nursing management:*
 - Infection Control in Clinical Settings
 - Nursing Management of Respiratory and Cardiovascular Problems
 - Nursing Management of Digestive System Problems
 - Nursing Management of Genito-Urinary Problems
 - Nursing Management of Endocrine System Disorders
 - Nursing Management of Musculoskeletal Problems
 - Nursing Management of Neurological Disorders
 - Nursing Management of Reproductive System Disorders
 - Nursing Management in Critical Care Units
 - Nursing Care of Neonates and Children
 - Assessment and Nursing Management of Eye Disorders
 - Assessment and Nursing Management of Ear, Nose & Throat Disorders
 - Nursing Care of the Elderly
 - Nursing Management of Psychiatric Disorders
 - Assessment and Nursing Management of Pregnancy, Labor, and Puerperium
 - Community Health Nursing
- *Nursing education:*
 - Aims and Philosophies of Education
 - Teaching-Learning Process and Strategies
 - Instructional Media and Aids
 - Development and Trends in Nursing Education
 - Overview of Nursing Educational Programs in India
 - Continuing Education in Nursing
 - Curriculum Development
 - Teacher Education for Nursing Profession
 - Evaluation and Assessment
 - Guidance and Counseling
 - Administration of Nursing Curriculum
 - Development of Standards and Accreditation in Nursing Education
 - Ethics and Evidence-Based Teaching in Nursing Education
- *Nursing research:*
 - Introduction to Management
 - Organization of Nursing and Health Delivery System
 - Roles and Functions of Nurse Managers in Planning, Organizing, Personnel Management, Directing, and Controlling
 - Organizational Behavior
 - Financial Management in Nursing
 - Management Information System
 - Material Management
 - Legal and Ethical Issues in Nursing Management
 - Professionalism and Professional Advancement

- *Research Methodology and Statistics:*
 - Fundamentals of Nursing Research
 - Ethics in Nursing Research
 - Research Problem and Literature Review
 - Theoretical and Conceptual Framework in Nursing Research
 - Planning of Research and Research Designs
 - Tools of Data Collection and Sampling
 - Methods of Data Collection and Analysis
 - Communication and Critiquing of Research Findings
 - Descriptive and Inferential Statistics
 - Measures of Relationship and Designs
 - Tests of Significance
 - Application of Statistics in Health
 - Use of Computers for Data Analysis
- *Clinical specialty (all five core specialties: medical surgical, pediatric Nursing, mental health nursing, OBG and community Health Nursing) including advanced nsg.*

7. Nutrition

- *Food Science & Analysis*
 - Cereals, millets, pulses, vegetables, fruits, milk, eggs, meat & other animal food and oilseeds.
 - Composition and nutritive value of these food groups.
 - Processing, preservation and storage of these food groups.
 - Principles and methods of proximate analysis.
- *Food Microbiology & Food Safety*
 - Food Food-borne diseases and their prevention.
 - Food spoilage
 - Food packaging, packaging material, labeling, food laws and regulations.
 - International food standards, codex alimentarius and FSSAI.
 - Food additives & Food adulterants.
 - Natural toxicants and pesticide residues.
 - Food safety hazards and risks.
 - HACCP.
 - Food security.
- *Nutritional Biochemistry, Nutrient Requirements & Dietary Guidelines*
 - Carbohydrates, proteins, lipids, vitamins and minerals.
 - Metabolism of these macronutrients and micronutrients and their functions.
 - Fiber, glycemic index and load.
 - Water and electrolyte balance.
 - Enzymes and hormones.
 - Nutrient and drug interactions.
 - ICMR-NIN, Recommended Dietary Allowances (RDA 2020).
 - ICMR-NIN, Dietary guidelines.
- *Clinical Therapeutic Nutrition & Food Service Management*
 - Nutrition during lifecycle.
 - Clinical signs and symptoms of macronutrient and micronutrient deficiencies and their sources.
 - Nutritional Risk Screening (NRS) and Subjective Global Assessment (SGA).
 - Therapeutic modification of normal diets and their use in treating communicable and non-communicable diseases.
 - Nutrition in geriatrics.
 - Menu planning for industrial/institutional canteen, hospital canteen, snack bar, residential hostel, fast food outlets and cafeteria.
- *Community Nutrition*
 - Major public health nutrition programs in India.
 - Nutritional problems of vulnerable segments.
 - Assessment of community nutritional status – ABCD approach.
 - Indicators/parameters and standards used for assessment of different methods.

- Infant and child feeding practices (IYCF).
- Nutrition in emergencies and disasters.

8. Pharmacology

• *Pharmaceutics*

- Pre formulation Studies: solid-state properties, partition coefficient, solubility, dissolution of drug substance, crystal form and stability, compatibility tests.
- Optimization techniques in pharmaceutics, formulation and processing
- Validation: Regulatory basis, validation of sterile products, solid dosage forms, process validation and non-sterile analytical method validation.
- Advances of pharmacotherapeutics in drug delivery.
- Polymers and their applications: Polymer classification, physico-chemical properties, blend of polymer and properties of blends, mechanism of drug release from polymers, applications of polymers in controlled release and in other formulations.
- Fundamental, design and fabrication of controlled release drug delivery system: factor influencing the design and performance of sustained/controlled drug delivery system, drug targeting, pharmacokinetics/ pharmacodynamics basis of controlled drug delivery system, regulatory requirements.
- Biochemical and molecular biology approaches in controlled drug delivery: Novel chemical approaches for sustained drug delivery system, design and fabrication of oral controlled release drug delivery system, parenteral products, implantable systems, transdermal patches, ocular, intravaginal, intrauterine system, cardiovascular drug delivery system-coated balloon catheters and coated stents.
- Intelligent drug delivery system: Micro particulate drug carriers, liposome, microspheres, selective endocytosis of macromolecular drug carriers, antibodies for drug delivery.
- Nano pharmaceuticals- Method of preparation, characterization and application of nano emulsion, nano suspension, solid lipid nanoparticles (SLN) and self-nanoemulsifying drug delivery (SNEDDS)

• *Pharmacology*

- Basic Principles in Drug Therapy: Drug-receptor interaction, Cellular Transduction Mechanisms, Adverse Drug Reactions, Drug therapy in elderly, Drug Therapy during pregnancy and lactation, Gene therapy, Chiral Pharmacology.
- Drugs acting on the Autonomic Nervous System and Central Nervous System: Neurotransmitter in ANS and CNS, Muscarinic Receptor (Agonists and Antagonists), Cholinesterase Inhibitors, Agents acting at the skeletal muscle and autonomic ganglia, Sympathomimetic Drugs and Adrenergic receptor antagonists. Drugs in the treatment of Anxiety, Depression, Psychosis, Mania, Epilepsy and Parkinsonism, Opioid analgesics and antagonists, Drug addiction and drug abuse.
- Drugs effecting Cardiovascular function and Digestive System: Diuretics, Congestive heart failure and its treatment, Pharmacotherapy of hypertension, Drugs used in the treatment of coronary artery diseases, Arrhythmia and its management, Drugs used in the treatment of Hyperlipoproteinemias, Anticoagulant, thrombolytic and antiplatelet drugs.
- Pharmacotherapy of peptic ulcer, ulcerative colitis, Irritable Bowel Syndrome, Diarrhoea, Constipation, Emetics & antiemetics.
- Therapy of Infectious diseases and Endocrinology: General Principles, Antibacterial drugs (Sulphonamides, Penicillins, Cephalosporins, Tetracyclines, Chloramphenicol, Aminoglycosides, Quinolones), Drugs used in the chemotherapy of Protozoal infections, Leprosy, Tuberculosis, Fungal infections, Viral infections, Drugs used in the Chemotherapy of Neoplastic diseases and Immuno modulators. Hormones of anterior and posterior pituitary

- gland. Insulin, oral hypoglycemic agents, Adrenocorticotrophic hormones, Anti thyroid drugs, Androgens and Anabolics. Agents affecting Calcification and bone turnover.
- Screening methods in Pharmacology and Toxicology: Basic principles, methods of bioassay and important bioassay of drugs, Pharmacological Screening Techniques to evaluate drugs belonging to following categories:
 - Analgesics, anti-inflammatory agents and local anaesthetics.
 - Antihypertensives, antianginals, diuretic and saluretic activity.
 - Antiulcer drugs, antidiabetics, hepato protective, nephron protective and anti obesity activity.
 - Effects on behavior and muscle coordination, antiepileptics, anti-Parkinsonism, drug effects on learning and memory.
 - Anticancer activity (*In vitro* and *In vivo*)
 - Evaluation of antioxidants (*In vitro* and *In vivo*)
 - Drug Toxicity, Safety Evaluation of new drugs. Regulations for Laboratory animal care and ethical requirements.
 - *Pharmaceutical chemistry*
 - Physicochemical properties in relation to drug action; metabolic transformation of drugs and its role in development of new drug molecules; metabolic antagonism.
 - Stereo chemical aspects of drug receptor interactions and mechanism of drug interaction. Isosterism and bio isosterism as guides to structural variations; Concepts of conformational analysis and its role in design and development of new drug molecules.
 - Principle of drug design: Analogue synthesis versus rational design; discovery of lead compounds, Pharmacophoric identification, Prodrugs and soft drug.
 - QSAR and introduction to molecular modeling.
 - Following name reactions and their application in the synthesis of some medicinal agents: Claisen- Schmidt reaction, Perkins reaction, Friedal Craft Reaction, Aldol condensation, Mannich reactions, Beckmann's rearrangement, Wagner-Meerwein rearrangement, Wittig Reaction, Oppenaur oxidation, (Meervein- pondroff-verley) M.P.V. Reduction.
 - Cardiovascular Agents: Anti-hypertensive agents, antiarrhythmic agents, antihyper lipidemic agents, antianginal agents.
 - Psychopharmacological agents: Antipsychotic Agents: Introduction, Biochemical basis of mental disorders, Development of antipsychotic agents: Phenothiazines, Butyrophenones: Atypical antipsychotic agents. Antidepressant Drugs: Introduction, Development of tricyclic antidepressants, Monoamine oxidase inhibitors; Selective serotonin-reuptake inhibitors; Atypical antidepressants, Lithium salts. Antianxiety Agents: Introduction, medicinal Chemistry of benzodiazepines; SAR of benzodiazepine derivatives, medicinal chemistry of non-benzodiazepines; serotonin-reuptake inhibitors, development of meprobamate and analogues; atypical anxiolytic agents.
 - Chemotherapy: Antiviral agents including the development in chemotherapy of AIDS.
 - Drugs for neoplastic diseases, Drug affecting immune responses, Radioprotective drugs.
 - Analgesics and anti-inflammatory agents, Prostaglandins, Non-steroidal drugs, Steroidal drugs, Endorphins, Diuretic agents.
 - Chemistry of cell membrane; Signal transduction and G. Proteins.
 - *Pharmacognosy & phytochemistry*
 - Plant Tissue Culture techniques and its application in relation to Phytopharmaceuticals: Introduction, techniques of initiation and maintenance of various types of cultures. Immobilized cell techniques, Biotransformation studies including recent developments in production of biological active constituents in static, suspension and hairy root cultures, Bioreactors for production of biologically active constituents and other applications of plant tissue culture techniques.
 - General methods of phytochemical & biological screening, isolation and purification of plant constituents.

- Natural sources, extraction, purification, isolation and characterization of the following Phytopharmaceuticals.
- Alkaloids: Morphine, Quinine, reserpine
- Glycosides/flavanoids: Sennosides, Glycyrrhizine, Asiaticosides, Diosgenin, Solarodine, Rutin, quercitin
- Industrially important volatile oils: occurrence, chemistry, ontogenic variation and trade.
- Methods of investigation of biogenetic pathways.
- Biogenetic pathways for the production of phytopharmaceuticals, such as Alkylamine (Ephedra), Pyridine, Piperidine (Lobelia), Tropane (Belladonna), Quinoline (Cinchona), Isoquinoline (Opium), Diterpene (Cannabinoids), Indole (Ergot), Cardiac glycosides, Coumarins and Flavones.

9. Public Health

- *Epidemiology:*
 - Basic epidemiological measures
 - Study designs in epidemiology (Observational/Experimental)
 - Validity of epidemiologic studies
- *Biostatistics:*
 - Probability and distributions
 - Descriptive statistics
 - Inferential statistics
- *Research methods in public health:*
 - Quantitative research methods
 - Qualitative research methods
 - Study design and sampling techniques
- *Disease epidemiology:*
 - Burden of infectious diseases and non-communicable diseases
 - Transmission dynamics and risk factors
 - Control and prevention strategies
 - Disease surveillance and outbreak investigation
 - Contemporary issues
- *Social and behavioural sciences in public health:*
 - Social determinants of health
 - Health behaviour theories
 - Community interventions and health promotion
 - Contemporary issues
- *Health policy and management:*
 - Health systems and policy analysis
 - Healthcare financing
 - Healthcare quality and management
 - Economic evaluation in public health
 - Contemporary issues
- *Public health programs:*
 - National health programs
 - Planning and evaluation
 - Health information systems
 - Health promotion/communication
 - Contemporary issues
- *Environmental and occupational health:*
 - Environmental risk factors and health effects
 - Environmental policy and regulation
 - Workplace hazards and occupational diseases
 - Occupational health policies and regulations
 - Contemporary issues
- *Public health nutrition:*
 - Malnutrition

- Anthropometric indices
- Contemporary issues
- *Ethics and laws in public health:*
 - Ethical considerations in research
 - Ethical considerations in public health practice
 - Public health laws and regulations
 - Contemporary issues
- Consumer behaviour, Demand and supply of healthcare and elasticities, Grossman model and health disparities
- Features of health care markets – imperfections – Government interventions
- Efficiency and equity in health care
- Building blocks of health system, health care financing and insurance
- Economic evaluation methods (cost minimisation, cost-effectiveness, and cost-benefit analysis)
- Indian Health system- Reforms and challenges

10. Social Behavioral Sciences

- *Introduction:*
 - Language behaviour as human instinct.
 - Core properties of human communication and behaviour vs. animal communication and animal behaviour.
- *Brain and Mind in Human Communication and Behaviour:*
 - Structure of the brain.
 - Lateralization and localization hypothesis.
 - Linguistic and cognitive functions' localization.
- *Development of Cognitive Competence:*
 - Understanding cognitive competence, capacity, and potential.
 - Development in human babies: Acquisition process.
- *Social, Emotional, and Linguistic Cognition:*
 - Definitions and significance.
 - Theories of early development of social-emotional-linguistic behaviour and cognition.
- *Theoretical Perspectives: Behaviourism vs Cognitivism:*
 - Behaviourism: B.F. Skinner's Verbal Behaviour as representative of the behaviouristic paradigm.
 - Cognitivism: Noam Chomsky's review of Verbal Behaviour (1959) and mid-century Cognitive revolution; the new Chomskyan Cognitive paradigm.
 - Innate Hypothesis and Language Development: The role of innate factors in language development.
 - Critical Period Hypothesis: Language, Mind, and Brain development.
- *Research Methodology for Social and Behavioral Sciences:*
 - Theories, models, and methods for studying human behaviour, language, and cognition.
 - Qualitative and Quantitative approaches.
 - Inductive vs Deductive reasoning.
 - Empirical vs Subjective/interpretative studies.
 - Eclectic interdisciplinary approaches.
- *Ethical Issues in Social, Behavioral, and Cognitive Research:*
 - Concerns and considerations in research involving human participants.

11. Veterinary Science/Medicine

- *Fundamentals of Veterinary Sciences:*
 - Introduction to veterinary science
 - Basic anatomy and physiology of domestic animals
 - Principles of animal nutrition
 - Introduction to veterinary microbiology and immunology
 - Animal Husbandry and Management

- *Principles of livestock management:*
 - Breeds and breeding techniques
 - Livestock housing and welfare
 - Introduction to veterinary extension education
 - Veterinary Pathology
- *General pathology:*
 - Systemic pathology
 - Pathogenesis of common diseases in animals
 - Diagnostic techniques in veterinary pathology
 - Veterinary Pharmacology and Toxicology
- *Principles of pharmacology:*
 - Drug administration and dosage calculations
 - Veterinary pharmacokinetics and pharmacodynamics
 - Toxicology and drug interactions
 - Veterinary Parasitology
- *Identification and classification of animal parasites:*
 - Parasitic diseases of domestic animals
 - Diagnosis and control of parasitic infections
 - Zoonotic aspects of parasitology
 - Veterinary Epidemiology
- *Principles of veterinary epidemiology:*
 - Disease surveillance and monitoring
 - Epidemiological study designs
 - Outbreak investigation and control measures
- *Veterinary Medicine:*
 - Principles of veterinary medicine
 - Infectious and non-infectious diseases of animals
 - Clinical diagnosis and treatment strategies
 - Preventive medicine and herd health management
 - Veterinary Surgery and Anesthesiology
- *Principles of veterinary surgery:*
 - Surgical techniques in domestic animals
 - Anesthesia protocols and monitoring
 - Post-operative care and complications



National Testing Agency

(An autonomous organization under the Department of Higher Education, Ministry of Education, Government of India)

Help Line: For Technical support, contact following during working days between 10.00 a.m. and 5.00 p.m.

E-mail ID- bret@nta.ac.in

Website- <https://exams.nta.ac.in/>, www.nta.ac.in