THE INSTITUTE OF MATHEMATICAL SCIENCES

(An Autonomous Institution under Dept. of Atomic Energy, Govt. of India)

4th Cross Road, CIT Campus, Taramani, Chennai - 600 113

Advt No. 04-R/IMSc/2022 dtd 14.3.2022

The Institute of Mathematical Sciences (IMSc), Chennai is a National Institute of higher learning which fosters high quality fundamental research in frontier disciplines of Mathematical Sciences. IMSc has intensive teaching programme for award of M.Sc (by Research) and Ph.D. Degree.

Applications are invited for filling up the following Project positions under the new Scientific / Academic Apex Projects of the Institute on consolidated salary from the eligible candidates who fulfill requisite qualifications/ specifications mentioned therein. The positions indicated under the projects concerned, are proposed to be filled **purely on contract basis only initially for a period of one year** from the date of appointment but extendable subject to performance & subject to approval of the competent authority up to 3 years & not beyond and there is no scope of continuation / regularization / absorption under any circumstances.

<u>A]</u>	PROJECT I	POSITIO	NS:						
SI No	Title of the Apex Project ⋐ Project	Name of the Project Positions	Number of positions	Selection Method	Minimum Educational Qualifications & Experience	Consolidated Salary (all inclusive &no other allowances are allowed) p.m	Unique email id / web form to which soft copy of the application to be sent/ submitted for each position separately (Only through email &no hard copies of applications are considered)	Last date for submission of applications for each position through email to unique email id / web form shown under col. (8)	Date of written test / interview
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 ADV	Computational	<u>RCH AND E</u> Project	01	IN MATHEMA Selection will	<u>TICAL SCIENCES AT IMSc</u>	Rs. 39,000/-	https://forms.gle/fGEuud4XqrPTWu2KA	25.3.2022	The date of the test and
	Biology at IMSc	Assistant		be via a written test, followed the same day by an interview of the best performing candidates.	Minimum qualifications: MSc/BE/BTech in mathematical/physical/bioscience/engineering Essential skills: Knowledge of differential equations, basic data analysis, numerical methods and computer programming (to be tested through written test & interview) Desirable skills: Experience in simulating large- scale dynamical systems (especially in parallel computing environment) Overview of project: Mathematical understanding of human physiology with focus on (i) mechanism underpinning onset of muscle contractions in the pregnant uterus OR (ii) the development of immune response from infant to adult.	Rs. 44,000/- for candidates with two or more years of research experience			interview will be communicated to qualifying candidates at a later date
		Project Assistant	01	Selection will be via a written test,	Minimum qualifications: Bachelors Degree in Science disciplines or Engineering disciplines	Rs. 26,500/-	https://forms.gle/gFKrvfa65Scsmjnb7	25.3.2022	The date of the test and interview will be communicated to

			followed the same day by an interview of the best performing candidates.	 Essential skills: The candidate should have familiarity with computer programming, basic statistics, and machine learning techniques. Desirable skills: Expertise in R or Python programming languages will be a significant plus. Overview of project: Identification of gut microbial patterns associated with non-communicable and lifestyle-related diseases using tools from machine learning and statistics. 				qualifying candidates at a later date
	Project Assistant	02	Shortlisting followed by Online Interview	Minimum Qualifications: M. Sc./ M.Tech in Life Science or Bioinformatics or Computational Biology or Computer Science or allied disciplines from a reputed university or institute.	Rs.39,000/-	https://forms.gle/63nuDDZJvHeRp2KXA	25.3.2022 Shortlisted candidates will be intimated by: 01.4.2022	6.4.2022
				B.Sc. / B.Tech degree in Life Science or Bioinformatics or Computational Biology or Computer Science or allied disciplines from a reputed university or institute. Desirable : Knowledge of network science and machine learning, or metabolic network reconstruction with microbiology and biochemistry expertise is desirable. Prior research experience is highly desirable.	Rs. 26,500/-	https://forms.gle/63nuDDZJvHeRp2KXA	25.3.2022 Shortlisted candidates will be intimated by: 01.4.2022	6.4.2022
	Project Assistant	01	Selection will be via a written test, followed the same day by an interview of the best performing candidates.	Minimum qualification:MSc/BTech/BE/BS (4year) or equivalent in any area of science orengineeringEssential skills:familiarity with pythonprogramming, familiarity with basicbioinformatic data and file formatsDesirable:experience with bioinformatic studiesin python, familiarity with NGS assays such asChIP-seq, RNA-seq, Hi-C etcProject overview:studying the role of chromatinand chromatin-modelling factors intranscriptional regulation. This will involveintegrating diversesources of data, on chromatin conformation,DNA-protein binding, etc, from public databases.	Rs. 39,000/- Rs. 44,000/- for candidates with two or more years of research experience	https://forms.gle/EzzqgEcYT2ra6PoX9	25.3.2022	The date of the test and interview will be communicated to qualifying candidates at a later date

2	Study of Radio Pulsars to Probe Fundamental Physics	Project Assistant	01	Screening will be done based on the application material (including the referee's letter). Shortlisted candidates will be interviewed online (via zoom) The selected candidate will be either in category (i) or in category (ii). Candidates will be asked questions at the level appropriate for their educational qualifications.	Essential Qualification : i) B.Sc./ B.E/B.Tech / B.S. degree in Physics, Physical Sciences, or Engineering Subjets (with some physics course in the curriculum) 	Rs. 26,500/- Rs.39,000/-	neutron_star@imsc. res.in	25.3.2022	A day to be determined later in the period of 04/April/2022 to 15/April/2022 (exact date and time will be informed to shortlisted candidates)"
		Research Associate- I	01	Screening will be done based on the application material (including the referee's letter). Shortlisted candidates will be interviewed online (via zoom)	 Essential Qualification : PhD in astrophysics /astronomy, preferably related to neutron stars/pulsars/gravitational waves/radio astronomy. Candidate must request at least one referee to send a referral letter directly to the unique email id. Specific Requirement : Strong programming skills (in python) and proficiency in Linux operating system are mandatory Desirable : Interest in observations, data analysis and statistical interpretation will be preferred. 	Rs. 59,500/-	neutron_star@imsc. <u>res.in</u>	25.3.2022	A day to be determined later in the period of 04/April/2022 to 15/April/2022 (exact date and time will be informed to shortlisted candidates)"
3	Computational Systems Toxicology : Application of Networking Biology towards Health Risk Assessment of Environmental Chemicals	Project Assistant	01	Shortlisting of candidates followed by Online Interview	 Essential Qualification : M. Sc. or M. Tech. degree in Life Science or Bio- informatics or Computational Biology or Allied Areas from a reputed university or institute. Desirable: Previous research experience and published work in reputed international journals . Knowledge in manual curation of biological data sets, toxicology and/or network science. 	Rs. 39,000/-	tox1@imsc.res.in	25.3.2022 Shortlisted candidates will be intimated by: 28.3.2022	31.3.2022
		Project Assistant	01		Essential Qualification : B. Tech. Degree in Life Science or Bio-informatics or Computational Biology or Allied Areas from a reputed	Rs. 26,500/-	tox1@imsc.res.in	25.3.2022 Shortlisted candidates will	31.3.2022

					university or institute. Desirable : Knowledge in manual curation of biological data sets, toxicology and/or network science.			be intimated by: 28.3.2022	
4	IMSc Centre for Disease Modeling	Project Assistant (Programmer)	01	via a written test, followed the same day by an interview of the	Essential Qualification : MSc/MTech/BE/BTech/equivalent in any field of science, mathematics or engineering Familiarity with scientific programming, including at least one language out of C/C++, Python, R, Fortran, Julia Desirable: Familiarity with epidemiological models or agent- based modelling	Rs. 39,000/-	https://docs.google.c om/forms/d/e/1FAIp QLSed4HDhC4bp_ ape8kyxvtrKn2guj5 a60kqEc6DPy2Ds2 E7Ngg/viewform? usp=sf_link	25.3.2022	The date of the test and interview will be communicated to qualifying candidates at a later date
5	Centre of Excellence in Complex Systems and Data Science	Research Associate- I	01	short-listed candidates	Essential Qualification : Ph. D. in Physical / Mathematical / Computational Sciences. Candidates having research experience in data science and / or machine learning will be given preference	Rs. 59,500/-	https://docs.google.c om/forms/d/e/1FAIp QLSeezsu5GIIqYvH REIcVqWa2QNMS Bf915QEZ KaLzcxwZ0Tly1w/vi ewform	25.3.2022	28.3.2022
		Project Assistant	02	interviews for short-listed candidates	Essential Qualification : B.E./B.Tech./M.Sc from a reputed institution with a good background in physical / mathematical / biological sciences, have some experience in using analytical & computational techniques.	Rs. 39,000/- Rs. 44,000/- for candidates with two or more years of research experience	https://docs.google.c om/forms/d/e/1FAIp QLSc94ge9Z3sZkyg HM8ZJdo0YknPCA HAOmL0i81LmQ44 _jRGs7Q/viewform	25.3.2022	28.3.2022
		Project Assistant (Admn)	01	on the same day. (or) Direct interview in case no. of candidates appeared for written test is less than five	 Essential Qualification : Bachelor Degree from a recognised University with first class, 60% marks with good knowledge of MS Office tools, drafting of letters in English, good command over English. Essential experience: Minimum hands on experience of 3 years of day to day office work, drafting official letters in a reputed academic / scientific organisation. Candidates should be proficient in MS Office and related computer applications. Project Monitoring and co-ordination. Desirable experience: Good knowledge of computer operations. Command on Internet and Website updation, File management system, Office Procedures including experience in handling work in connection with meetings & conferences and routine administrative support towards arranging the logistics for academic / scientific events of the Institute. Experience with content writing and Science communication 	Rs. 26,500/-	paadmin@imsc.res.in	25.3.2022	Will be intimated separately

6	Centre for Science Communication and Outreach at IMSc	Project Assistant	01	Shortlisting of candidates followed by Online Interview	Essential Qualification : M. Sc. or M. Tech. degree in any branch of Science, Engineering or Mathematics from a reputed university or Institute. Desirable : Prior experience in Science Communication and / or mathematics education is desirable.	Rs. 39,000/-	<u>sc_2022@imsc.res.i</u> n	31.3.2022 Shortlisted candidates will be intimated by 6.4.2022	12.4.2022
<u>AD'</u> 7	VANCED RESEA Compilation, curation and exploration of the Phytochemicals space of Indian medicinal plants	RCH AND EDU Project Assistant	01	Shortlisting of candidates followed by	Essential Qualification : B. Tech. degree in Bioinformatics or Biotechnology or Computational Biology or allied disciplines from a reputed university or institute. Desirable : Knowledge of manual curation of biological data relevant to Indian medicinal plants, secondary metabolites and natural products.	Rs. 26,500/-	phyt1@imsc.res.in	25.3.2022 Shortlisted candidates will be intimated by: 28.3.2022	31.3.2022
		Project Assistant	01	Online Interview	Essential Qualification : M. Sc. or M. Tech. degree in Bioinformatics or Computational Biology from a reputed university or institute. Essential Experience : Research experience of more than 1 year after completing M. Sc. degree, and Published at least 1 research paper in a reputed international journal. Desirable : Knowledge of manual curation of biological data relevant to Indian medicinal plants, secondary metabolites and natural products.	Rs. 39,000/-	phyt1@imsc.res.in	25.3.2022 Shortlisted candidates will be intimated by: 28.3.2022	31.3.2022
8	Computational Epigraphy Lab	Research Associate - II	01	Shortlisting of candidates followed by online interview	Essential Qualification : Ph.D in Mathematical Sciences / Computer Science with at least 1 year research experience in computational linguistics.	Rs. 62,000/-	https://docs.google.c om/forms/d/e/1FAIp QLSfdSw7dOsk2t4q pBzKpERu0_ZtzVq SeNiai CxQbV0dBgl40PA/ viewform	25.3.2022	29.3.22
		Project Assistant	01	Shortlisting of candidates followed by online interview	Essential Qualification : M.A / M.Phil in ancient history/archaeology from a reputedinstitution with a good background in epigraphy. Desirable : Ability to use computational techniques.	Rs. 39,000/- Rs. 44,000/- for candidates with two or more years of research experience	https://docs.google.c om/forms/d/e/1FAIp QLSffadxFqhaDw5 xjZGQFhCdPBvLH Y62lqTzU h2efbMyTh_B2kA/v iewform	25.3.2022	29.3.22
9	Modelling of Soft Materials	Research Associate	01	Shortlisting of candidates followed by interview	Essential Qualification : Ph.D degree or submitted his / her doctoral thesis in Physics and at least 2 publications in indexed international journals.	Rs. 59,500/- for Ph.d Degree Rs. 44,000/- for those who have submitted /	<u>vani@imsc.res.in</u>	25.3.2022	The shortlisted candidates will be informed by email

					Desirable : The Selected candidate will work on a project whose goal is to do modelling of polymers. The candidate should necessarily have excellent command over statistical mechanics, molecular dynamics programming. A background of research in biological physics is strongly desirable.	defended their thesis.			
10	Physics of debris covered Glaciers	Research Associate	01	Shortlisting of candidates followed by interview	<i>Minimum qualifications</i> : Ph.D degree or submitted his / her doctoral thesis in an Engineering subject or Physics and at least 2 publications in indexed international journals. <i>Desirable :</i> The selected candidate will work on a project whose goal is to do modelling and experiments of ice rheology. The candidate should necessarily have excellent command over continuum mechanics. C programming and MATLAB. A background of research in composite materials is strongly desirable.	Rs. 59,500/- for Ph.d Degree Rs. 44,000/- for those who have submitted / defended their thesis.	<u>rrajesh@imsc.res.in</u>	8.4.2022	The shortlisted candidates will be informed by email
11	Quantum materials : Geometry, topology and strong correlations	Project Assistant	02	Shortlisting of candidates followed by Online Interview	 Essential Qualification : M.Sc. degree in Physics or Allied areas from a reputed university or institute. Desirable : Qualification of CSIR-UGC JRF or GATE or JEST examination is desirable. Essential Experience : A prerequisite for this position is basic understanding of many-body quantum mechanics and familiarity with density functional theory software. Keen research interest and basic knowledge of condensed matter physics is essential. 	Rs. 39,000/- Rs. 44,000/- for candidates with two or more years of experience	qgml@imsc.res.in	25.3.22	29.3.22.
12	Management of IMSc IT Infrastructure Computing Media, Web	Technical Assistant (HPC)	01	Written test followed by interview	 Essential Qualification : Master Degree in Science / Bachelor degree in Engineering (preferably Computer Science, ECE, EEE, IT) from a reputed College / Institution Essential experience : Minimum 4 years as described for the position. Specific experience : Linux NW Server related: Shell Scripting under LINUX O/S; Segmenting of IPv4 networks; configuring & maintaining NIS / LDAP, DNS, DHCP, IPTABLES, SMTP, etc., Generating email alerts from server / Cluster H/Ws, Environments; Trouble shooting of server/cluster H/Ws, O/Ss, & S/Ws problems and fixing of the same; Interfacing of high speed networks using Ethernet, IB, Omnipath, etc., and Bonding / Cascading of interfaces Installation & Maintenance of HA servers, Virtual 	Rs. 44,000/-	https://www.imsc.re s.in/apply_tahpc	25.3.2022	To be informed to candidates after shortlisting of valid applications (as per advertised requirements)

	Technical	01	Written test	servers, etc.; <i>Cluster related:</i> Cluster Topology, Installation, Configuration (Linux, Warwulf/ Rocks / xCat, Puppet, Slurm/ PBSPro) and Updates, performance tune of Clusters; Cluster Job – Management, Monitor, Schedule Cluster application monitoring packaging / version controls; running benchmarks; virtualisation of servers (LXC, KVM, DOCKER); Day-to-day monitoring of data-center UPS, AC, various Sensors, BMS, etc. <i>Desirable Experiences :</i> Completed I.T. courses / Certifications covering Linux/Unix O/S/ APACHE/ PHP/PyThon/HPC/etc., Experience in programming using C, MySQL, Perl, PHP, Python, Shell Scripting under LINUX O/S. Work exposure in ERP / Open ERP and having background of accounting are added advantage. Candidates possess work experience in maintaining LINUX / UNIX systems in the LAN environment are preferred. Attended workshops on HPC. Cluster design, install, administration and maintenance. Parallel shell scripts, IP v4 sub-netting, booting/halting of multi-nodes, IPMI/KVM console operations; Exposure in Computational Sciences, MPI/GPU programming etc. Cluster Storage – I/O nodes with Parallel/ Lustre File System, MDS, MDT etc., Disk array/ Enclosures, Configured with Fat-Tree & multi-path topology, Multi-volume configuration, Volumes mounted on Compute /Master cluster nodes; Monitoring the cluster usage per user, report generation, etc., Completed IT Projects including design/ implementation. Exposure of handling IT projects in the LINUX environments is added advantage.	Rs. 26,500/-	https://www.imsc.re	25.3.2022	To be informed to candidates after
	Assistant (Systems)		followed by interview	Bachelor Degree in Science / Computer Applications / Engineering (Computer Science / ECE/ EEE/ IT) from a reputed College / Institution /University with minimum of 60% marks aggregate of all years/semesters.		<u>s.in/apply_ta</u>		shortlisting of valid applications (as per advertised requirements)

					 Desirable : Completed I.T. courses covering Linux/Unix O/S. Experience in programming using C, MySQL, Perl, PHP, Python, Shell Scripting under LINUX O/S are added advantage. Candidates possess at-least one year work experience in maintaining LINUX/UNIX systems in the LAN environment are preferred. Work exposure in ERP / OpenERP are added advantage. •day-to-day maintenance of computer system components, printers, scanners, modems, switches, WiFi, O/S installation, configuration •customization of desktops, first level of trouble shooting of system H/Ws, O/Ss and S/W problems and fixing of the same, •setting up for multimedia projection, Videoconferencing, web-casting, etc., •Monitoring the quality of LAN/Internet bandwidth in liaison with System Administrators of the Institute. 				
13	Design and Development of Integrated Online Information Resource Management System, Library, Alumni, Annual Report & Publications	Project Technical Assistant (Computer)	01	Screening test on required skill set to shortlist the candidates followed by a personal interview.	 Essential Qualification : Bachelors Degree in Science / Computer Applications / Bachelors Degree in Engineering (Computer Science / ECE/ EEE/ IT) M.Sc / M.Tech (computer science) / Computer Applications / Engineering (Computer Science / ECE / EEE/ IT) from a reputed and recognised College with minimum of 60% marks in aggregate of all years / semesters. The position is expected to work on the IMSc Annual Report, IMSc Alumni and Library Management Systems which involves: a) Developing a new annual report system based on Linux, MySql/MariaDB, Python and LaTeX b) Developing a new system with interface to capture alumni data such as profile with publications and employment history etc c)Assisting in design, development of new features in the library management and archives systems. Specific Requirement : Proficiency in developing software in linux/unix OS using MySQL, PHP, Python Desirable : a) Completed I.T. courses covering HTML/PHP, Python, MySQL, LaTeX. 	Rs. 26,500/- Rs. 39,000/- Rs. 44,000/- for candidates with two or more years of experience	https://www.imsc.re s.in/psa-systems/	25.3.2022	Date of interview will be intimated later

		b) Experience in similar academic & research organisation				
Technical Assistant (Library)	<i>01</i> Screening test on required sk sets to shortlis the candidates and personnel interview for final selection	class. Essential Experience:	Rs.44,000/-	https://www.imsc.re s.in/psa-lib/	25.3.2022	Date of interview will be intimated later

<u>B</u> AGE LIMIT : The Candidates should be less than 40 years of age as on the last date of receipt of applications.

<u>C] GENERAL INFORMATION</u> :

Interested candidates are requested to send a brief e-mail by attaching therewith their latest resume to <u>unique e-mail id/fill in the google form</u> as mentioned at <u>Col (8)</u> against each Project position in the above table **on or before 1700 hrs on the date mentioned at Col (9)** against each project position mentioning the position details in the **subject** of the e-mail as "Application for the Project Position at Sl.No. () (Name of the Project Position in Capital Letters) of Advt. No. 04-R/IMSc/2022 dtd 14.3.2022"

<u>Note</u> :

- 1. Mails sent / web form submitted after the above time & date will not be considered under any circumstances.
- 2. Indicating subject in the e-mail as explained above under General Information of the Project Position is very important.
- 3. Depending on the number of candidates who respond to this advertisement, the Institute will decide whether to conduct a brief objective type written test of about one and half hours or to go with direct interview.
- 4. Only those candidates who are meeting the minimum educational qualifications & experience mentioned in the advertisement will be eligible to appear for Written test / interview. Hence screened list of candidates will be displayed by us after verifying their candidature on the "**Opportunities page**" of the Institute's website [www.imsc.res.in] immediately after the last date but within two working days. Therefore, short listed candidates whose names are displayed by us on Opportunities page only need to come and appear for Written Test / Interview as per the Project position wise date already fixed by us as shown at Column (10) against each Project position in the above Table.
- 5. The candidates who have applied for the Project positions against this advertisement and whose names are shortlisted for written test/ interview and displayed by us on the opportunities page of IMSc website will only be allowed to appear for Written Test / Interview and they should bring one copy of valid proof of ID card with original (like AADHAR/Driving License/ Passport / VoterID).
- 6. Except displaying the shortlisted candidates on our website, no separate call letter / confirmation requesting the candidates to attend for Written Test (or) Interview will be sent by this Institute to those candidates who have submitted their applications in response to this advertisement.

7. The candidates who have applied for the Project positions against this advertisement and whose names are displayed in the screened list should bring one copy of e-mail sent by them with photo pasted on it with clear header showing time and date of e-mail & Resume already sent by them at the time of reporting for Written Test/Interview. The candidates without e-mail or carrying the copies of e-mails without header or copy of e-mail sent after the last time and date (as indicated under column (9)) will not be allowed to appear for Written Test or Interview under any circumstances.

IMPORTANT:

- 1. The candidates submitting e-mails / web forms for the above positions are requested to note the day and date of written test followed by interview shown at column (10) of the above table and visit the IMSc web-site periodically for any updates.
- 2. The candidates should on their own attend for written test on the date mentioned, where necessary.
- 3. All those candidates who have been short listed for the Project positions are requested to report sharp at the designated time on the dates of written test / interview as indicated against each Project positions at column (10) at IMSc and sign the attendance statement without fail. The candidates also should bring along with them all original certificates and one set of copies of all certificates as to proof of age, educational qualification, and experience etc.
- 4. The list of successful candidates of the written test wherever conducted will be displayed on the notice board on the same day for which venue location will be announced at the time of written test. Only those candidates who clear the written test are required to appear for Interview time for which will be announced at the written test venue. Wherever only interview is prescribed the candidates will be intimated about the mode of interview.
- 5. Hard copies of applications/ resume received by hand/ post/ courier will not be considered under any circumstances.
- 6. E-mail received by us without attaching resume will not be considered under any circumstances.

General Conditions:

- 1. The prescribed qualifications are minimum and mere possession of the same does not entitle the candidate to be considered for the advertised position. The decision of the Director of this Institute in all matters will be final and no enquiry or correspondence will be entertained in this matter.
- 2. Only outstation candidates belonging to SC/ ST appearing for the written test and selected for interview only will be reimbursed to and fro second class railway fare/ bus fare or actual fare incurred which ever is less by the shortest route form the station of residence/ work place to Chennai & back on production of tickets.
- 3. Please visit <u>"Opportunities Page</u>" of our website <u>www.imsc.res.in</u> for full details of advertisement, screened list of candidates and visit "Getting here" page to know location information of our Institute.

Vinayalatha & REGISTRAR 14.3.2022