

## GOVERNMENT OF INDIA, DEPARTMENT OF SPACE INDIAN SPACE RESEARCH ORGANISATION ISRO SATELLITE CENTRE BENGALURU

Last date for submission of on-line application 04.03.2017

Advt. No.ISAC:01:2017 February 18, 2017

## Recruitment of Scientists/Engineers 'SC' with Pay level 10 in the Pay Matrix as per 7th Pay Commission

ISRO Satellite Centre (ISAC) is the lead centre of ISRO for satellite technology. ISAC is responsible for conceptualization, design, development, fabrication, testing, launch and in-orbit management of spacecraft. As a sequel to its mandate, the centre is engaged in development of cutting edge technologies of relevance to its activities and infrastructure set-up for design, development, fabrication and testing of spacecraft. Over a period of four decades, ISAC has successfully established Indian National Satellite (INSAT) system, which is one of the largest domestic communication satellite systems in Asia-Pacific region and Indian Remote Sensing (IRS) system which is one of the largest constellations of earth observation satellites in operation. NAVigation with Indian Constellation (NAVIC) an independent Indian Satellite based regional positioning system with a constellation of seven satellites for critical national applications will be operational shortly. Mars Orbiter Mission, Chandrayaan-I, Astrosat are some of the scientific and exploration missions which have garnered the attention internationally. The future missions being undertaken by ISAC is highly challenging and provides opportunity to undertake development of innovative technologies and establish the advanced infrastructure needed for space exploration and beyond.

ISRO Satellite Centre (ISAC) Bengaluru invites applications for the following posts: To get the on-line application form, please <u>CLICK ON THE POST NO</u>. which you want to apply for:

Post Code	No. of Vacancy (ies)	Essential minimum qualification	Area of Work/ Job Specification	Mode of Selection	
ME01	06	M.E/M.Tech/M.Sc (Engg.) or equivalent post graduate degree with Machine design / Mechanical Engineering / Applied Mechanics / Machine Dynamics specialization in 1st class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of B.E/B.Tech/B.Sc (Engg) or equivalent qualification in Mechanical Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale.	Design and analysis of satellite structures and related Mechanical components,     Design and analysis of spacecraft mechanisms and study of kinematics     Structural dynamics (theory & experimental) including smart structures, Advanced Composites     Reliability and Quality Assurance of mechanical designs and systems	Written Test & Interview / Interview	
ME02	08	M.E/M.Tech/ M.Sc (Engg.) or equivalent post graduate degree in Digital Electronics /Micro Electronics / Signal Processing/ VLSI / Embedded systems/VLSI and Embedded systems/ Industrial Electronics / Electronics/ Applied Electronics specialization in 1st class with an aggregate minimum of 60% or CGPA/ CPI grading of 6.5 on a 10 scale or equivalent With pre-eligibility of B.E./B.Tech/B.Sc (Engg) or equivalent qualification in Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale.	<ul> <li>Digital Signal Processing</li> <li>Design of microprocessor based onboard systems</li> <li>High speed data compression</li> <li>Design, development and testing of digital circuits</li> <li>FPGA &amp; ASIC development and testing</li> <li>Analog &amp; Mixed Signal SIC Development &amp; Testing</li> </ul>	Written Test & Interview / Interview	
ME03	03	M.E./M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Control Engineering/ Control Systems/ Control & Computing/ Control & Automation specialization in 1st class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of B.E / B.Tech / B.Sc (Engg) or equivalent qualification in Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale.	Development of embedded software with RTOS for onboard computers     Spacecraft Dynamics Modeling, Estimation Theory, Trajectory Analysis, Spacecraft Attitude and Orbit Control, Relative Navigation, Simulation Studies     Hardware in Loop Simulation, Onboard Software Requirement Generation etc.	Written Test & Interview / Interview	
ME04	05	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Solid State Technology/Solid State Electronic Materials/Solid State Materials specialization in 1st class with an aggregate minimum of 60% or CGPA / CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of  • B.E / B.Tech / B.Sc (Engg) or equivalent qualification in Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Physics/ Applied Physics and specialization/ subject in Solid State Physics/ Solid State electronics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Electronics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale.	Spacecraft solar panel/ Battery development which includes design, fabrication, testing of photovoltaic solar panels/ batteries     Process Development of solar panels / Batteries     Knowledge in Software development is desirable	Written Test & Interview / Interview	
ME05	02	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Aeronautical/ Aerospace Engineering specialization in 1st class with an aggregate minimum of 60% or CGPA / CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of  • B.E / B.Tech / B.Sc (Engg) or equivalent qualification in Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Mathematics/ Applied Mathematics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale.	Spacecraft Dynamics Modeling, Estimation Theory, Trajectory Analysis, Spacecraft Attitude and Orbit Control, Relative Navigation, Simulation Studies     Space flight dynamics algorithm development     Orbital mechanics, Guidance, re-entry dynamics     Trajectory designs, orbit maneuver design, geometric analyses     Space based navigation design and analysis     Spacecraft mission operations design and analysis	Written Test & Interview / Interview	
ME06	01	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Power Electronics / Power Electronic & Drives / Power Systems Engineering / Power Engineering specialization in 1st class with an aggregate minimum of 60% or CGPA / CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of B.E / B.Tech / B.Sc (Engg.) or equivalent qualification in Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale.	Design and development of power simulators for spacecraft checkout activities.	Written Test & Interview / Interview	
ME07	01	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in RF & Microwave Engineering/ Microwave Engineering / Communication Systems/Communication Engineering / Digital Electronics & Communication Systems / Digital Communication / Microwave & RADAR/ RADAR & Communication Engineering specialization in 1st class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of B.E / B.Tech / B.Sc (Engg.)or equivalent qualification in Electronics & Communication /Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale.	Testing of Avionics systems/RF systems and Reliability Analysis activities for the Spacecraft hardware.	Written Test & Interview / Interview	
ME08	01	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Thermal Engineering/ Thermal Science & Engineering / Thermal Science & Energy Systems/ Heat Transfer in Energy Systems specialization in 1st class with an aggregate minimum of 60% or CGPA / CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of B.E / B.Tech / B.Sc (Engg.)or equivalent qualification in Chemical Engineering / Mechanical Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale.	Reliability & Quality Assurance related activities of Spacecraft Thermal Control Elements.	Written Test & Interview / Interview	
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Continue....Advt. No.ISAC:01:2017

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Post Code	No. of Vacancy (ies)	Essential minimum qualification	Area of Work/ Job Specification	Mode of Selection		
ME09	02	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Materials Engineering / Materials Science/ Metallurgical Engineering / Metallurgical & Materials Engineering / Polymer Science & Technology specialization in 1st class with an aggregate minimum of 60% or CGPA / CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of  B.E. / B.Tech / B.Sc (Engg.)or equivalent qualification in Chemical Engineering / Mechanical Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Chemistry/ Physics/Applied Chemistry/ Applied Physics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale.	<ul> <li>Process development &amp; qualification of space qualified materials for spacecraft</li> <li>Optical thin films process and material development, design and development of multilayer optical coatings</li> </ul>	Written Test & Interview / Interview		
ME10	03	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degreein Applied Optics/ Optics/ Optical Engineering / Laser & Electro-Optical Engineering / Photonics specialization in 1st class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of  B.E / B.Tech / B.Sc (Engg.)or equivalent qualification inOptics & Optoelectronics / Electronics & Communication / Electrical & Electronics Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Physics/ Applied Physics / Electronics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale	Geometrical / Physical optics, optical design, opto-mechanical design, fourier optics, optical fabrication and testing Area of optical / opto-mechanical design Fabrication and testing of high precision optics Development of telescope / camera optics assemblies meant for space applications.	Written Test & Interview / Interview		
ME11	02	M.E / M.Tech / M.Sc (Engg.) or equivalent post graduate degree in Opto Electronics/ Optics & Opto Electronics/ Opto Electronics & Optical Communication specialization in 1st class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent  With pre-eligibility of  • B.E / B.Tech / B.Sc (Engg.)or equivalent qualification in Optics & Opto Electronics / Opto Electronics & Optical Communication / Electronics & Communication / Electronics & Communication / Electronics with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale or • M.Sc or equivalent qualification in Physics / Applied Physics / Electronics with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale.	Design, development of electro-optical devices and their characterization.     Optoelectronic devices, MOEMS and infrared detectors.     Development of THz detectors for space applications.     MOEMS sensors for micro-satellites.     Development of un-cooled IR detectors for passive and active detection systems	Written Test & Interview / Interview		
MS12	01	M.Sc or equivalent post graduate degree in Physics/Applied Physics with an aggregate minimum of 65% or CGPA/CPI grading of 6.84 on a 10 scale  With pre-eligibility qualification of B.Sc with 1st class.	Flight dynamics & planning, orbital determination etc. for the spacecraft	Written Test & Interview / Interview		
MS13	03	M.Sc or equivalent post graduate degree in Mathematics/ Applied Mathematics with an aggregate minimum of 65% or CGPA / CPI grading of 6.84 on a 10 scale  With pre-eligibility qualification of B.Sc with 1st class	Attitude / Orbit estimation for satellites and Software development.     Numerical methods     GNSS simulation, modeling, analysis, software & systems and applications     Knowledge of SBAS/GBAS/Pseudolites	Written Test & Interview / Interview		
BE14	03	B.E/ B.Tech or equivalent degree in Industrial Production/ Industrial Engineering/ Industrial Management/ Industrial Engineering & Management/ Production Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/ CPI grading of 6.84 on a 10 scale	Resource Management, Financial & Personnel Management functions, Systems Engineering & Project Management.	Written Test & Interview / Interview		
BE15	04	B.E/ B.Tech or equivalent degree in Electrical & Electronics Engineering / Electrical Engineering/ Power Electronics or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale	Fabrication and testing avionics systems     Development of Test & Evaluation systems for spacecraft hardware     Installation, Commissioning, Operation & Maintenance of Environmental Test Systems for spacecraft & sub system testing	Written Test & Interview / Interview		
BE16	03	B.E/ B.Tech or equivalent degree in Instrumentation Engineering/ Instrumentation Technology / Electronics & Instrumentation Engineering / Instrumentation & Control Engineering or allied branches with an aggregate minimum of 65% (average of all semesters) or CGPA / CPI grading of 6.84 on a 10 scale	Installation, Commissioning, Operation & Maintenance of Environmental Test Systems for spacecraft & sub system testing.     Operation & Maintenance high speed specialized data acquisition & control systems	Written Test & Interview / Interview		
BE17	01	B.E/B.Tech or equivalent degree in Mechatronicswith an aggregate minimum of 65% (average of all semesters) or CGPA/CPI grading of 6.84 on a 10 scale	Development of Control algorithms & Computer Simulation     Navigation Guidance and Control for various missions     Robotics related developments	Written Test & Interview / Interview		

## **Educational Qualification:**

For Post No.ME01 To Post No. ME11: M.E./M.Tech/M.Sc(Engg) or equivalent post graduate degree in First Class with an aggregate minimum of 60% or CGPA/CPI grading of 6.5 on a 10 scale or equivalent with pre-eligibility qualification of B.E./B.Tech/B.Sc(Engg)/MSc or equivalent qualification with an aggregate minimum of 65% (average of all Semesters) or CGPA/CPI grading of 6.84 on a 10 point scale.

For Post No. MS12 & MS13: M.Sc or equivalent qualification should be in First Class with an aggregate minimum of 65% average of all Semesters or 6.84 CGPA/CPI on a 10 point scale with pre-eligibility qualification of B.Sc with 1st class.

For Post No. BE14 To BE17: B.E./B.Tech/AMIE/Grad IETE or equivalent qualification should also be in First Class with an aggregate minimum of 65% marks (average of all Semesters) or CGPA/CPI of 6.84 on a 10 point scale. For AMIE/Grad IETE qualification will be minimum of 65% marks or CGPA 6.84 in Section-B alone.

**<u>Age Limit:</u>** 18-35 years as on **<u>04.03.2017</u>**.

Pay and Allowances for the above post:

Po	Post Name		
Scientist/Engineer 'SC'	₹ 56100/- Pay level 10 in the Pay Matrix		

The employees will be governed by the National Pension System. ISRO provides free transport (or in lieu Transport Allowance), limited housing facility (or in lieu House Rent Allowance), advance for construction of house, etc., Leave Travel Concession, Group Insurance, etc., and extends subsidized canteen facilities. ISRO also provides attractive contributory medical benefits to its employees and eligible dependants.

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Continue....Advt. No.ISAC:01:2017 February 18, 2017

### **Selection Process:**

- 1. The qualification prescribed is the minimum requirement and possession of the same does not automatically make the candidates eligible to be called for Written test and Interview/Interview. There will be an initial screening based on the academic performance and other parameters provided by the candidates in the on-line applications and only those who screened-in, will be called for Written test. The candidates will be further shortlisted based on the performance/marks scored in the written test for interview. ISRO may adopt the method of conducting written test for initial screening or may directly shortlist the applicants for interview. If written test is conducted, the candidates will be further short listed for interview based on the performance / marks scored in the written test. Final Selection will be made based only on the performance in the interview. In other words, marks scored by the candidates in the written test shall not be considered for final selection.
- 2. CGPA on a ten point scale will be converted into percentage equivalent by multiplying with a factor of 9.5
- 3. The written test will be conducted for the Screened-in candidates at Bengaluru only, for which no travelling allowance will be provided to the candidate.

### How to apply:

- The application for on-line registration will be hosted in the ISRO web-site <a href="www.isro.gov.in">www.isro.gov.in</a> during the period from <a href="mailto:18.02.2017">18.02.2017</a> to <a href="mailto:04.03.2017">04.03.2017</a>. Candidates may visit our website to register their applications on-line between <a href="mailto:18.02.2017">18.02.2017</a> to <a href="mailto:04.03.2017">04.03.2017</a>. Applications will be received through on-line only. Upon registration, applicants will be provided with an on-line Registration Number, which should be carefully preserved for future reference. E-mail ID of the applicant will have to be provided in the application correctly and compulsorily (Hall tickets / Call letters will be sent to the screened-in candidates through E-mail">18.02.2017</a> to <a href="mailto:04.03.2017">18.02.2017</a> t
- The on-line application has to be invariably followed-up with a 'No Objection Certificate (NOC)' from the employer concerned by those who are already in employment under Central/State Government, Public Sector Undertaking or Autonomous Body etc duly indicating the name, the post for which applied/Post No. and Regn. No. on the backside of the NOC.

### Payment of Application Fee:

### Note:

All Women, Scheduled Caste (SC); Scheduled Tribes (ST); Ex-Serviceman (Ex-S), Persons with Disabilities (PWD) candidates are exempted from payment of Application fee and will not get "Bank Challan Copy". Such candidates will only get "Personalized Registration Confirmation Form". However, after registration of application on-line, the candidate has to download and print the "Personalized Registration Confirmation Form", from the ISRO system which contains the Name of the Candidate, Registration Number, Advertisement No., and Post Code for future reference.

Satellite Centre, Bangalore i.e. on or before 11.03.2017 will not be considered for further processing under any circumstances and postal delay will not be taken into consideration for the last due date.

### Instructions to Candidates:

- 1. Applicants are strictly instructed to go through the advertisement in detail before filling up the online application form. If the essential qualification and the pre-requisite degree acquired by the applicant does not appear in the drop-down menu of the online application form, applicant shall select the 'Other Equivalent' option and mention the name of the branch/specialization in the online application form without fail. ISAC / ISRO reserves the right to screen-in applicants for written test / Interview after assessing the equivalence of the 'Other Equivalent' branch / specialization entered by the applicant. The decision taken by ISAC / ISRO in this regard shall be final.
- 2. Applicants possessing degrees awarded by foreign universities should produce the equivalency certificate issued by Association of Indian Universities (AIU), New Delhi, at the time of Interview.

### **General Conditions:**

- Applications made on-line only will be entertained. Physical applications will not be entertained.
- The posts are temporary, but likely to continue indefinitely.
- The number of posts indicated above is provisional and may vary depending on the actual requirements.
- Candidates pursued Professional course through Open and Distance Learning (ODL) are not eligible.
- If a candidate does not fulfil the eligibility/conditions given in the advertisement, his/her candidature will be cancelled summarily at any stage on scrutiny whenever the discrepancy is noticed i,e. Before written test/interview or after interview.
- $\bullet \qquad \text{In case any ambiguity/dispute arises on account of interpretation of Hindi version, English version shall finally prevail.}\\$
- The appointees are liable to be posted in any of the Centres/Units of the Indian Space Research Organization/Department of Space situated anywhere in India, as and when required. For details of ISRO Centre/Units, please visit <a href="www.isro.gov.in">www.isro.gov.in</a>.
- Outstation candidates shortlisted for interview after the written test will be paid to and fro Second Class sleeper Railway fare by the shortest distance from the address given in on-line application to the place of interview or non-A/c Bus fare or actual fare whichever is less on production of proof of journey, irrespective of the mode of journey performed by the candidate viz., Rail, Bus, Air, etc.If a candidate travels in a higher class of accommodation, by train, by bus or by Air, only second class train fare excluding reservation/sleeper charges will be paid.
- ISRO reserves the right not to fill up all or any of the posts, if it decides to do so.
- Those who possess the required qualification as on 04.03.2017 only need to apply
- Only Indian Nationals are eligible to apply
- No interim correspondence will be entertained.
- $\bullet \quad \mathsf{CANVASSING}\,\mathsf{IN}\,\mathsf{ANY}\,\mathsf{FORM}\,\mathsf{WILL}\,\mathsf{RESULT}\,\mathsf{IN}\,\mathsf{DISQUALIFICATION}\,\mathsf{OF}\,\mathsf{APPLICATION}.$
- 04.03.2017 (LAST DATE FOR RECEIPT OF ON-LINEAPPLICATIONS) will be the cut-off date for all purposes like age, qualification etc.

GOVERNMENT STRIVES TO HAVE A WORKFORCE WHICH REFLECTS GENDER BALANCE AND WOMEN CANDIDATES ARE ENCOURAGED TO APPLY VISIT OUR WEBSITE AT <a href="https://www.isro.gov.in">www.isro.gov.in</a> FOR LATEST UPDATES ON THE STATUS OF YOUR APPLICATION

JOIN ISRO AND SHAPE-UP YOUR CAREER
SHARE YOUR KNOWLEDGE WITH TALENTED SCIENTIST COMMUNITY AND SUPPORT NATIONAL DEVELOPMENT