

Indian Engineering Services [Read nicely]

Indian Engineering Services abbreviated as **IES** are the civil services that meet the technical and managerial functions of the Government of India. Like most countries, the Government of India recruits its civil servants and officials on the basis of merit, the middle management positions in the bureaucracy are filled through competitive exams.

Large number of candidates take these exams, competing for limited posts. IES officers are selected by the union government on the recommendations made by the Union Public Service Commission (UPSC). A combined three-stage competitive examination (comprising five tests), called the **Engineering Services Examination (ESE)** is conducted by the UPSC for recruitment to the Indian Engineering Services.

IES remain the most sought-after careers for the engineering graduates in India. In 2015, a total of 434 candidates were recommended through ESE with least selection ratio ever. In the year 2010, a total of 157,649 candidates applied for 434 vacancies (includes all branches and cadres).

In 2011, a total number of 693 candidates were recommended for appointments in these four lists include 317 General, 209 Other Backward Classes, 113 Scheduled Castes and 54 Scheduled Tribes (including 44 candidates belonging to Physically Handicapped category). ESE 2012 was conducted for the recruitment of candidates to as many as 560 posts, which also includes 47 vacancies available only for the PH (physically handicapped) category. ESE 2013 was conducted for the recruitment of candidates to as many as 763 posts, which also includes 19 vacancies available only for the PH (physically handicapped) category.

ESE is therefore considered as the toughest exam in India and amongst the toughest in the world due to less number of posts having a selection ratio of 0.00275 (based on 2010 statistics) and its technical nature. Most toppers of this exam are graduates of institutes like the Indian Institutes of Technology and Indian Institute of Science.

Because of this difficult selection procedure, IES officers carry high respect and status in society and are able to manage activities in diverse areas. Government spending comprises more than 15 percent of India's GDP and given the extent of tasks and functions managed by the public sector, this extends to a fairly broad segment of the economy covering the railways, roads, defense, manufacturing, inspection, supply, construction, public works, power, telecommunications, etc. All appointments to the Group A services are made by the President of India.

Civil Engineering

1. Border Roads Engineering Service (Border Roads Organisation)
2. Central Engineering Service (Central Public Works Department)
3. Central Engineering Service (Ministry of Road Transport & Highways)
4. Central Water Engineering Service (Central Water Commission)
5. Indian Defence Service of Engineers (Military Engineer Services)
6. Indian Ordnance Factories Service (IOFS)
7. Indian Railway Service of Engineers
8. Indian Railway Stores Service
9. Survey of India Service
10. P & T Building Works Service (DoT, Ministry of Communication & Information Technology)
11. Military Engineer Services (QS & C)

Mechanical Engineering

1. Border Roads Engineering Service (Border Roads Organisation)
2. Central Electrical & Mechanical Engineering Service (Central Public Works Department)
3. Central Engineering Service (Ministry of Road Transport & Highways)
4. Central Power Engineering Service (Central Electricity Authority)
5. Central Water Engineering Service (Central Water Commission)
6. Corps of Electrical and Mechanical Engineers (EME), Indian Army
7. Indian Defence Service of Engineers (Military Engineer Services)
8. Indian Inspection Service (Directorate General of Supply and Disposals)
9. Indian Naval Armament Service (Directorate of Naval Armament)
10. Indian Naval Stores Service (Indian Navy)
11. Indian Ordnance Factories Service (IOFS)
12. Indian Railway Service of Mechanical Engineers
13. Indian Railway Stores Service
14. Indian Supply Service (Directorate General of Supply and Disposals)

Electrical Engineering

1. Central Electrical and Mechanical Engineering Service (Central Public Works Department)
2. Central Power Engineering Service
3. Corps of Electrical and Mechanical Engineers (EME), Indian Army
4. Indian Defence Service of Engineers (Military Engineer Services)
5. Indian Naval Armament Service (Directorate of Naval Armament)
6. Indian Naval Stores Service (Indian Navy)
7. Indian Ordnance Factories Service (IOFS)
8. Indian Railway Service of Electrical Engineers
9. Indian Railway Stores Service
10. Indian Supply Service (Directorate General of Supply and Disposals)
11. P & T Building Works Service (Department of Telecommunications (DOT), Ministry of Communications)

Electronics & Telecommunication Engineering

1. Central Power Engineering Service (Central Electricity Authority)
2. Corps of Electronics and Mechanical Engineers (EME), Indian Army
3. Indian Inspection Service (Directorate General of Supply and Disposals)
4. Indian Naval Armament Service (Directorate of Naval Armament)
5. Indian Naval Stores Service (Indian Navy)
6. Indian Ordnance Factories Service (IOFS)
7. Indian Radio Regulatory Service
8. Indian Railway Service of Signal Engineers
9. Indian Railway Stores Service
10. Indian Supply Service (Directorate General of Supply and Disposals)
11. Indian Telecommunication Service

Functions of the officers

The nature of work performed by these bureaucrats largely depends on their engineering branch and the service or cadre they are recruited in. However, they can move to any cadre, organisation, agency, department, ministry or PSU of the Government of India. They are appointed in the posts analogous to their present one, either on deputation basis which is of a fixed tenure (at least 5 years and extensible) after which the officer returns to their parent cadre or on absorption basis where the official leaves the parent cadre and is "absorbed" permanently into the new cadre.^{[16][17]}

Eligibility

Nationality

The candidate must be one of the following:

- A citizen of India
- A citizen of Nepal or a subject of Bhutan
- a person of Indian origin who has migrated from Pakistan, Bangladesh, Myanmar, Sri Lanka, Kenya, Uganda, Tanzania, Zambia, Malawi, Zaire, Ethiopia or Vietnam with the intention of permanently settling in India.

Educational qualifications^[edit]

At least a bachelor's degree in Engineering (B.E. / B. Tech) from a recognised university or equivalent. M.Sc degree or its equivalent with Wireless Communications, Electronics, Radio Physics or Radio Engineering as special subjects also acceptable for certain services / posts only.^[18]

Age limits^[edit]

21–30 years on 1 August of the year of Engineering Services Examination.^[19]

Upper age limit relaxation is provided to candidates as follows:

- A maximum of Three years for OBC candidates [Non Creamy Layer only]
- A maximum of Four years in case of Defence Services personnel disabled in operations during hostilities with any foreign country or in a disturbed area and released as a consequence thereof
- A maximum of Five years for candidates belonging to a Scheduled Caste or a Scheduled Tribe
- A maximum of Five years if a candidate had ordinarily been domiciled in the State of Jammu & Kashmir during the period from 1 January 1980 to 31 December 1989
- A maximum of Five years in case of ex-servicemen including Commissioned Officers and ECOs/SSCOs who have rendered at least five years Military Service as on 1 August.

Examination

Application

Candidates are required to apply online only, using UPSC's official website.

Application fee

The application fee of the online form for General category male candidates is ₹ 200, while no fee is required by female and the reserved category applicants.

Test centres

The test is conducted in June every year at centres across India, namely: Agartala, Ahmedabad, Aizwal, Aligarh, Allahabad, Bangalore, Bareilly, Bhopal, Chandigarh, Chennai, Cuttack, Dehradun, Delhi, Dharwad, Dispur, Gangtok, Hyderabad, Imphal, Itanagar, Jaipur, Jammu, Jorhat, Kochi, Kohima, Kolkata, Lucknow, Madurai, Mumbai, Nagpur, Panaji(Goa), Patna, Port

Blair, Raipur, Ranchi, Sambalpur, Shillong, Shimla, Srinagar, Thiruvananthapuram, Tirupati, Udaipur and Visakhapatnam.

Plan of examination

Based on the recommendations of expert committees formed by the Union Public Service Commission, the Government of India has conveyed its approval to the following structural changes in the scheme and syllabi of the Engineering Services Examination to be implemented from the year 2017 onwards.

| Revised Scheme of Examination | | |
|--|---|--------------------------------------|
| Stage-I: | Engineering Services (Preliminary / Stage-I) Examination (Objective Type Papers) | |
| Paper-I : { Common for all Candidates } | General Studies and Engineering Aptitude Paper | 2 hours duration 200 Marks (max.) |
| Paper-II : | Engineering Discipline-specific Paper | 3 hours duration 300 Marks (max.) |
| Stage-I : | Sub-Total | 500 Marks (max.) |
| | <i>Minimum Qualifying Marks for each Paper should be at the discretion of the Commission. Only those candidates qualifying at this Stage to be permitted to appear for Stage-II examination</i> | |
| Stage-II: | Engineering Services (Mains / Stage-II) Examination (Conventional Type Papers) | |
| Paper-I: | Engineering Discipline-specific Paper-I | 3 hours duration 300 Marks |

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| | | (max.) |
| Paper-II: | Engineering Discipline-specific Paper-II | 3 hours duration 300 Marks (max.) |
| Stage-II: | Sub-Total | 600 Marks (max.) |
| Stage-I + Stage-II | Sub-Total | 1100 Marks (max.) |
| | <i>Only those Candidates qualifying at this Stage (i.e. Stage-I + Stage-II) to be permitted to appear for Stage-III examination</i> | |
| Stage-III: | Personality Test | 200 Marks (max.) |
| Stage-I + Stage-II + Stage-III | Grand Total | 1300 Marks (max.) |
| | <i>Only those Candidates qualifying at this Stage (i.e. Stage I + Stage II + Stage III) to be included in the Final Merit List of Engineering Services Exam. Thus the marks secured by the candidates in the Stage-I (Objective type papers) of the Engineering Services Examination should be added to the marks secured in the Stage-II (Conventional type papers) of the Examination and Stage-III (Personality Test) and accordingly, such marks secured by the candidates in Stage-I should also be counted for merit.</i> | |

General Studies and Engineering Aptitude Paper

The paper in General Studies and Engineering Aptitude will include the questions from the following topics will be set in Paper-I of Stage-I:

1. Current issues of national and international importance relating to social, economic and industrial development.
2. Engineering Aptitude covering Logical reasoning and Analytical ability.
3. Engineering Mathematics and Numerical Analysis.

4. General Principles of Design, Drawing, Importance of Safety.
5. Standards and Quality practices in production, construction, maintenance and services.
6. Basics of Energy and Environment : Conservation, environmental pollution and degradation, Climate Change, Environmental impact assessment.
7. Basics of Project Management.
8. Basics of Material Science and Engineering.
9. Information and Communication Technologies (ICT) based tools and their applications in Engineering such as networking, e-governance and technology based education.
10. Ethics and values in Engineering profession.

Personality Test

This is the final stage; candidates who qualify the written exam are called for the interview. Interview carries 200 marks. Officially called "Personality Test", the object of the interview is to assess the personal suitability of the candidate for a career in public service by a Board of competent and unbiased observers. The test is intended to judge the mental caliber of a candidate. In broad terms this is really an assessment of not only his intellectual qualities but also social traits and his interest in current affairs. Some of the qualities to be judged are mental alertness, critical powers of assimilation, clear and logical exposition, balance of judgement, variety and depth of interest, ability for social cohesion and leadership, intellectual and moral integrity.

The technique of the interview is not that of a strict cross-examination but of a natural, though directed and purposive conversation which is intended to reveal the mental qualities of the candidate.

The interview test is not intended to be a test either of the specialized or general knowledge of the candidates which has been already tested through their written papers. Candidates are expected to have taken an intelligent interest not only in their special subjects of academic study but also in the events which are happening around them both within and outside their own state or country as well as in modern currents of thought and in new discoveries which should rouse the curiosity of well educated youth.

These four stages ensure that the candidates selected, are best suited to handle the responsibilities which will be entrusted to them. The selected candidates then undergo training at the academies / institutes of their respective cadres that makes them acquainted with the area of work, the cadre / service is engaged in.