

IIT JEE

Indian Institute of Technology, Joint Entrance Examination

Indian Institute of Technology (**IIT**) conduct a Joint Entrance Examination (**JEE**) every year for the admission to its B-Tech and other courses offered at the IIT Mumbai, IIT Kanpur, IIT Delhi, IIT Chennai, IIT Kharakpur, IIT Guwahati, IIT Roorkee, IT Varanasi and ISM Dhanbad.

JOINT ENTRANCE EXAMINATION

(JEE-) Application for the examination can be submitted through on-line or offline. Information brochure for IIT JEE can be downloaded from [here](#) .

Off-line:

From any branch of bank candidate may buy application form with the information brochure by giving Rs. 500/- for ST, SC or female (White Color Envelop) and Rs.1000/- for all other candidates (Blue Color Envelop).

This information brochure contains all the details related to JEE such as procedure of the application, examination center, syllabus, courses offered by various institutes, fee

structure, counseling and other related information about JEE-**On-line**:

For the online application form, visit any related site and cautiously follow all the given instructions. This can be done from the IIT websites. There is no need to purchase the hard copy of the application form. However, this method requires a few things like print-out, fee and others to be sent to the IIT Madras postal address. Details can be seen [here](#).

Examination schedule for JEE-

Date	Time	Paper
12 April 2009	09.00-12.00 hrs	Paper - 1
	14.00-17.00 hrs	Paper - 2

Important dates for the IIT-JEE examination:

Sale at selected bank's branches and at all IITs	Nov. 19, ,
Online Application Date and Time	
Last date for the submission of completed application	24 December
Declaration of Results	25 May

[Syllabus](#) for the Screening Test as well as for the Main Examination will be same. The detailed

syllabus will be available in the Information Brochure.

List of the Banks for purchase of the Application Material:

IIT DELHI ZONE: Union Bank of India:

NEW-DELHI: Connaught Place, Karol Bagh (Arya Samaj Road), Nehru Place, Model Town-2, Rajouri Garden, S.D.A., Shahdara, Shalimar Bagh;

HARYANA: Faridabad, Gurgaon;

HIMACHAL PRADESH: Kangra, Mandi, Mehatpur, Shimla;

JAMMU AND KASHMIR: Jammu, Srinagar;

MADHYA PRADESH: Gwalior;

PUNJAB: Amritsar, Bhatinda, Jalandhar, Ludhiana, Moga, Pailankoi, Patiala;

UTTAR PRADESH: Agra, Gautam Budh Nagar, Ghaziabad, Mathura.

IIT Kanpur Zone: State Bank of India:

UTTAR PRADESH: Allahabad, Amethi, Ajaigarh, Ballia, Banda, Etawah, Faizabad, Gonda, Gorakhpur, Hardoi, Jhansi, Kanpur, Luck now, Raeibareli, Sitapur, Sultanpur;

UTTARAKHAND: Alrriora, Haldwani, Nainital, Pantnagar.

IIT Rookree Zone: Punjab National Bank:
CHANDIGARH

HARYANA: Ambala, Hissar, Kurukshetra,
Panipat, Rohtak, Yamuna Nagar;

UTTARAKHAND: Dehradun, Hardwar, Roorkee,
Srinagar, Garhwal Uttarkashi;

UTTAR PRADESH: Aligarh, Bareilly, Bijnor,
Meerut, Moradabad, Muzaffarnagar, Saharanpur
Varanasi.

Examination Pattern for JEE-2007:

JEE 2007 have two papers with three hours each. These papers contain questions from chemistry, physics and mathematics. Each paper has three subsections and contains the questions from three subjects without sectional time limit.

As compared to the last exam, in this new pattern 20 percent time is minimized from first examination to last examination. As per the last exam, if interval is of 2 hours then student will be in exam zone for 8 hours rather than 10 hours.

In new pattern papers will be reduced from 3 to 2 which also helps student in minimizing stress. Testing time remains as it is, students are

trained for looking at problems. Read more about these [IIT JEE new changes](#).

JEE Syllabus

Complete IIT JEE Syllabus

1. [JEE Mathematic Syllabus](#)
2. [JEE Physics Syllabus](#)
3. [JEE Chemistry Syllabus](#)
4. [JEE Aptitude Test in B. Arch. & B. Des.](#)

JEE Mathematics Syllabus

Algebra

Algebra of complex numbers, addition, multiplication, conjugation, polar representation, properties of modulus and principal argument, triangle inequality, cube roots of unity, geometric interpretations.

Quadratic equations with real coefficients, relations between roots and coefficients, formation of quadratic equations with given roots, symmetric functions of roots.

Arithmetic, geometric and harmonic progressions, arithmetic, geometric and harmonic means, sums of finite arithmetic and geometric progressions, infinite geometric series, sums of squares and cubes of the first n natural numbers.

Logarithms and their properties.

Permutations and combinations, Binomial theorem for a positive integral index, properties of binomial coefficients.

Matrices as a rectangular array of real numbers, equality of matrices, addition, multiplication by a scalar and product of matrices, transpose of a matrix, determinant of a square matrix of order up to three, inverse of a square matrix of order up to three, properties of these matrix operations, diagonal, symmetric and skew-symmetric matrices and their properties, solutions of simultaneous linear equations in two or three variables.

Addition and multiplication rules of probability, conditional probability, independence of events, computation of probability of events using permutations and combinations.

Trigonometry

Trigonometric functions, their periodicity and graphs, addition and subtraction formulae, formulae involving multiple and sub-multiple angles, general solution of trigonometric equations.

Relations between sides and angles of a triangle, sine rule, cosine rule, half-angle formula and the area of a triangle, inverse trigonometric functions (principal value only).

Analytical geometry

Two dimensions: Cartesian coordinates, distance between two points, section formulae, shift of origin.

Equation of a straight line in various forms, angle between two lines, distance of a point from a line. Lines through the point of intersection of two given lines, equation of the bisector of the angle between two lines, concurrency of lines, centroid, orthocentre, incentre and circumcentre of a triangle.

Equation of a circle in various forms, equations of tangent, normal and chord.

Parametric equations of a circle, intersection of a circle with a straight line or a circle, equation

of a circle through the points of intersection of two circles and those of a circle and a straight line.

Equations of a parabola, ellipse and hyperbola in standard form, their foci, directrices and eccentricity, parametric equations, equations of tangent and normal.

Locus Problems.

Three dimensions: Direction cosines and direction ratios, equation of a straight line in space, equation of a plane, distance of a point from a plane.

Differential calculus

Real valued functions of a real variable, into, onto and one-to-one functions, sum, difference, product and quotient of two functions, composite functions, absolute value, polynomial, rational, trigonometric, exponential and logarithmic functions.

Limit and continuity of a function, limit and continuity of the sum, difference, product and quotient of two functions, l'Hospital rule of evaluation of limits of functions.

Even and odd functions, inverse of a function, continuity of composite functions, intermediate value property of continuous functions.

Derivative of a function, derivative of the sum, difference, product and quotient of two functions, chain rule, derivatives of polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions.

Derivatives of implicit functions, derivatives up to order two, geometrical interpretation of the derivative, tangents and normals, increasing and decreasing functions, maximum and minimum values of a function, applications of Rolle's Theorem and Lagrange's Mean Value Theorem.

Integral calculus

Integration as the inverse process of differentiation, indefinite integrals of standard functions, definite integrals and their properties, application of the Fundamental Theorem of Integral Calculus.

Integration by parts, integration by the methods of substitution and partial fractions, application of definite integrals to the determination of areas involving simple curves.

Formation of ordinary differential equations, solution of homogeneous differential equations, variables separable method, linear first order differential equations.

Vectors

Addition of vectors, scalar multiplication, scalar products, dot and cross products, scalar triple products and their geometrical interpretations.

JEE Chemistry Syllabus

Physical chemistry

General topics: The concept of atoms and molecules; Dalton's atomic theory; Mole concept; Chemical formulae; Balanced chemical equations; Calculations (based on mole concept) involving common oxidation-reduction, neutralisation, and displacement reactions; Concentration in terms of mole fraction, molarity, molality and normality.

Gaseous and liquid states: Absolute scale of temperature, ideal gas equation; Deviation from ideality, van der Waals equation; Kinetic theory of gases, average, root mean square and most probable velocities and their relation with

temperature; Law of partial pressures; Vapour pressure; Diffusion of gases.

Atomic structure and chemical bonding: Bohr model, spectrum of hydrogen atom, quantum numbers; Wave-particle duality, de Broglie hypothesis; Uncertainty principle; Quantum mechanical picture of hydrogen atom (qualitative treatment), shapes of s, p and d orbitals; Electronic configurations of elements (up to atomic number 36); Aufbau principle; Pauli's exclusion principle and Hund's rule; Orbital overlap and covalent bond; Hybridisation involving s, p and d orbitals only; Orbital energy diagrams for homonuclear diatomic species; Hydrogen bond; Polarity in molecules, dipole moment (qualitative aspects only); VSEPR model and shapes of molecules (linear, angular, triangular, square planar, pyramidal, square pyramidal, trigonal bipyramidal, tetrahedral and octahedral).

Energetics: First law of thermodynamics; Internal energy, work and heat, pressure-volume work; Enthalpy, Hess's law; Heat of reaction, fusion and vapourization; Second law of thermodynamics; Entropy; Free energy; Criterion of spontaneity.

Chemical equilibrium: Law of mass action; Equilibrium constant, Le Chatelier's principle (effect of concentration, temperature and pressure); Significance of ΔG and ΔG° in chemical equilibrium; Solubility product, common ion effect, pH and buffer solutions; Acids and bases (Bronsted and Lewis concepts); Hydrolysis of salts.

Electrochemistry: Electrochemical cells and cell reactions; Electrode potentials; Nernst equation and its relation to ΔG ; Electrochemical series, emf of galvanic cells; Faraday's laws of electrolysis; Electrolytic conductance, specific, equivalent and molar conductance, Kohlrausch's law; Concentration cells.

Chemical kinetics: Rates of chemical reactions; Order of reactions; Rate constant; First order reactions; Temperature dependence of rate constant (Arrhenius equation).

Solid state: Classification of solids, crystalline state, seven crystal systems (cell parameters a , b , c , α , β , γ), close packed structure of solids (cubic), packing in fcc, bcc and hcp lattices; Nearest neighbours, ionic radii, simple ionic compounds, point defects.

Solutions: Raoult's law; Molecular weight determination from lowering of vapor pressure, elevation of boiling point and depression of freezing point.

Surface chemistry: Elementary concepts of adsorption (excluding adsorption isotherms); Colloids: types, methods of preparation and general properties; Elementary ideas of emulsions, surfactants and micelles (only definitions and examples).

Nuclear chemistry: Radioactivity: isotopes and isobars; Properties of α , β and γ rays; Kinetics of radioactive decay (decay series excluded), carbon dating; Stability of nuclei with respect to proton-neutron ratio; Brief discussion on fission and fusion reactions.

Inorganic Chemistry

Isolation/preparation and properties of the following non-metals: Boron, silicon, nitrogen, phosphorus, oxygen, sulphur and halogens; Properties of allotropes of carbon (only diamond and graphite), phosphorus and sulphur.

Preparation and properties of the following compounds: Oxides, peroxides, hydroxides,

carbonates, bicarbonates, chlorides and sulphates of sodium, potassium, magnesium and calcium; Boron: diborane, boric acid and borax; Aluminium: alumina, aluminium chloride and alums; Carbon: oxides and oxyacid (carbonic acid); Silicon: silicones, silicates and silicon carbide; Nitrogen: oxides, oxyacids and ammonia; Phosphorus: oxides, oxyacids (phosphorus acid, phosphoric acid) and phosphine; Oxygen: ozone and hydrogen peroxide; Sulphur: hydrogen sulphide, oxides, sulphurous acid, sulphuric acid and sodium thiosulphate; Halogens: hydrohalic acids, oxides and oxyacids of chlorine, bleaching powder; Xenon fluorides; Fertilizers: commercially available (common) NPK type.

Transition elements (3d series): Definition, general characteristics, oxidation states and their stabilities, colour (excluding the details of electronic transitions) and calculation of spin-only magnetic moment; Coordination compounds: nomenclature of mononuclear coordination compounds, cis-trans and ionisation isomerisms, hybridization and geometries of mononuclear coordination compounds (linear, tetrahedral, square planar and octahedral).

Preparation and properties of the following compounds: Oxides and chlorides of tin and lead; Oxides, chlorides and sulphates of Fe^{2+} , Cu^{2+} and Zn^{2+} ; Potassium permanganate, potassium dichromate, silver oxide, silver nitrate, silver thiosulphate.

Ores and minerals: Commonly occurring ores and minerals of iron, copper, tin, lead, magnesium, aluminium, zinc and silver.

Extractive metallurgy: Chemical principles and reactions only (industrial details excluded); Carbon reduction method (iron and tin); Self reduction method (copper and lead); Electrolytic reduction method (magnesium and aluminium); Cyanide process (silver and gold).

Principles of qualitative analysis: Groups I to V (only Ag^+ , Hg_2^{2+} , Cu^{2+} , Pb^{2+} , Bi^{3+} , Fe^{3+} , Cr^{3+} , Al^{3+} , Ca^{2+} , Ba^{2+} , Zn^{2+} , Mn^{2+} and Mg^{2+}); Nitrate, halides (excluding fluoride), sulphate, sulphide and sulphite.

Organic Chemistry

Concepts: Hybridisation of carbon; Sigma and pi-bonds; Shapes of molecules; Structural and geometrical isomerism; Optical isomerism of compounds containing up to two asymmetric

centers, (R,S and E,Z nomenclature excluded); IUPAC nomenclature of simple organic compounds (only hydrocarbons, mono-functional and bi-functional compounds); Conformations of ethane and butane (Newman projections); Resonance and hyperconjugation; Keto-enol tautomerism; Determination of empirical and molecular formula of simple compounds (only combustion method); Hydrogen bonds: definition and their effects on physical properties of alcohols and carboxylic acids; Inductive and resonance effects on acidity and basicity of organic acids and bases; Polarity and inductive effects in alkyl halides; Reactive intermediates produced during homolytic and heterolytic bond cleavage; Formation, structure and stability of carbocations, carbanions and free radicals.

Preparation, properties and reactions of alkanes: Homologous series, physical properties of alkanes (melting points, boiling points and density); Combustion and halogenation of alkanes; Preparation of alkanes by Wurtz reaction and decarboxylation reactions.

Preparation, properties and reactions of alkenes and alkynes: Physical properties of alkenes and alkynes (boiling points, density and dipole moments); Acidity of alkynes; Acid catalysed hydration of alkenes and alkynes (excluding the stereochemistry of addition and elimination); Reactions of alkenes with KMnO_4 and ozone; Reduction of alkenes and alkynes; Preparation of alkenes and alkynes by elimination reactions; Electrophilic addition reactions of alkenes with X_2 , HX , HOX and H_2O ($\text{X}=\text{halogen}$); Addition reactions of alkynes; Metal acetylides.

Reactions of benzene: Structure and aromaticity; Electrophilic substitution reactions: halogenation, nitration, sulphonation, Friedel-Crafts alkylation and acylation; Effect of o-, m- and p-directing groups in monosubstituted benzenes.

Phenols: Acidity, electrophilic substitution reactions (halogenation, nitration and sulphonation); Reimer-Tieman reaction, Kolbe reaction.

Characteristic reactions of the following (including those mentioned above): Alkyl halides: rearrangement reactions of alkyl

carbocation, Grignard reactions, nucleophilic substitution reactions; Alcohols: esterification, dehydration and oxidation, reaction with sodium, phosphorus halides, $ZnCl_2/conc.-HCl$, conversion of alcohols into aldehydes and ketones; Aldehydes and Ketones: oxidation, reduction, oxime and hydrazone formation; aldol condensation, Perkin reaction; Cannizzaro reaction; haloform reaction and nucleophilic addition reactions (Grignard addition); Carboxylic acids: formation of esters, acid chlorides and amides, ester hydrolysis; Amines: basicity of substituted anilines and aliphatic amines, preparation from nitro compounds, reaction with nitrous acid, azo coupling reaction of diazonium salts of aromatic amines, Sandmeyer and related reactions of diazonium salts; carbylamine reaction; Haloarenes: nucleophilic aromatic substitution in haloarenes and substituted haloarenes - (excluding Benzyne mechanism and Cine substitution).

Carbohydrates: Classification; mono and disaccharides (glucose and sucrose); Oxidation, reduction, glycoside formation and hydrolysis of sucrose.

Amino acids and peptides: General structure (only primary structure for peptides) and physical properties.

Properties and uses of some important polymers: Natural rubber, cellulose, nylon, teflon and PVC.

Practical organic chemistry: Detection of elements (N, S, halogens); Detection and identification of the following functional groups: hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketone), carboxyl, amino and nitro; Chemical methods of separation of mono-functional organic compounds from binary mixtures.

JEE Physics Syllabus

General: Units and dimensions, dimensional analysis; least count, significant figures; Methods of measurement and error analysis for physical quantities pertaining to the following experiments: Experiments based on using vernier calipers and screw gauge (micrometer), Determination of g using simple pendulum, Young's modulus by Searle's method, Specific heat of a liquid using calorimeter, focal length of a concave mirror and a convex lens using $u-v$ method, Speed of sound using resonance

column, Verification of Ohm's law using voltmeter and ammeter, and specific resistance of the material of a wire using meter bridge and post office box.

Mechanics: Kinematics in one and two dimensions (Cartesian coordinates only), projectiles; Circular motion (uniform and non-uniform); Relative velocity.

Newton's laws of motion; Inertial and uniformly accelerated frames of reference; Static and dynamic friction; Kinetic and potential energy; Work and power; Conservation of linear momentum and mechanical energy.

Systems of particles; Centre of mass and its motion; Impulse; Elastic and inelastic collisions.

Law of gravitation; Gravitational potential and field; Acceleration due to gravity; Motion of planets and satellites in circular orbits.

Rigid body, moment of inertia, parallel and perpendicular axes theorems, moment of inertia of uniform bodies with simple geometrical shapes; Angular momentum; Torque; Conservation of angular momentum; Dynamics of rigid bodies with fixed axis of rotation; Rolling without slipping of rings, cylinders and spheres;

Equilibrium of rigid bodies; Collision of point masses with rigid bodies.

Linear and angular simple harmonic motions.

Hooke's law, Young's modulus.

Pressure in a fluid; Pascal's law; Buoyancy; Surface energy and surface tension, capillary rise; Viscosity (Poiseuille's equation excluded), Stoke's law; Terminal velocity, Streamline flow, Equation of continuity, Bernoulli's theorem and its applications.

Wave motion (plane waves only), longitudinal and transverse waves, Superposition of waves; progressive and stationary waves; Vibration of strings and air columns. Resonance; Beats; Speed of sound in gases; Doppler effect (in sound).

Thermal physics: Thermal expansion of solids, liquids and gases; Calorimetry, latent heat; Heat conduction in one dimension; Elementary concepts of convection and radiation; Newton's law of cooling; Ideal gas laws; Specific heats (C_v and C_p for monatomic and diatomic gases); Isothermal and adiabatic processes, bulk modulus of gases; Equivalence of heat and work; First law of thermodynamics and its

applications (only for ideal gases). Blackbody radiation: absorptive and emissive powers; Kirchhoff's law, Wien's displacement law, Stefan's law.

Electricity and magnetism: Coulomb's law; Electric field and potential; Electrical Potential energy of a system of point charges and of electrical dipoles in a uniform electrostatic field, Electric field lines; Flux of electric field; Gauss's law and its application in simple cases, such as, to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell.

Capacitance; Parallel plate capacitor with and without dielectrics; Capacitors in series and parallel; Energy stored in a capacitor.

Electric current: Ohm's law; Series and parallel arrangements of resistances and cells; Kirchhoff's laws and simple applications; Heating effect of current.

Biot-Savart law and Ampere's law, magnetic field near a current-carrying straight wire, along the axis of a circular coil and inside a long straight solenoid; Force on a moving charge and

on a current-carrying wire in a uniform magnetic field.

Magnetic moment of a current loop; Effect of a uniform magnetic field on a current loop; Moving coil galvanometer, voltmeter, ammeter and their conversions.

Electromagnetic induction: Faraday's law, Lenz's law; Self and mutual inductance; RC, LR and LC circuits with d.c. and a.c. sources.

Optics: Rectilinear propagation of light; Reflection and refraction at plane and spherical surfaces; Total internal reflection; Deviation and dispersion of light by a prism; Thin lenses; Combinations of mirrors and thin lenses; Magnification.

Wave nature of light: Huygen's principle, interference limited to Young's double-slit experiment.

Modern physics: Atomic nucleus; Alpha, beta and gamma radiations; Law of radioactive decay; Decay constant; Half-life and mean life; Binding energy and its calculation; Fission and fusion processes; Energy calculation in these processes.

Photoelectric effect; Bohr's theory of hydrogen-like atoms; Characteristic and continuous X-rays, Moseley's law; de Broglie wavelength of matter waves.

JEE Syllabus for Aptitude Test in B. Arch. & B. Des.

Freehand drawing: This would comprise of simple drawing depicting the total object in its right form and proportion, surface texture, relative location and details of its component parts in appropriate scale. Common domestic or day-to-day life usable objects like furniture, equipment, etc., from memory.

Geometrical drawing: Exercises in geometrical drawing containing lines, angles, triangles, quadrilaterals, polygons, circles etc. Study of plan (top view), elevation (front or side views) of simple solid objects like prisms, cones, cylinders, cubes, splayed surface holders etc.

Three-dimensional perception:

Understanding and appreciation of three-dimensional forms with building elements, colour, volume and orientation. Visualization through structuring objects in memory.

Imagination and aesthetic sensitivity:

Composition exercise with given elements.

Context mapping. Creativity check through innovative uncommon test with familiar objects. Sense of colour grouping or application.

Architectural awareness: General interest and awareness of famous architectural creations - both national and international, places and personalities (architects, designers etc.) in the related domain.

Books For IIT

I suggest following books for IIT JEE preparation:

Physics

- MECHANICS
 - Physics by H.C. Verma
 - Problems in physics by I.E. Irodov
 - Resnick and Halliday
- ELECTRICITY AND MAGNETISM
 - Resnick and Halliday
 - Circuits devices and systems by R.J. Smith
 - Problems in physics by I.E. Irodov
- OPTICS

- Physics by H.C. Verma
- MODERN PHYSICS
 - Physics by H.C. Verma
 - Problems in Physics by I.E. Irodov
- HEAT AND WAVES
 - Physics by H.C. Verma
 - Resnick and Halliday

Chemistry

- ORGANIC CHEMISTRY
 - Morrison & Boyd
 - Solutions to Morrison Boyd
 - Reaction mechanism in Organic Chemistry by Parmar & Chawla
- INORGANIC CHEMISTRY
 - NCERT Inorganic Chemistry
 - Concise Inorganic Chemistry by J.D. Lee
 - IIT Chemistry by O.P. Aggarwal
- GENERAL CHEMISTRY
 - J.D. Lee
 - O.P. Aggarwal
 - R.C. Mukerjee

Maths

- ALGEBRA
 - High school mathematics by Hall and Knight

- IIT Maths by M.L. Khanna
- CALCULUS amp; ANALYTIC GEOMETRY
 - G.N.Berman
 - Calculus and analytic geometry by Thomas and Finney
 - Coordinate geometry by Loney
 - IIT Maths by M.L. Khanna
 - I.A.Maron
- VECTORS
 - IIT Maths by M.L. Khanna

Starting Preparation For IIT JEE

The best time to start preparation is at the beginning of 11th class. Students are fresh after the break after boards and a lot more can be learnt. Students who start late often end up leaving some key topics of 11th class JEE syllabus. Also, if you start your preparation in 12th class then the amount of hard work is increased manifold due to additional pressure of 12th boards, so chances of getting a high rank in JEE are decreased. There is a big transition from the mugging up study of 10th class to more understanding based study of 11th class. So you shouldn't get bogged down by seeing the level of complexity in JEE exam.

The first two or three months should be spent in revising your basic concepts (topics like algebra, mechanics) which had been taught in 9th class. Concepts in topics like algebra, mechanics and stoichiometry should be studied in great detail as they also form the basis for other topics and are very scoring. There should be no doubt in your mind about these concepts. For these, develop the habit of inquisition. Clear all your doubts so that mentally you feel confident tackling any concept. A key in this area is problem-solving. Regular problem solving not only strengthens the concepts, but also increases your mental sharpness which is must for JEE. Initially problems of low level should be tried and only when you have mastered them, you should go on to solving intricate JEE type problems. You should have systematic plan for the preparation of JEE. Regular hours should be allotted to mastering concepts and problem-solving. It is not necessary to memorise the lessons and formulae. Understand the derivations of formulae and apply the formulae to solving problems. Slowly these formulae will settle down in your brain and you will be able to recall them under any situation. What is required is a clear understanding and an easy familiarity with the concepts and laws. Maximum

attention should be paid to solving problems. Try to be analytical rather than being intuitive. Remember that hardwork pays! You should first take up a problem and try to solve it yourself. You should understand what is given and what is required, recall what principles, laws, equations are involved. Don't hurry to see the solution as it doesn't help you to learn. Only when you've pondered over it over a long time and unable to see any light, should you see the solutions. You would be insulting yourself and seriously hurting your chances of success if you skip these problems or make half-hearted attempts in solving them. An other very important aspect of your JEE preparation will be the coaching institute, whose importance and selection procedure will be delved into in the next section.

election Of Coaching Institutes

This is one of the most important topics which often decides your rank and hence your career. Hence discussion on this topic is indispensable. IIT- JEE coaching has become far too commercialised. Hundreds of coaching institutes have come into existence, claiming hundreds of ranks. It is the student who falls prey to all

these gimmicks and often ends up with either a low rank or failure at JEE. So before joining any coaching institute you should see that the institute should have a strong reputation. Some tips for choosing the right institute are:

- See how old the institute is.
- How many students of the coaching institute got into IIT last year. (Ideally should be greater than 40). Ask the institute to give phone nos. of the successful students, so that you can confirm.
- Talk to 3 or 4 students (should be studious) who are already studying in that institute. Ask them what they feel about the teachers and the management (very important!) of that institute.
- See the experience of the faculty
- See the level of problems in the assignments and whether the study material is regularly updated or not.
- By what do they plan to finish the syllabus
- Finally, see if your parents can pay the fees (generally very huge).

For students living in areas with no coaching institutes or transportation problems, a postal

coaching is a must. Some tips for postal coaching are:

- Most important tip is that the coaching institute that you choose should have a very strong reputation.
- See whether the sets are despatched on time.
- Talk to students who have already enrolled for that institute, and what they feel about the depth of coverage and problem sets.
- See how many postal tests, on-the-spot tests and lecture sessions are there. These are must for removing doubts and strengthening the concepts.

Temperal Balance

- Keep your cool during the paper. If you feel you are getting flustered, close your eyes for some time to regain your composure and concentration.
- Keep yourself in a cheerful and positive mood.
- If you feel tension rising during the paper, take deep breaths to release tension.
- Do not get demotivated or overexcited on seeing the question paper. Keep your balance. Demotivation will make even easy

- questions appear tough and overconfidence will make you commit silly mistakes.
- Do not get depressed by tough questions. Instead remind yourself that these questions are tough for every aspirant.
 - Do not get emotionally attached to any question. It is not necessary that you will be able to solve a question from topics you have prepared well.
 - Do not worry about the minimum cut-off marks for JEE. No one knows about the cut-off for sure, but no one has ever been rejected on the basis of any subject-wise minimum cut-off.
 - Do not argue with anyone about anything before the test.
 - Have faith in God and in yourself. Whatever happens to you will be for the best.

Keep depressing thoughts away

- First of all, realize that you are not the only one facing anxiety. Each IIT-JEE aspirant is facing the same dilemma.
- Also realize that if you have studied even 60% of JEE syllabus properly, you need not harbour negative thoughts. Your success at the screening test is ensured.

- Whenever you feel tensed, start a countdown from 50 to 1. It will help you release tension.
- Light stretching exercise also helps reduce pent-up tension.
- If you are feeling tensed, do not suffer alone. The company of friends and light chit-chat will help you divert your mind from negative thoughts.

Books For IIT

I suggest following books for IIT JEE preparation:

Physics

- MECHANICS
 - Physics by H.C. Verma
 - Problems in physics by I.E. Irodov
 - Resnick and Halliday
- ELECTRICITY AND MAGNETISM
 - Resnick and Halliday
 - Circuits devices and systems by R.J. Smith
 - Problems in physics by I.E. Irodov
- OPTICS
 - Physics by H.C. Verma

- MODERN PHYSICS
 - Physics by H.C. Verma
 - Problems in Physics by I.E. Irodov
- HEAT AND WAVES
 - Physics by H.C. Verma
 - Resnick and Halliday

Chemistry

- ORGANIC CHEMISTRY
 - Morrison & Boyd
 - Solutions to Morrison Boyd
 - Reaction mechanism in Organic Chemistry by Parmar & Chawla
- INORGANIC CHEMISTRY
 - NCERT Inorganic Chemistry
 - Concise Inorganic Chemistry by J.D. Lee
 - IIT Chemistry by O.P. Aggarwal
- GENERAL CHEMISTRY
 - J.D. Lee
 - O.P. Aggarwal
 - R.C. Mukerjee

Maths

- ALGEBRA
 - High school mathematics by Hall and Knight
 - IIT Maths by M.L. Khanna

- CALCULUS amp; ANALYTIC GEOMETRY
 - G.N.Berman
 - Calculus and analytic geometry by Thomas and Finney
 - Coordinate geometry by Loney
 - IIT Maths by M.L. Khanna
 - I.A.Maron
- VECTORS
 - IIT Maths by M.L. Khanna

Course Planning

Course planning is essential in the sense ,that it can get you at the top in rank list.This planning should be done by the student in 11th class itself . From this year, a screening test is being conducted and so proper planning becomes all the more important.Have a look at all the topics and shortlist topics,and months wherein you plan to complete them.Finishing syllabus atleast a month before the exam is essential.The summer vacations in 12th class are the best time to finish a huge lot of syllabus.I can suggest the following course plan for students in 11th class.

JUNE TO OCTOBER : Mathematical concepts used in Physics, Basic mechanics, stoichiometry, general chemistry----atomic structure, chemical

bonding, periodic table, algebra---number theory, quadratic equations, progressions.

OCTOBER TO JANUARY :Complete Mechanics, waves, Physical Chemistry--equilibrium, heat, kinetics, thermochemistry, electrolysis, algebra -----induction, complex numbers, trigonometry.

JANUARY TO MAY : Heat, fluid mechanics, gravitation, Inorganic chemistry---properties and metallurgy of metals and non metals, gas laws, analytic geometry, permutations and combinations, binomial theorem.

MAY TO AUGUST : Electrostatics and electricity, electrochemistry, solutions, solids, qualitative analysis, transition metals, differentiation and integration.

AUGUST TO NOVEMBER : magnetism, optics, modern physics, organic chemistry, differential equations, probability, vectors.

NOVEMBER TO DECEMBER : FINAL REVISION

By following this plan, course will be finished in time and revision can also done, to ensure maximum success in JEE. To maximize your potential you have to planned .My next topic

tells you about certain important topics to which special interest should be given.

Important Topics

Choosing the right topics for maximum study is very important not only for clearing JEE but also for getting a high rank. Lots of topics in JEE syllabus require a huge lot of time, incomparable to that required by other topics. Spending too much time on these topics and ignoring other topics leads to drastic failure in rank. Lots of topics in JEE are very easy and are of NCERT level. The key to topping JEE is to maximize your scoring in these topics which boosts the rank. Many such topics require considerably less time and is much much less than the time required by certain other topics with proportionate marks. You should spend more time on these topics and try to earn full marks in such topics. I list a few of these topics:

MODERN PHYSICS AND ELECTRONICS :most of the questions easy and similar to past JEE questions.

WAVE OPTICS :most of the questions are similar to past JEE questions

INORGANIC CHEMISTRY AND GENERAL CHEMISTRY :most of the questions are of NCERT level and are simple.

SOLID STATE :Most of the questions are very easy.

PROBABILITY AND DIFFERENTIATION :most of the questions are simple and NCERT level.

DIFFERENTIAL EQUATIONS :most of the questions are similar to past JEE questions.

By spending legible time on these topics ,the scoring in JEE will be boosted and only will you clear JEE but also get a high rank.But beware , don't neglect there other topics. In topics like mechanics, electricity , physical chemistry and analytical geometry , if the concepts are clearly understood then many of the questions pertaining to these topics can be easily handled.My next topic discusses the marks and the rank which can be expected with those marks.

Examination Strategies For IIT JEE

Revision related tips

- About 20 days before the JEE Screening Test, start getting acquainted with a wide variety of topics to improve the range of numericals you can attempt. Do not attempt lengthy questions, and focus instead on objective, numerical questions to practice as many types of questions as you can. You should look at breadth rather than depth in these 20 days.
- Revise all important concepts and formulae, so that they are on your tips and come to you without any effort or thought.
- The screening paper gives equal weightage to all three subjects " and so should your screening preparation.
- Remember - The screening test has negative marking for wrong answers. So your familiarity with concepts will be crucial if you take the calculated risk of logical guessing.

Things to keep in mind one day before the examination:

- You need at least 6-8 hours of sleep before the examination to keep yourself fresh while solving questions.

- Eat a light meal so that you do not feel drowsy or lethargic during the paper.
- Revise only those topics that you have studied earlier. Do not start reading any new topics just before the examination, since this will be a waste of time and you may lose the information you have already grasped.
- You should reach the test center at least half an hour before the exam and if you haven't seen the center before, then you must go and visit the center on the day before the exam.

Note: If your examination center is in another city-

- Reach the city positively on the day before the exam.
 - Ensure the place of your stay there is calm, clean and conducive to study.
 - In actuality it does not make any difference whether the center is in your city or in some other city. So get the fear of an unknown city out of your mind.
- Never go to the center on an empty stomach. Always keep biscuits, fruits etc. handy.

- Some students complain of nausea or headache close to the test. So keep relevant medicine handy.
- If you plan to ride your own vehicle to the center, ensure it is in proper running condition and has enough fuel in its tank.
- If you do not have a vehicle, ensure a means of traveling that reaches you to the center well in time, and give at least half an hour of time for unforeseen delays like traffic jams and rush hour traffic.
- Keep a wristwatch, your permission letter, a pen, two pencils (sharpened at both ends), an eraser, a sharpener and other relevant stationary systematically with you.

Some important points to keep in mind during the examination

General Instructions

- Synchronize your wristwatch with the center clock.
- Open your permission letter and keep it on your table.
- Do not use a red pen.

Points regarding presentation

- Start attempting the question paper only after reading the instructions given on it very carefully.
- While attempting questions, go on segregating them by the A, B, C method **A** :These questions are from topics that you have prepared well, and you can clearly comprehend the meaning of these questions. You have done questions containing similar concept earlier and you are confident that you will be able to solve these. **B** :You know you can solve these questions but they are time-consuming, nevertheless you are confident you will be able to crack them when you come back to them. These questions should be attempted in the second round of question attempting, i.e. when you have solved all questions marked with a B. **C** :You don't know head or tail of these questions and you should not waste time attempting them.
- Attempting to solve all questions in haste increases the chances of error. It is better to solve slightly fewer questions faultlessly.
- Never attempt two questions at the same time. Concentrate on one question at a time.

- Carry out all rough work only in the space given in the paper.
- If you need a diagram to understand questions in say physics or coordinate geometry etc., do make one.
- Use the value of constants given in the paper in solving a numerical. If the value is not mentioned, use the one you remember.
- Give all three subjects equal time - i.e. 50 minutes each for physics, chemistry and mathematics.
- While attempting the answers, do not shade the answer key immediately. Instead, tick your response with a pencil 4 on the answer key.
- Keep marking questions with A, B, C in the first round of solving the paper. All questions should be segregated into one of these three categories. This saves valuable time later.
- Fill out the answer key 30 minutes before final time. Fill out the responses to questions attempted after this directly in the answer key.

Examination Strategies for IIT JEE

Revision related tips

- About 20 days before the JEE Screening Test, start getting acquainted with a wide variety of topics to improve the range of numericals you can attempt. Do not attempt lengthy questions, and focus instead on objective, numerical questions to practice as many types of questions as you can. You should look at breadth rather than depth in these 20 days.
- Revise all important concepts and formulae, so that they are on your tips and come to you without any effort or thought.
- The screening paper gives equal weightage to all three subjects " and so should your screening preparation.
- Remember - The screening test has negative marking for wrong answers. So your familiarity with concepts will be crucial if you take the calculated risk of logical guessing.

Things to keep in mind one day before the examination:

- You need at least 6-8 hours of sleep before the examination to keep yourself fresh while solving questions.
- Eat a light meal so that you do not feel drowsy or lethargic during the paper.
- Revise only those topics that you have studied earlier. Do not start reading any new topics just before the examination, since this will be a waste of time and you may lose the information you have already grasped.
- You should reach the test center at least half an hour before the exam and if you haven't seen the center before, then you must go and visit the center on the day before the exam.

Note: If your examination center is in another city-

- Reach the city positively on the day before the exam.
- Ensure the place of your stay there is calm, clean and conducive to study.
- In actuality it does not make any difference whether the center is in your city or in some other city. So get the fear of an unknown city out of your mind.

- Never go to the center on an empty stomach. Always keep biscuits, fruits etc. handy.
- Some students complain of nausea or headache close to the test. So keep relevant medicine handy.
- If you plan to ride your own vehicle to the center, ensure it is in proper running condition and has enough fuel in its tank.
- If you do not have a vehicle, ensure a means of traveling that reaches you to the center well in time, and give at least half an hour of time for unforeseen delays like traffic jams and rush hour traffic.
- Keep a wristwatch, your permission letter, a pen, two pencils (sharpened at both ends), an eraser, a sharpener and other relevant stationary systematically with you.

Some important points to keep in mind during the examination

General Instructions

- Synchronize your wristwatch with the center clock.
- Open your permission letter and keep it on your table.
- Do not use a red pen.

Points regarding presentation

- Start attempting the question paper only after reading the instructions given on it very carefully.
- While attempting questions, go on segregating them by the A, B, C method **A** :These questions are from topics that you have prepared well, and you can clearly comprehend the meaning of these questions. You have done questions containing similar concept earlier and you are confident that you will be able to solve these. **B** :You know you can solve these questions but they are time-consuming, nevertheless you are confident you will be able to crack them when you come back to them. These questions should be attempted in the second round of question attempting, i.e. when you have solved all questions marked with a B. **C** :You don't know head or tail of these questions and you should not waste time attempting them.
- Attempting to solve all questions in haste increases the chances of error. It is better to solve slightly fewer questions faultlessly.

- Never attempt two questions at the same time. Concentrate on one question at a time.
- Carry out all rough work only in the space given in the paper.
- If you need a diagram to understand questions in say physics or coordinate geometry etc., do make one.
- Use the value of constants given in the paper in solving a numerical. If the value is not mentioned, use the one you remember.
- Give all three subjects equal time - i.e. 50 minutes each for physics, chemistry and mathematics.
- While attempting the answers, do not shade the answer key immediately. Instead, tick your response with a pencil 4 on the answer key.
- Keep marking questions with A, B, C in the first round of solving the paper. All questions should be segregated into one of these three categories. This saves valuable time later.
- Fill out the answer key 30 minutes before final time. Fill out the responses to questions attempted after this directly in the answer key.

Courses Offered By IIT

[Course B.Tech. 4 Years](#)

[B.Pharm. 4 Years](#)

[B.Des. 4 years](#)

[B.Arch. 5 years](#)

[Course B.Tech. 4 Years](#)

[M.Tech. Integrated 5 years](#)

[M.Tech. Dual Degree 5 Years](#)

Index	Course B.Tech. 4 Years	IIT Bombay	IIT Delhi	IIT Guwahati	IIT Kanpur	IIT Kharagpur	IIT Madras	IIT Roorkee	IT-BHU Varanasi	ISM Dhanbad
1	Aerospace Engineering	*			*	*	*			
2	Agricultural & Food Engineering					*				
3	Biological Sciences and Bioengineering				*					
4	Biotechnology			*			*			
5	Biotechnology & Biochemical Engineering					*				
6	Ceramic Engineering								*	
7	Chemical Engineering	*	*	*	*	*	*	*	*	
8	Civil Engineering	*	*	*	*	*	*	*	*	
9	Computer Science & Engineering	*	*	*	*	*	*	*	*	*
10	Electrical Engineering	*	*	*	*	*	*	*	*	
11	Electrical Engineering (Power)		*							
12	Electronics &			*				*		

	Communication Engineering									
13	Electronics & Electrical Communication Engineering					*				
14	Electronics Engineering							*	*	
15	Energy Engineering					*				
16	Engineering Physics	*	*				*			
17	Industrial Engineering					*				
18	Production and Industrial Engineering		*					*		
19	Instrumentation Engineering					*				
20	Manufacturing Science and Engineering					*				
21	Materials & Metallurgical Engineering				*					
22	Mechanical Engineering	*	*	*	*	*	*	*	*	*
23	Metallurgical & Materials Engineering					*	*	*		
24	Metallurgical Engineering & Materials Science	*								
25	Metallurgical Engineering							*		
26	Mineral Engineering									*
27	Mining Engineering					*		*	*	
28	Mining Machinery Engineering									*
29	Naval Architecture & Ocean						*			

	Engineering Ocean Engineering & Naval Architecture					*				
30										
31	Petroleum Engineering									*
32	Pulp & Paper Engineering							*		
33	Textile Technology		*							

[Top](#)

B.Pharm. 4 Years

34	Pharmaceutics								*	
----	---------------	--	--	--	--	--	--	--	---	--

[Top](#)

B. Des. 4 years

35	Design			*						
----	--------	--	--	---	--	--	--	--	--	--

[Top](#)

B. Arch. 5 years

36	Architecture					*		*		
----	--------------	--	--	--	--	---	--	---	--	--

Index	Course B.Tech. 4 Years	IIT Bomb ay	IIT Del hi	IIT Guwah ati	IIT Kanp ur	IIT Kharagp ur	IIT Madr as	IIT Roor kee	IT- BHU Varana si	ISM Dhanba d
-------	------------------------------	-------------------	------------------	---------------------	-------------------	----------------------	-------------------	--------------------	----------------------------	--------------------

37	Applied Geology				*					
----	-----------------	--	--	--	---	--	--	--	--	--

38	Chemistry	*			*					
----	-----------	---	--	--	---	--	--	--	--	--

39	Exploration Geophysics					*				
----	---------------------------	--	--	--	--	---	--	--	--	--

40	Industrial Chemistry					*				
----	-------------------------	--	--	--	--	---	--	--	--	--

41	Mathematics & Scientific Computing				*					
----	--	--	--	--	---	--	--	--	--	--

42	Mathematics and Computing					*				
----	------------------------------	--	--	--	--	---	--	--	--	--

43	Physics				*	*				
----	---------	--	--	--	---	---	--	--	--	--

[Top](#)

M.Tech. Integrated 5 years

44	Mathematics & Computing		*							
----	----------------------------	--	---	--	--	--	--	--	--	--

[Top](#)

M.Tech. Dual Degree 5 Years

45	Aerospace Engineering	*			*	*	*			
----	--------------------------	---	--	--	---	---	---	--	--	--

46	Agricultural and					*				
----	------------------	--	--	--	--	---	--	--	--	--

	Food Engineering: Water Resources Development & Management									
47	Biochemical Engineering & Biotechnology		*							
48	Biotechnology						*			
49	Biotechnology & Bio-chemical Engineering					*				
50	Chemical Engineering				*	*	*			
51	Chemical Engineering with M. Tech. in Computer Applic ation in Chemical Engineering		*							
52	Chemical Engineering with M. Tech. in Hydrocarbon Engineering							*		
53	Chemical Engineering with M. Tech. in Process Engineering & Design		*							
54	Chemical Engineering with M. Tech. in Process System Design & Engineering		*							
55	Civil Engineering				*					
56	Civil Engineering with M. Tech. in Infrastructural Civil Engineering						*			
57	Civil Engineering	*				*				

	with M. Tech. in Structural Engineering									
58	Computer Science & Engineering	*	*		*	*	*			
59	Computer Science & Engineering with M. Tech. in Information Technology							*		
60	Electrical Engineering				*					
70	Industrial Engineering with M. Tech. in Industrial Engineering and Management					*				
71	Manufacturing Science & Engineering with M. Tech. in Industrial Engineering & Management						*			
72	Mechanical Engineering						*			
73	Mechanical Engineering with M. Tech. in Computer Aided Design & Automation	*								
74	Mechanical Engineering with M. Tech. in Computer Integrated Manufacturing	*								
75	Mechanical Engineering with M. Tech. in						*			

83	Metallurgical & Materials Engineering with M. Tech. in Metallurgical Engineering					*			
84	Metallurgical Engineering & Material Science with M. Tech. in Metallurgical Process Engineering	*							
85	Mining Engineering				*				
86	Naval Architecture & Ocean Engineering					*			
87	Ocean Engineering & Naval Architecture				*				

Articles on IITs

Why the IIT-JEE pattern was changed

The Rediff Interview/V G Idichandy, Professor, IIT-Madras

October 11, 2005

The IIT-JEE reforms sought to be introduced by the human resources development ministry have sparked a national debate in India.

While the HRD ministry states the new exam pattern is an attempt to curb students' over-

dependence on coaching classes and to bring some respectability to the board exams, coaching classes and a section of students question the need for introducing the reforms in the middle of the academic year without prior warning.

This year, about 198,000 students appeared for 4,935 seats at the seven Institutes of Technology; the Institute of Technology-Banaras Hindu University; and the Indian School of Mines, Dhanbad.

In the wake of these reforms, Professor V G Idichandy of IIT-Madras discusses with Yogesh K Upadhyaya, the reasons for a change in the IIT-Joint Entrance Examination pattern and the eligibility criteria.

Prof V G Idichandy, convener of STF was the chairman of JEE, IIT-Madras in 1999. He is currently a professor in the department of Ocean Engineering at IIT-Madras and the dean of students.

In February 2004, the directors of IITs decided to set up a special task force to recommend reforms for the JEE. Prof Idichandy was the convener of the Special Task Force. Being JEE

chairmen at different times, all the STF members were aware of the issues that needed to be sorted out.

They collected a lot of relevant information, had consultations and submitted a report to the government. The present reforms for JEE were deliberated upon at different levels and they represent the collective efforts of all IITs.

Excerpts from the interview:

Could you explain the changes proposed in IIT-JEE pattern and eligibility criteria for appearing in the exam?

The decisions approved by the ministry of human resource development are:

- JEE will continue to be the sole criterion for ranking the students for admission to IITs, IT-BHU, ISM Dhanbad and other participating institutes.
- School results will be factored into the admission process for the IITs. Only those students who secure a first class or equivalent in the plus-2 examinations will be eligible for admission to the IITs.
- For students belonging to SC/ST there will be a relaxation of 5 per cent of marks below

- the level of marks prescribed in the respective examination.
- JEE will be a single objective type examination. The question paper can include short write-up on a topic in physics, chemistry or even mathematics followed by objective type questions that are based on the write-up.
 - A student can write the JEE in the year in which he/she passes the XII standard examination and/or in the following year.
 - Those who join any of the IITs, IT-BHU, and ISM Dhanbad through JEE-2006 will not be permitted to appear for JEE in the future.
 - The procedure will be reviewed after JEE-2006. A one-time exception would be allowed for those who passed their qualifying examination in 2005 or earlier.

What prompted the expert panel to change the pattern of exam, from two stages (screening and main) to only one-step exam?

The committee which suggested the screening test ('98 and '99, JEE committees) recommended a review of the examination system after five years. The screening test is a test of the aptitude of the student while the

main examination is a test of his/her analytical ability.

We have completed six JEEs after this system was introduced. The IIT system is convinced that an objective type examination can be designed to test both aptitude and analytical ability. Based on this the special task force recommended a comprehensive objective test over a two stage examination.

We must keep in mind that clearing JEE is not an end in itself but it is meant for the very limited purpose of selection of students to an academic programme.

There is a restriction on appearing for more than two times in the exam. There is also a restriction on appearing again, if someone has secured a seat at any of the seven IITs, IT-BHU, and ISM. Why?

The main reason for adopting these two measures is to provide a level playing field for candidates appearing for JEE. Now the JEE stipulates a first class in higher secondary school as the minimum eligibility requirement.

Are we justified in allowing candidates with additional years of preparation to take the exam

along with fresh students just out of the school? The candidates appearing two or three years after leaving the school get additional time for JEE-specific preparations, have an altogether different mindset and approach to life and education, when compared to those directly out from the schools.

Two or three years of intensive preparation in specific subjects does not make these candidates any wiser as the training is more to beat the examination rather than for the pleasure of learning.

More or less the same reason is valid for those who have already joined the IITs. In addition, they deny opportunity for others who would have gained entry into one of the IITs.

There were protests in New Delhi and other cities. Why didn't they protest when the main exam-type pattern was changed to two-stage exam (main plus screening) exam in the year 2000?

In the last six years, the IIT system has received much more visibility and recognition. Many students and parents believe that an IIT degree is a passport to success and fame. Those who prepare the students for JEE at

astronomical costs, exploit this attitude or misconception to their advantage and would like a predictable, easily recognizable pattern for JEE, and are scared of changes.

I don't believe that the stage-managed protests in some cities were done by students. It does not require much research to identify those behind the protesters. Just like any other unjustified protests, agitation against changes in JEE has been instigated by people with vested interests.

The students and their parents should realise the fact that there are equally good/better opportunities outside the IIT system.

How will a two-tier system help students?

The two-tier JEE tests the aptitude of students for professional education through a screening test and their analytical ability through the main examination.

Many a time the parents decide what their children should study. We have come across students who get admission because of rigorous coaching. Later, they struggle to complete the programme as they have no aptitude for an engineering education. We feel that one way of

countering this situation is by allotting branches of study at the end of second or third semester and not at the time of admission as practiced today.

Such a procedure will give the students enough time to study various options available to them and choose the branch most suited to their aptitude. I hope the IITs, in due course, will look at this suggestion seriously.

On the requirement of minimum 60 per cent marks in the XII board exam, critics argue that different boards give marks in different ways. For instance, CBSE is considered lenient in grading, while it is relatively difficult to achieve first class in some boards, such as Uttar Pradesh and Bihar. Also, one of the high school boards in eastern India immediately announced the plan to grade the XII standard exam liberally, so that no one from the state is denied admission to IITs. How will you counter this?

Ideally, normalised scores of the different boards should be used. With about 40 school boards in our country, collecting results, arriving at normalised scores, and above all, convincing

the stakeholders of different eligibility marks for different boards are all Herculean tasks -- next to impossible, in fact -- considering the time factor involved.

First class (60 per cent) in a qualifying exam is much more simple, easily understood and accepted.

Though the STF recommended normalised scores, the Standing Committee of the IIT Council (SCIC) which includes the directors of the IITs as members decided on first class in higher secondary as minimum criteria and we saw a lot more wisdom in that approach. Our aim was to give adequate importance to school education in our country. We are extremely happy that all the school boards whole-heartedly welcomed the move.

Don't you think the timing for the announcement of reforms was wrong, as many students have already enrolled in coaching classes, and they are in the middle of an academic year in high school?

IITs cannot introduce reforms in JEE for the convenience of those in the coaching classes. The invariant pattern of the entrance examination of the premier institutions made

possible the mushrooming of coaching institutions. They grew because of the demand for quality higher education, seats for which are too few in our country.

Now it has reached a stage where genuine students with raw intelligence and aptitude armed with the knowledge gained in schools find it difficult to compete and gain admission to the premier institutions.

The main target is the student presently in the XII standard or equivalent ready to take an examination, irrespective of the pattern and with all its surprises.

Every year JEE is announced in the month of September. This year was no exception. Eligibility requirements and the type of examination are always explained in the information brochure included along with the application form.

It is reported that over 95 per cent of the students who clear IIT-JEE, have joined coaching classes. This is an unusually high number compared to other national-level exams, such as AIEEE. Why there is a rush for this exam? How will the new reforms

help curb the coaching class dependence for an IIT-JEE aspirant?

I have already explained the reasons for the rush for JEE and the consequent enrolment in coaching institutions. We are convinced that the present reforms in JEE will reduce the necessity for additional preparation.

IITs should be allowed to conduct JEE 2006 with the present reforms to prove the point. If the panic reactions witnessed in some cities where coaching centres are concentrated are some indications, the IITs have already won the first round!

Please tell us more about IIT-JEE; when it was introduced and why it has an objective format.

JEE has a long history. It started in the early sixties and evolved through years. There were changes of various sorts over the years. For instance, English was a compulsory paper once upon a time. Later, English, though compulsory, was not in the reckoning for deciding the ranks.

Questions in Hindi and an option for answering in Hindi and regional languages were introduced during eighties. Objective type questions were a

part of the JEE for some time. Screening tests also went through metamorphoses before the present pattern was adopted in the year 2000.

JEE is well known for its credibility and the IITs consider JEE very sacred and are very proud of its autonomy.

IITs take extra care and precautions to keep the credibility intact and the faith of the general public and students in the JEE system notwithstanding the incident in 1997 that shook the very foundations of JEE.

But with the strong support of the ministry of HRD, IITs outlived the threat and restored all that was lost within a short time. The whole country recognises the independence of JEE and importance of IITs and that is precisely why anything about IITs receives so much public attention. This public audit makes us more responsible and to perform better.

Don't you agree that school education has faced a setback with students concentrating more on how to crack the entrance tests?

Yes, school education has become a big casualty, as there is no credit for twelve years of

schooling for admission to the institutions of higher education, be it state-run or central. (Tamil Nadu is perhaps the only state, where equal importance was given to both school performance and entrance test for admission to professional courses.

Though the TN government announced admissions to professional courses based on school results from 2005, because of the procedural issues, it was not implemented).

Why should anyone take school education seriously, when admissions to higher education is based on one entrance test and the eligibility for admission to national institutions is a just a pass in qualifying examination?

Under such a situation, it is but natural for a student to spent time preparing for entrance examination rather than in the school.

What changes do you foresee once these reforms are implemented?

The measures recommended to reform JEE will pave the way for visible changes in the attitudes of students to the school education. When JEE questions are of the level of XII standard, students and parents will realise the futility of

going through the rigours of coaching institutions and neglecting school education.

We also feel the rural students and girls will benefit from these reforms but only the future would tell how far we are justified in making these assumptions. Girls constitute only 8 per cent of the student population in IITs (IIT-Madras taken as reference). But school results show better performers are girls, so this could be the beginning of a new trend.

Reservation Of Seats

SC/ST Candidates

15% and 7.5% seats in each course are reserved for candidates belonging to SC and ST categories, respectively. Candidates belonging to these categories are admitted on relaxed criteria (compared to GE/DS category candidates). In case all the reserved seats are not filled, a further relaxation is made in the admission criteria and a limited number of candidates are admitted to a Preparatory Course of one-year duration. This course attempts to prepare the students in Mathematics, Chemistry, and Physics. On successful completion of the course, the students will be offered direct

admission to the undergraduate programmes in July 2006 against the unfilled reserved seats for JEE-2005. SC and ST candidates will be required to produce the original caste/tribe certificate issued by a competent authority (list given in Appendix-III) at the time of counselling, failing which they will not be considered for admission. Seats remaining vacant in these categories shall not be filled by candidates belonging to any other category.

Persons with Disabilities (PD)

3% seats are reserved for PD candidates (including leprosy-cured) as specified by the Government of India, who are otherwise fit to pursue the course and qualify JEE with relaxed norms relevant to this category. For any category of disability (viz., locomotor, visual, speech and hearing), benefit would be given to those candidates who have at least 40% permanent physical impairment in relation to a body part / system / extremity / extremities / whole body etc.

The candidates in this category will be required to be certified by a Medical Board. The Medical Board will decide the following:

Whether the candidate qualifies for the benefits under this category, and If the disability is likely to interfere in his/her studies.

The Medical Board duly constituted for this purpose shall meet at the time of counselling at IIT Delhi on June 27, 2005 at 3.00 p.m.

Candidates, who are not certified by the Medical Board as PD, will not be counselled under this category.

Authorities Who May Issue Caste/Tribe Certificate

(Do not enclose the certificate or its copy with the application form. The certificate is to be produced in original at the time of counselling.)

SC/ST Candidates should submit certificate issued by District Magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Additional Deputy Commissioner/ Deputy Collector/ 1st Class Stipendary Magistrate/ City Magistrate/ Sub-Divisional Magistrate/ Taluka Magistrate / Executive Magistrate/ Extra Assistant Commissioner/ Chief Presidency Magistrate/ Additional Chief Presidency Magistrate/ Presidency Magistr

ate/ Revenue Officer not below the rank of Tehsildar / Sub-Divisional Officer of the area where the candidate and/or his/her family normally resides/ Administrator/ Secretary to Administrator/ Development Officer (Lakshadweep Island). Certificate issued by any other authority will be rejected.

ALLM