



WEST BENGAL JOINT ENTRANCE EXAMINATIONS BOARD
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Website: www.wbjeeb.in

INFORMATION BROCHURE – JEEDEC - 2016

West Bengal Joint Entrance Examinations Board will conduct the Joint Entrance Examination/Test titled 'JEEDEC-2016' for admission to Five years evening courses for Bachelor Degree in Civil / Electrical / Mechanical Engineering for the academic year 2016-17 in Jadavpur University.

SCHEDULE:

On-line form fill up	22.03.2016 to 22.04.2016
Fee payment	23.03.2016 to 22.04.2016
Download Admit card	02.05.2016 to 08.05.2016
JEEDEC Examination	08.05.2016 12 Noon to 2 PM
Publication of result	2 nd week of June 2016
Counselling	To be decided by the Jadavpur University

NB: The schedule may be changed in case of exigency and if so, the same will be notified well in advance through the Board's website – www.wbjeeb.in

EXAMINATION AND QUESTION PATTERN:

There will be separate question papers for Electrical, Mechanical and Civil Engineering candidates.

The paper will contain 100 MCQ type questions. Answers are to be marked (bubbled) on **OMR** Answer Sheets using black /blue ball point pen.

Each question will have four answer options of which only one is correct. Each correct response will fetch 1 mark, each incorrect response will fetch (-1/4) mark, whereas no response will fetch zero mark. Multiple responses for any question will fetch (-1/4) mark.

The questions will be in English language only.

ELIGIBILITY:

The applicant

1. Must be a citizen of India.
2. Must have passed Diploma Examination from UGC recognized Indian University / Government / Statutory Body in Civil, Electrical or Mechanical Engineering with at least 60% marks or equivalent Grade Point (at least 45% marks or equivalent Grade Point for SC/ST/Pwd)
3. Must have at least one year relevant experience in the respective field since publication of his/her Diploma examination result till the last date of submission of application forms.
4. If selected for admission, must obtain '**No Objection Certificate**' for the course of study from his/her employer.

AGE LIMIT:

There is no age limit.

SEATS AVAILABLE:

28 seats for General, 9 for SC, 2 for ST and 1 for Pwd candidates are available in each course.

It should be noted that a diploma holder will be admitted to evening **Degree course in Engineering in respect of the discipline for which Diploma is awarded.**

RESERVATION:

As per Government of India Reservation policy.

ONLINE APPLICATION PROCEDURE:

Application has to be filled up ONLINE at the portal: www.wbjeeb.in

The candidate needs to visit the portal and follow the links <EXAMINATIONS> - <JEEDEC> - <ONLINE APPLICATION>. The form is interactive in nature. There are four steps in application form submission as follows:

Step – 1. Registration:

The candidate has to input name, date of birth, gender, e-mail id and mobile number. Candidate must take utmost care to give these inputs. If mistakes are committed **there is no chance of correction**. The given mobile number and e-mail id will be used for all further communication. At the end of this step the candidate may opt to logout or continue to next step. For further log in, candidate has to use his/her application number and date of birth.

Step - 2. Application Form:

In this step the candidate has to enter his/her personal and academic information and also two choices of examination centre. The fields mark with (*) are mandatory fields, i.e. mandatory to be filled in.

Step - 3 : Image Upload

At this step the candidate has to upload scanned copies of his/her photograph, signature and Admit Card / Mark sheet of 10th standard as age proof.

Recent coloured passport sized photograph	storage size : 10 to 100 KB (.JPEG/.JPG)
Signature	storage size : 10 to 100 KB (.JPEG/.JPG)
Age proof (Admit Card/Mark sheet of 10 th standard examination)	storage size : 100 to 300 KB (.JPEG/.JPG)

Essential features of the photograph:

- The photograph must be in colour taken preferably after 01.03.2016.
- Low quality photographs, such as by mobile phones or self composed portraits may result in rejection of application.
- Background of the photograph must be of very light colour.
- The face should occupy at least 50% area of the photograph with a full face view looking into the camera directly.
- Spectacles of dark or tinted glasses are not permitted.
- Main feature of the face must not be covered by shadow, cloth or hair of the head. Forehead, eyes, nose and chin must be clearly visible.
- The photograph must match with the candidate's appearance at the time of examination.

At the end of 3rd step an e-challan will be generated for payment.

Step - 4: Payment and Confirmation

The candidate has to take a print out of the e-challan for payment of fees of **Rs. 510/-** (Application fee = Rs. 500/- and Bank Charges = Rs. 10/-). Carry the e-challan to any branch of Allahabad Bank and make payment.

After making the payment, the candidate has to login again and enter relevant payment details.

At the end of these four steps candidate will "**SUBMIT**" finally, when system will automatically generate a confirmation page. The candidate needs to download, take a print out and preserve this confirmation page.

ADMIT CARD:

Admit cards will be generated on the notified date for the student to download and take a print.

Candidate has to carry to the examination centre a printed hard copy of the admit card along with a photograph identical with the one uploaded earlier.

Candidates must ensure that the admit card is not mutilated/ distorted/ soiled even by accident. Candidates with such mutilated/ distorted/ soiled admit cards will not be allowed to appear in JEEDEC-2016.

Candidates are advised to retain their admit cards carefully in secured place in undamaged condition in all respects till completion of admission procedure.

EXAMINATION CENTERS :

The examination will be conducted in centre(s) located at **KOLKATA and HOWRAH**. Any examination center may be dropped if adequate numbers of candidates are not available. The allotment of examination centre is fully at the discretion of the Board. Allotment made by the Board is final and no request for changing the zone/centre of examination will be entertained under any circumstances.

RESULT :

The Board will publish the merit list and final allotment of seats will be made through counseling to be conducted by the WBJEEB. The Board neither publishes nor communicates result to any individual applicant. It does not have any provision for post-publication scrutiny or review and hence such application will not be entertained. The tentative date of publication of result on website: www.wbjeeb.in is in **2nd week of June, 2016**

COUNSELLING AND ADMISSION:

The published result will be handed over to Jadavpur University, who will thereafter conduct counselling and admission.

All applicants who appear to be prima facie eligible will be issued admit cards and shall be provisionally permitted to sit for JEEDEC-2016. But if during counselling or at any stage later it is found that the applicant is otherwise ineligible, his/her candidature shall be cancelled even if he/she has appeared in JEEDEC-2016 and secured a position in the merit list. The candidature shall also be cancelled if he/she fails to produce any of the required documents in original as specified earlier or if any document is found to be faulty during counselling/ admission/ registration.

Admission to the Jadavpur University shall be governed by the University rules and regulations. Compliance with requirements for making application for the Joint Entrance Examination does not guarantee admission to the University.

LEGAL JURISDICTION :

All disputes pertaining to conduct of JEEDEC-2016 shall fall within the jurisdiction of Kolkata only.

The Board will not be a party pertaining to any dispute arising out in the process of admission to Five years evening courses for Bachelor Degree in Civil / Electrical / Mechanical Engineering for the academic year 2016-17 in Jadavpur University.

SYLLABUS :

Civil Engineering :

Part – A, Applied Mechanics:

Friction between solid bodies; equilibrium of rigid bodies; centre of mass and centre of gravity; work, power and energy; principle of virtual work. Direct and shear stresses, strain elasticity, Hooke's law, Poisson's ratio, Young's modulus, modulus of rigidity and bulk modulus, working stress, factor of safety.

Structural elements, BM and SF diagrams theory of simple bending, distribution of bending stresses and shear stresses, Principal stresses and principal planes, Mohr's circle, Moment of internal section modulus, radius of gyration, torsion of circular shafts.

Use of simple column formula.

Solution of determinate trusses.

Fluid Mechanics – pressure at a point, Pascal's law of pressure within a static fluid, buoyancy, stability of submerged and floating bodies; Steady and unsteady flow, uniform and nonuniform flow, laminar and turbulent flow, Reynolds number.

Part – B, General Civil Engineering:

Surveying Correction for measured length by chain and tape, Field problems and their solutions, Compass Traversing, Closing error in compass traverse and its correction, Leveling, Cross - section Long section, measurement of areas, plane table surveying, Contouring.

Planning and Construction :

Brick Bonding, types of ordinary foundations, shoring and timbering, D.P.C. Flooring, Plastering, Whitewashing, skirting, Dado, Layout of water and sanitary lines in residential building, Water closets, Intercepting chambers.

Connection of house drains to streets sewers.

Irrigation:

Methods of irrigation, water requirement of crops, ground water – well hydraulics, Design of irrigation canal systems.

Sanitary Engg .:

Sewerage, sewer appurtenances, different system of sewerage, sewage BOD of sewage, Aerobic and Anaerobic process fundamentals of septic tanks, activated sludge and trickling filters. Demand of water, potable water, source of water, development of ground water sources, impurities in natural waters, water works intake, slow sand filter, rapid sand filters, disinfection of public water supplies, causes and removal of hardness.

Soil Mechanics:

Formation, identification and classification of soils. Three phase system Water content, void ratio, degree of saturation, Bulk density etc. Limits of consistency. Total and effective stress.

Roads and Railways:

Roads and Railways Survey, Construction and maintenance, Road permanent way structures with formation, Road and Railway crossings road inter-sections and Railway Track connections of various types road signs, Railway signals, Railway yards, road metals and their specifications, parts of Culverts.

Electrical Engineering :

- 1. Units and dimension:** work, power and conversion among electrical, mechanical and thermal energies.
- 2. Direct current circuits :** steady state and transient response of dc circuits.
- 3. Magnetic circuits :** Electromagnetics, mmf calculation, lifting power of magnets.
- 4. Alternating current circuits :** steady state response of single phase circuits; series and parallel resonance, balanced three phase circuits; active and reactive power in three phase circuits and their measurement.
- 5. Network theorems:** star-delta conversion; superposition, reciprocity Thevenin, Norton and maximum power transfer theorem applied to direct and alternating current circuits in steady state.
- 6. Measuring instruments:** working principles and constructional features of instruments used for measurement of current, voltage and power in dc and ac circuits, extension of instrument range, use of shunt and multipliers. CT and PT..

7. DC generators and motors: construction, classification, operating principles and characteristics of dc machines, Starters and regulators; Swinburner's test.

8. Transformers: Single phase and three phase transformer construction, classification, operating principles, emf equation equivalent circuit, expression for efficiency, regulation and their maximum values, open circuit and short circuit tests.

9. Induction - synchronous machines: rotating magnetic field, construction of squirrel cage and slip ring induction machines, operating principles, equivalent circuit, torque-slip ring induction machines, operating principles, equivalent circuit, torque-slip characteristics, no-load and blocked rotor test of induction machine, construction and operating principle of synchronous machine, pitch and distribution factors, emf equation, voltage regulation and its determination by synchronous impedance method.

10 . Generation, transmission and distribution: Thermal, hydraulic and nuclear power station, lay out diagram, demand and diversity factors, plant capacity and load factors, calculation of voltage drop and efficiency in short transmission line, two wire dc and single phase ac distributor, underground and submarine cables, relay, operating principles of different types of circuit breakers, isolator, symmetrical short circuit study, short circuit capacity, recovery and restriking voltage.

11 . Semiconductor devices: Simple diodes and transistors, rectifier, oscillator and amplifier circuits. Thyristor and its application only.

Electrical Engineering :

Applied Mechanics & Machine Design Group :

Equilibrium equations (2D problem), Friction, Properties of surface, Velocity and acceleration of particle for motion in straight, and circular path, Newton's laws of motion, Energy and momentum conservation . Stress, strain, Hook's law, Thermal stress , Statically indeterminate problem , Strain energy, Torsion of Circular shaft, bending moment and Shear force diagrams, bending stress, Deflection of beam, (method of integration and method of superposition), Short and Long column, Design considerations, Theories of failure, Concept of factor of safety, design of rivets, Cotter joints, Knuckle joints, flange couplings, shafts, pulleys and pipes.

Fluid Mechanics, Fluid Machines & Thermal Engg . Group;

Properties of fluid, measurement of pressure, Hydrostatic equation, Total fluid pressure on plane and curved surfaces, Centre of pressure, Buoyancy, stability of floating bodies, types of fluid flow, Continuity equation, total energy of flowing fluid, Bernoulli's equation, Measurement of flow in closed conduits and open channels (Orifice / Venturi meter, notches), measurement of velocity (Pitot tube), Impact of Jet on surfaces, pipe friction equation, Head losses in pipes, Minor losses, pipe line problems, open channel flow (Chezy's and Manning's equation), Centrifugal / Reciprocating pumps – pump work, efficiency, power, Pelton turbine / Francis turbine – working principle, Velocity diagram, Work done efficiency Draft tube, specific speed, Hydraulic accumulator, Fluid coupling, Hydraulic press, intensifiers.

Heat, Temperature, Gas laws, Laws of thermodynamics, energy and entropy, Properties of steam, enthalpy and dryness fraction of steam, Description, and principle of working of different types of boilers, boiler fittings and their mountings, Steam power cycles and Air standard cycles. Introduction to reciprocating air compressor.

Air refrigeration (Bell Coleman cycle) including problems, Principle of vapour compression refrigeration, systems.

Production Engineering Group :Operational features of basic machine tools like lathe, shaper, planer, drilling machine, grinding machines, milling machines, broaching machine, boring machines. Cutting tools – their profiles, material and heat treatment. Theory of metal cutting – basic elements of machining, chip formation and types of chips, machinability and machinability index, cutting fluid. Press Work – Principle of blanking, piercing, drawing, bending, embossing, coining.

Press tools – dies & punch.

Principles of Jigs & Fixtures.

Basic idea of (i) nontraditional machining like EDM, ECM, USM, LBM (ii) CNC machine tools.

Iron – Carbon equilibrium diagram – heat treatment of steel. General Principles of moulding methods & Pattern making, Types of pattern, pattern allowances – Core making and use – Casting processes like Sand Casting, Die Casting, Centrifugal Casting Investment Casting – Casting defects & remedies. Mechanical working of metals – forging, extrusion, rolling. Welding and allied processes Gas Welding, arc welding, resistance welding, thermit welding, soldering, brazing – welding defects & remedies.

Industrial Management – Organisation structure & design organizational behaviour – Basic principles of production management, materials management, marketing management, financial management, PERT, CPM – Safety & environment management. Metrology – principles and uses of micrometer, vernier caliper, screw pipe gauge, depth gauge, height gauge, sine bar – Surface finish concept of interchangeable system and limits, fit & tolerance. Estimating & Costing of materials for different processes.

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