

# **INFORMATION BULLETIN**

## **WEST BENGAL JOINT ENTRANCE EXAMINATION-2017 (WBJEE-2017)**

**Date of Examination  
23.04.2017 (Sunday)**

**West Bengal Joint Entrance Examinations Board  
AQ-13/1, Sector V, Salt Lake City  
Kolkata 700091**

Version: 1, Release date: 28<sup>th</sup> December, 2016

### IMPORTANT INSTRUCTIONS FOR ON LINE APPLICATION

**Candidates are required to go through the Information Bulletin carefully before attempting for online application.**

**Any application not in compliance with the conditions specified in the Information Bulletin is liable to be rejected.**

<b>1.</b>	Application for WBJEE-2017 has to be done online only. There is no printed application form.
<b>2.</b>	Ensure that you are filling genuine application form available on line at <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a>
<b>3.</b>	<p><b>It is essential to have a mobile number and a unique email ID.</b></p> <p>All future communications will be received from and sent through the registered mobile number and email ID. Communications from candidates from any other mobile number or email ID cannot be considered genuine/official and hence are liable to be ignored. WBJEEB will not be responsible for non-receipt of any communication by the candidates if the mobile number and/or the email ID is found wrong/non-existing/changed.</p>
<b>4.</b>	Candidates are advised to study the Guidelines of Online Application thoroughly before attempting online application.
<b>5.</b>	<p>Once the registration details i.e. <b>name, father's name, mother's name and date of birth</b> are entered and submitted, they <b>cannot be changed/modified/edited under normal circumstances.</b></p> <p>Also the information must match exactly with the school admit cards, mark sheets, certificates, photo identity cards, caste/category certificates etc. which you have to produce to enter the examination hall, during counselling, during admission &amp; during registration with the University.</p>
<b>6.</b>	Do not attempt to make any duplicate application.
<b>7.</b>	Do not share your application number; pass word, security question/answer with anyone.
<b>8.</b>	Upload scanned copy of photograph, signature and left thumb impression only as described in the Information Bulletin.
<b>9.</b>	If any information <b>other than</b> name, father's name, mother's name and date of birth given in the application need to be corrected then do the correction within the given window period of correction since <b>no correction is possible thereafter.</b>
<b>10.</b>	If you receive any SMS/email regarding discrepancy in the photograph/signature/LTI uploaded by you, take corrective action immediately <b>within one day.</b>
<b>11.</b>	<p>The amount of application fees to be paid for appearing in the <b>WBJEE-2017</b> is <b>₹500 (Rupees five hundred only) plus the Bank's Service Charges</b> as applicable. The Examination Fees can be paid in <b>cash less mode</b> by 'Net Banking'/ 'Debit Card'/ 'Credit Card' or <b>in cash</b> using Allahabad Bank e-challan.</p> <p>Payment status is updated online and hence should show 'OK' immediately after the payment. But in some rare cases it may be delayed due to the Bank's network delay/failure or transaction failure at the Electronic Payment Gateway (EPG). If the payment status does not show 'OK' immediately after making the payment then the candidates are advised as</p>

	<p>follows,</p> <p>a) If the payment was made by e-challan, contact the bank branch immediately, where the cash payment was made.</p> <p>b) If the payment was made by net banking/debit card/credit card, and the transaction failed at EPG, the candidate has to make payment once again.</p> <p><b>Do not wait for the last day to make fee payment in order to avoid payment failure by Bank or EPG.</b></p>
<b>12.</b>	Keep copies of <b>confirmation page, admit card</b> in safe custody. It is not possible to generate any duplicate copy.
<b>13.</b>	<p>For any query regarding the examination contact,</p> <p><b>Controller of Examinations</b> <b>West Bengal Joint Entrance Examinations Board</b> <b>AQ-13/1, Sector –V, Salt Lake City, Kolkata-700091</b> <b>Examination Helpdesk:-1800-3450-050, 03323671149, 59, 99.</b> <b>Email: Link &lt;Contact Us&gt; in <a href="http://www.wbjeeb.in">www.wbjeeb.in</a></b></p>

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<b>1.0</b>	<b>Introduction:</b>
	<p><b>The West Bengal Joint Entrance Examinations Board</b></p> <p>The West Bengal Joint Entrance Examinations Board (WBJEEB) was constituted in the year 1962 by the State Government of West Bengal, in exercise of the powers conferred under article 162 of the Constitution of India in pursuant to No. 828-Edn(T), dated 02.03.1962 for the purpose of conducting Joint Entrance Examination for admission to various institutions in West Bengal imparting education in medical, engineering and technological courses.</p> <p>The endeavour of the Board has always been directed towards enhancement of transparency in conducting Common Entrance Examinations for various professional Undergraduate and Postgraduate level courses in the State through effective state-of-the-art technology.</p> <p>The Board has been awarded the status of Statutory Body enacted vide '<b>West Bengal Act XIV of 2014</b>' named as '<b>The West Bengal Joint Entrance Examinations Board Act, 2014</b>'.</p> <p>The Board is empowered to conduct common, combined, competitive, entrance examinations for admission to the Undergraduate Professional and Vocational Courses in any College or in any University in the State of West Bengal.</p> <p>The Online application and allotment through e-Counselling is operational for the undergraduate level Engineering and Medical courses of the State effectively since 2012.</p> <p>For the academic session of 2017–18, the Board will conduct the Common Entrance Examination for admission to Undergraduate Courses in Engineering &amp; Technology, Pharmacy and Architecture Courses in Universities, Government Colleges and Self Financed Institutes in the State.</p> <p>The Office of the Board functions from:</p> <p><b>AQ-13/1, Sector-V, Salt Lake City, Kolkata - 700 091.</b></p> <p><b>Phone: (033) 23671198, Tele-fax: (033) 23671148, website: www.wbjeeb.in</b></p>
<b>2.0</b>	<b>The West Bengal Joint Entrance Examination-2017</b>
<b>2.1</b>	<p><b>The mode of Examination</b></p> <p>It is the Common Entrance Examination in offline mode (paper based examination) for admission to different Degree Level Courses in Engineering &amp; Technology, Pharmacy and Architecture in Universities, Government Colleges as well as Self Financing Engineering &amp; Technological Institutes in the State of West Bengal.</p>
<b>2.2</b>	<p><b>Subjects of Examination</b></p> <p>The "WBJEE-2017" will be on <b>Mathematics, Physics and Chemistry</b>. Two papers of examinations will be there. <b>'Paper-I' - Mathematics and 'Paper-II' - Physics &amp; Chemistry combined.</b></p> <ol style="list-style-type: none"> <li>1. For admission to any Engineering/Technology/Architecture Course appearing in both Paper-I and Paper-II is compulsory.</li> <li>2. For admission to Pharmacy Course of the Jadavpur University, appearing in both Paper-I and Paper-II is compulsory.</li> <li>3. For admission to any Pharmacy Course other than that of the Jadavpur University, appearing in mathematics is not compulsory. Score in 'Physics + Chemistry' (paper-II) only shall be considered.</li> <li>4. Students appearing in both Paper-I and Paper-II are also eligible for admission to</li> </ol>

	Pharmacy course.																														
2.3	<b>Syllabus of Examination:</b> The subject wise Syllabus for the 'WBJEE-2017' is available in <b>APPENDIX-7</b>																														
2.4	<p><b>Schedule of WBJEE-2017</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Date of Examination</th> <th>Paper/ Subject</th> <th>Time schedule</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;"><b>23.04.2017</b> <b>Sunday</b></td> <td style="text-align: center;">Paper-I (Mathematics)</td> <td style="text-align: center;"><b>11:00 a.m. to 1.00 p.m.</b></td> </tr> <tr> <td style="text-align: center;">Paper-II (Physics &amp; Chemistry)</td> <td style="text-align: center;"><b>2:00 p.m. to 4:00 p.m.</b></td> </tr> </tbody> </table> <p>No further examination shall be held under any circumstances for those who will be unable to appear on the above scheduled date and time of WBJEE-2017 examination.</p>	Date of Examination	Paper/ Subject	Time schedule	<b>23.04.2017</b> <b>Sunday</b>	Paper-I (Mathematics)	<b>11:00 a.m. to 1.00 p.m.</b>	Paper-II (Physics & Chemistry)	<b>2:00 p.m. to 4:00 p.m.</b>																						
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2.5	<p><b>Pattern of Question Papers in WBJEE-2017</b></p> <p>Questions will be based on the Syllabus for WBJEE-2017 as given in <b>APPENDIX – 7</b>. In every subject, all questions will be of <b>Multiple Choice Questions (MCQ)</b> type, with four options against each of the questions.</p> <p>There will be three categories of questions in each of the subjects. The number of questions as well as maximum marks for each are stated as per the following table:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Category-I Full Marks-1</th> <th>Category-II Full Marks-2</th> <th>Category-III Full Marks-2</th> <th>Total Number of Questions</th> <th>Total Marks</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">No. of Questions</td> <td style="text-align: center;">No. of Questions</td> <td style="text-align: center;">No. of Questions</td> <td></td> <td></td> </tr> <tr> <td>Mathematics</td> <td style="text-align: center;"><b>50</b></td> <td style="text-align: center;"><b>15</b></td> <td style="text-align: center;"><b>10</b></td> <td style="text-align: center;"><b>75</b></td> <td style="text-align: center;"><b>100</b></td> </tr> <tr> <td>Physics</td> <td style="text-align: center;"><b>30</b></td> <td style="text-align: center;"><b>5</b></td> <td style="text-align: center;"><b>5</b></td> <td style="text-align: center;"><b>40</b></td> <td style="text-align: center;"><b>50</b></td> </tr> <tr> <td>Chemistry</td> <td style="text-align: center;"><b>30</b></td> <td style="text-align: center;"><b>5</b></td> <td style="text-align: center;"><b>5</b></td> <td style="text-align: center;"><b>40</b></td> <td style="text-align: center;"><b>50</b></td> </tr> </tbody> </table> <p>In Category I: Only one answer option is correct;                  In Category-II: Only one answer option is correct;                  In Category-III: One or more answer options are correct.</p>		Category-I Full Marks-1	Category-II Full Marks-2	Category-III Full Marks-2	Total Number of Questions	Total Marks		No. of Questions	No. of Questions	No. of Questions			Mathematics	<b>50</b>	<b>15</b>	<b>10</b>	<b>75</b>	<b>100</b>	Physics	<b>30</b>	<b>5</b>	<b>5</b>	<b>40</b>	<b>50</b>	Chemistry	<b>30</b>	<b>5</b>	<b>5</b>	<b>40</b>	<b>50</b>
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2.6	<p><b>Mode of answering in the examination:</b></p> <ol style="list-style-type: none"> <li>a) Questions are to be answered on specially designed optical machine readable response <b>(OMR)</b> sheet, which will be evaluated by the method of Optical Mark Recognition by specially designed machines only and therefore it is very important to follow the correct method of marking.</li> <li>b) There will be four alternative answers for each question. Candidate will indicate response to the questions by <b>darkening the appropriate circle completely with blue/black ball point pen.</b></li> <li>c) Any other kind of marking e.g. filling the bubble incompletely, filling with pencil, cross mark, tick mark, dot mark, circular mark, over writing, scratching, erasing, white ink, marking outside the bubble etc. may lead to wrong/partial/ambiguous reading of the response. <b>WBJEEB will be, in no way, responsible for such eventuality.</b></li> <li>d) Response marking cannot be edited/changed/erased/modified. Hence it is advised that the candidate should be sure about the answer before marking and should</li> </ol>																														

	not put any stray mark on which he/she does not want to attempt.
<b>2.7</b>	<p><b>Scoring Methodology</b></p> <p><b>Question type: Scoring methodology</b></p> <p><b>Category-I :</b></p> <ol style="list-style-type: none"> <li>Only one option is correct.</li> <li>Correct response will yield 1 (one) mark.</li> <li>Incorrect response will yield -1/4 (25% negative) marks.</li> <li>For any combination of response with more than one option, the said answer will be treated as incorrect and will yield -1/4 (25% negative) marks.</li> </ol> <p><b>Category-II :</b></p> <ol style="list-style-type: none"> <li>Only one option is correct.</li> <li>Correct response will yield 2(two) marks.</li> <li>Incorrect response will yield -1/2 (25% negative) marks.</li> <li>For any combination of response with more than one option, the said answer will be treated as incorrect and will yield -1/2 (25% negative) marks.</li> </ol> <p><b>Category-III :</b></p> <ol style="list-style-type: none"> <li>One or more options may be correct.</li> <li>Only all Correct response will yield 2(two) marks.</li> <li>Any combination of correct and wrong response will be treated as incorrect and will yield 0 (zero) mark.</li> <li>For partially correct response, marks awarded will be = 2 x (no. of correct options marked ÷ total no. of correct options).</li> </ol>
<b>2.8</b>	<p><b>Ranking Methodology and publication of Merit Lists</b></p> <p>Based on the papers (subjects) appeared in the WBJEE-2017 followed by marks scored there-of, two separate Merit Rank Lists shall be published by the Board as per the following details:</p> <p>A. Merit Rank List-I: (<b>GMR</b>)</p> <ol style="list-style-type: none"> <li>This List shall be in the name and style of '<b>GMR</b>' which shall be applicable for admission to all Degree Level Engineering / Technology / Architecture Courses available in all enlisted Engineering / Technology Colleges and Universities.</li> <li>The said list shall also be applicable for admission to the Degree Level Pharmacy Course available in the Jadavpur University.</li> <li>This said list shall be prepared based on the score of candidates appeared in all the subjects (i.e. mathematics, physics &amp; chemistry) in the WBJEE-2017.</li> <li>Ranking of the said Merit List shall be done in the descending order of total marks scored in all the subjects as stated above. However, there may be ties and as such tie-breaking rule shall be applicable for them in determination of the merit rank.</li> <li>Separate reserved category merit rank shall also be published for respective category of students e.g. SC Rank, ST Rank, OBC-A Rank, OBC-B Rank, PwD Rank, TFW Rank. But '<b>GMR</b>' shall be applicable for competitive seat allotment and counseling.</li> </ol> <p>B. Merit Rank List-II: (<b>PMR</b>)</p> <ol style="list-style-type: none"> <li>This list shall be in the name and style of '<b>PMR</b>', which shall be applicable for admission to all Degree Level Pharmacy Courses available in all enlisted Pharmacy Colleges and Universities <b>except</b> the degree level pharmacy course available in the Jadavpur University.</li> </ol>



	<ul style="list-style-type: none"> <li>b. The merit list GMR will be applicable for admission to the Degree Level Pharmacy Course in the Jadavpur University.</li> <li>c. This said list shall be prepared based on the score of candidates appeared in the combined paper of Physics &amp; Chemistry only in the WBJEE-2017.</li> <li>d. Ranking of the said Merit List shall be done in the descending order of total marks scored in Physics and Chemistry in the WBJEE-2017. However, there may be ties and as such Tie-breaking Rule shall be applicable for them in determination of the merit rank.</li> <li>e. Separate reserved category Merit Rank shall also be published for respective category of students e.g. SC Rank, ST Rank, OBC-A Rank, OBC-B Rank, PwD Rank, TFW Rank. But '<b>PMR</b>' shall be applicable for competitive seat allotment and counseling.</li> </ul>
<b>2.9</b>	<b>Tie-breaking Methodology in determination of Merit Rank:</b>
<b>2.9.1</b>	<p>Tie-breaking Rule for Merit Rank List-I (GMR):applicable for Engineering Merit Rank</p> <ul style="list-style-type: none"> <li>a) Less negative marks in Mathematics, Physics and Chemistry taken together</li> <li>b) More positive marks in Mathematics and Physics taken together</li> <li>c) More positive marks in Mathematics and Chemistry taken together</li> <li>d) Less negative marks in Mathematics and Physics taken together</li> <li>e) Less negative marks in Mathematics and Chemistry taken together</li> <li>f) More positive marks in Mathematics for only the 2 marks questions</li> <li>g) More positive marks in Physics for only the 2 marks questions</li> <li>h) More positive marks in Chemistry for only the 2 marks questions</li> <li>i) Less negative marks in Mathematics for only the 2 marks questions</li> <li>j) Less negative marks in Physics for only the 2 marks questions.</li> </ul>
<b>2.9.2</b>	<p>Tie-breaking Rule for Merit Rank List-II(PMR):applicable for Pharmacy Merit Rank</p> <ul style="list-style-type: none"> <li>a) Less negative marks in Physics &amp; Chemistry</li> <li>b) More positive marks in Chemistry</li> <li>c) Less negative marks in Chemistry</li> <li>d) More positive marks in Chemistry for only the 2 marks questions</li> <li>e) Less negative marks in Chemistry for only the 2 marks questions</li> <li>f) More positive marks in Physics for only the 2 marks questions</li> <li>g) Less negative marks in Physics for only the 2 marks questions.</li> </ul>
<b>2.9.3</b>	<p>Final Tie-breaking for Merit List-I (GMR) and Merit List-II (PMR):</p> <p>After application of the Tie-breaking Rules as applicable if there be still ties, the same will be broken by the date of birth (DOB) of the candidates, with the older candidate having preference over the younger one. This is applicable for both the GMR and PMR.</p>
<b>2.10</b>	<b>Rules of the examination (WBJEE-2017):</b> Rules to be followed during the examination is given in <b>APPENDIX-8</b>
<b>3.0</b>	<b>Eligibility and academic qualification criteria for appearing in WBJEE-2017</b>
<b>3.1</b>	<p>Eligibility criteria for appearing in the WBJEE-2017:</p> <ul style="list-style-type: none"> <li>a) Citizenship: Applicant must be a <b>citizen of India</b>.</li> <li>b) Age Restriction: <ul style="list-style-type: none"> <li>(i) The <b>lower age limit</b> is <b>17 (seventeen)</b> years as on 31.12.2017. There is no <b>upper age limit</b> in appearing in the WBJEE-2017. A candidate born on or after 01.01.2000 is not eligible to appear in the WBJEE-2017.</li> </ul> </li> </ul>

	(ii) However, for admission to the degree level <b>Marine Engineering Course</b> The lower age limit is 17 (seventeen) years as on 31.12.2017 and the upper age limit is <b>25 Years</b> as on 31.12.2017.
<b>3.2</b>	<b>General Academic Qualifications criteria</b>
<b>3.2.1</b>	For appearing in the WBJEE-2017 both Paper-I and Paper-II (for enlistment in the Merit Rank List-I i.e. the GMR): <ul style="list-style-type: none"> <li>a) Candidate must have passed the Qualifying Examination i.e. the <b>'10+2' examination with Physics and Mathematics</b> along with any one of <b>Chemistry / Biotechnology / Biology / Computer Science / Computer Application</b> as compulsory subjects with individual pass marks (in both theory and practical wherever applicable) in all the three subjects as stated above in <b>regular class mode</b>.</li> <li>b) Must have obtained at least 45% marks (40% in case of candidates belonging to reserved category) in the above three subjects taken together.</li> <li>c) Must have passed English in the '10+2' examination with at least 30% marks.</li> <li>d) The Board of the said Qualifying Examination must be recognized by the Central Government or State Government concerned.</li> </ul>
<b>3.2.2</b>	For appearing in the WBJEE-2017 only in Paper-II (For enlistment in the Merit Rank List-II i.e. the PMR): <ul style="list-style-type: none"> <li>a) Candidate must have passed '10+2' examination with <b>Physics and Chemistry</b> along with any one of <b>Mathematics / Biotechnology / Biology / Computer Science / Computer Application</b> as compulsory subjects with individual pass marks (in both theory and practical wherever applicable) in all the three subjects as stated above in <b>regular class mode</b>.</li> <li>b) Must have obtained at least 45% marks (40% in case of candidates belonging to reserved category) in the above three subjects taken together.</li> <li>c) Must have passed English in the '10+2' examination with at least 30% marks.</li> <li>d) The Board of the said Qualifying Examination must be recognized by the Central Government or State Government concerned.</li> <li>e) <b>The criteria for admission into Bachelor of Pharmacy course in Jadavpur University is given in section 3.3.1.2-a</b></li> </ul>
<b>3.2.3</b>	Important consideration in terms of academic qualification <ul style="list-style-type: none"> <li>• A candidate appearing in the Qualifying Examination i.e. <b>the '10+2' Standard Examination in 2017</b> may appear in the <b>WBJEE-2017</b> but shall not be made eligible for allotment of seat for admission if he/she does not pass the Qualifying Examination with required minimum standard of eligibility criteria as stated above.</li> </ul>
<b>3.2.4</b>	<b>Important information to candidates regarding eligibility</b> <p>WBJEEB do neither verify the information provided by the candidate during on line application nor verify any certificate of date of birth, domicile, income, reservation category, academic qualification etc. for deciding the eligibility of the candidate. Admit cards issued only on the basis of the information provided by the candidate. Also there is no scope of changing/correcting any information after the last date of online application.</p> <p>All verifications are done during counselling, admission, registration with the university</p>

	<p>etc. If at any stage after examination it is found on scrutiny that the applicant is otherwise ineligible, his/her candidature shall be treated as cancelled even if he/she secured a Merit Rank in the WBJEE-2017.</p> <p>Hence securing a Rank in the WBJEE-2017 does not constitute a right/guarantee in favor of a candidate for his/her claim for admission who ultimately fails to comply the specified norms and standards.</p>
<b>3.3</b>	<p><b>Special eligibility criteria in terms of academic qualifications for admission to some specific Universities/University Departments/Institutions or for admission to some specific courses as per norms and standards of the regularity authorities are given in this section.</b> For all other institutes and courses the criteria are given above in section 3.2</p>
<b>3.3.1</b>	<p><b>Institute specific eligibility criteria</b></p>
<b>3.3.1.1</b>	<p><b>The University of Calcutta</b></p> <p><b>a) All available Courses except 'Jute &amp; Fibre Technology'</b></p> <p>Pass '10+2' or equivalent Examination with <b>Mathematics, Physics and Chemistry</b> as compulsory subjects with at least 60% (55% for Reserve Category Students) marks in all the above three subjects taken together, individual pass marks (both in theory &amp; practical where ever applicable) in each of the subjects and with at least 30 % marks in English.</p> <p><b>b) Jute &amp; Fibre Technology Course</b></p> <p>Pass '10+2' or equivalent Examination with <b>Physics and Mathematics</b> along with any one of <b>Chemistry / Biotechnology / Biology</b> as compulsory subjects with at least 45% (40% for Reserve Category Students) marks in all the above three subjects taken together, individual pass marks (both in theory &amp; practical where ever applicable) in each of the subjects and with at least 30 % marks in English.</p>
<b>3.3.1.2</b>	<p><b>The Jadavpur University (Faculty of Engineering &amp; Technology)</b></p> <p><b>a) All available courses including Bachelor of Pharmacy and except the five Year degree course in Architecture</b></p> <p>Pass '10+2' or equivalent Examination with <b>Mathematics, Physics and Chemistry</b> as compulsory subjects with at least 60% (45% for Reserve Category Students) marks in all the above three subjects taken together, individual pass marks (both in theory &amp; practical where ever applicable) in each of the subjects and with at least 30 % marks in English.</p> <p><b>b) Five Year Degree Course in Architecture</b></p> <p>Besides the academic qualifications as stated above, candidates must qualify either in NATA (National Aptitude Test in Architecture) conducted by the COA (Council of Architecture) or in the Paper-II of JEE-Main, 2017 conducted by the CBSE Board.</p>
<b>3.3.1.3</b>	<p><b>The West Bengal University of Animal and Fishery Sciences</b></p> <p><b>B. Tech (Dairy Technology) course</b></p> <p>a) Candidate must have passed the Qualifying Examination i.e. the '<b>10+2</b>' examination with <b>Physics, Chemistry and Mathematics</b> as compulsory subjects with individual pass marks (in both theory and practical wherever applicable) in all the three subjects as stated above in <b>regular Class mode</b>.</p> <p>b) Must have obtained at least 50% marks (40% in case of candidates belonging to</p>

	reserved category) in Physics, Chemistry, Mathematics and English taken together. The Board of the said Qualifying Examination must be recognized by the Central Government or State Government concerned.
<b>3.3.1.4</b>	<b>Maulana Abul Kalam Azad University of Technology, West Bengal</b> Same as section 3.2.1 above
<b>3.3.1.5</b>	<b>University Institute of Technology (The University of Burdwan)</b> Same as section 3.2.1 above
<b>3.3.1.6</b>	<b>The Neotia University</b> <b>a) All available B. Tech courses except Marine Engineering:</b> Pass '10+2' or equivalent Examination with <b>Physics, Chemistry and Mathematics</b> , as compulsory subjects with at least 60% marks in the above three subjects taken together. <b>b) B. Tech in Marine Engineering</b> Pass '10+2' or equivalent Examination with <b>Physics, Chemistry and Mathematics</b> , as compulsory subjects with at least 60% marks in the above three subjects taken together and at least 50% in English.
<b>3.3.2</b>	<b>Course specific eligibility criteria</b>
<b>3.3.2.1</b>	<b>The degree course in Marine Engineering</b> As per the norms and standards of the Director General of Shipping, Government of India: Candidates must pass Higher Secondary (10+2) Examination of West Bengal Council of Higher Secondary Education or equivalent examination from a recognized Council/Board in regular class mode with: a) 60% marks in Physics, Chemistry and Mathematics taken together with individual pass marks (both in theory and practical where ever applicable) in each of the said subjects; b) Minimum of 50% marks in English as subject in either in '10' standard or in '10+2' standard. c) These requirements are applicable for the Marine Engineering Course in any of the participating Institutions.
<b>3.3.2.2</b>	<b>The Five Year degree Course in Architecture</b> a) As per the norms and standards of the Council of Architecture (COA): No candidate with less than 50% marks in aggregate shall be admitted to the architecture course unless he/she has passed an examination at the end of new '10+2' scheme of Senior School Certificate Examination or equivalent with Mathematics as a subject of Examination at the 10+2 level. b) Candidate must also qualify either in the NATA (National Aptitude Test in Architecture) conducted by the Council of Architecture, New Delhi or in Paper 2 of JEE Mains conducted by Central Board of Secondary Education. c) These requirements are applicable for the five year degree course in Architecture in any of the participating Institutions <b>except the Jadavpur University, for which the academic eligibility criteria is given in 3.3.1.2-b above.</b>
<b>3.4</b>	<b>Requirements in terms of Residential/Domicile Criteria</b> a) There is no particular Residential/Domicile requirement <b>to appear</b> in the WBJEE-2017. b) However, the State (West Bengal) Residential/Domicile requirement is applicable for

	<p>admission to any Government Engineering / Technology / Pharmacy Colleges of the State as well as for admission to any reserved category of seats in respect of any course in any of the enlisted Universities/University Departments as well as in any Engineering / Technology / Pharmacy Colleges of the State.</p> <p>c) The State (West Bengal) Residential/Domicile requirement is also applicable for any seat under the TFW (Tuition Fee Waiver) Scheme.</p> <p>d) The candidate need to download the required proforma as per the detail given in section 3.4.1 below and keep the certificate ready to be produced during counseling, admission etc.</p> <p>e) If the certificate is then found to be invalid, the candidate will lose the opportunity of admission in institutes and courses given in Para a) and b) above.</p>
<p><b>3.4.1</b></p>	<p><b>Criteria to be treated as domicile of West Bengal and applicable proforma of certificate</b></p> <p>Only those candidates will be treated as domicile of West Bengal who are either,</p> <p>a) Residing in West Bengal continuously at least for last 10 (ten) years as on 31.12.2016.</p> <p style="text-align: center;">OR</p> <p>b) Whose parent(s) is/are permanent resident(s) of West Bengal having permanent address within the State of West Bengal.</p> <p>In case of a) above, the certificate is to be obtained in per forma 'a1' or proforma 'a2'. In case of b) above, the certificate is to be obtained in pro forma 'b'.</p> <p>Proforma 'a1' and 'b' are to be certified by government officials as detailed below and proforma 'a2' is to be certified by the head of the institution wherefrom the candidate passed or appeared 10+2 level examination.</p>
<p><b>3.4.2</b></p>	<p><b>Competent authority to issue domicile certificate</b></p> <p>A. <b>Proforma 'a1' or 'b'</b> must be signed and certified by any of the following competent authorities from Central Government or State Government <i>having local jurisdiction over the place of the permanent residence of the concerned candidate or his/her parents, as the case may be, viz.</i></p> <ol style="list-style-type: none"> <li>a. District Magistrate, Additional District Magistrate, Deputy Magistrate, Deputy Collector, Sub – Divisional Officer, Block Development Officer.</li> <li>b. Superintendent of Police, Additional Superintendent of Police, Sub Divisional Police Officer, Deputy Superintendent of Police,</li> <li>c. Commissioner, Additional Commissioner, Joint Commissioner, Deputy Commissioner, Assistant Commissioner of Police Commissionerate.</li> <li>d. Judicial Magistrate of any rank or position in the concerned district or Metropolitan locality or Hon'ble High Court at Calcutta or Hon'ble Supreme Court of India.</li> <li>e. Corporation Area - Commissioner, Additional Commissioner, Joint Commissioner, Assistant Commissioner.</li> <li>f. Assistant Secretary or above in the Secretariat to the Government of West Bengal (including GTA) or Central Government.</li> <li>g. Deputy Director or above in the Directorate to the Government of West Bengal or Central Government.</li> </ol> <p><b>B. Every official certifying the Domicile Status of the candidate or his/her parents MUST provide his/her FULL NAME, DESIGNATION, PLACE OF POSTING WITH</b></p>

	<p>ADDRESS, LANDLINE/ MOBILE NUMBER. He/she should also provide his/her IDENTITY CARD NUMBER if available.</p> <p><b>C. CERTIFICATION FROM ANY AUTHORITY OTHER THAN THOSE THAT HAVE BEEN ENUMERATED ABOVE 'WILL NOT BE ACCEPTED.'</b></p> <p><b>D. Note: Domicile certificates issued by any elected people's representative such as municipal commissioner, Councillor of Municipal Corporation/ Municipality, Member of three-tier Panchayat system or GTA, MLA or MP are not acceptable for WBJEE-2017.</b></p> <p><b>E. Proforma 'a2'</b> must be signed and certified by the Head of the Institution from which the candidate has passed or will appear in 10+2 examination. Such certificate must be issued after verification of the school education record of the candidate.</p>
<b>4.0</b>	<b>Category of participating institutions and scope of admission</b>
<b>4.1</b>	<p>There are five (5) <b>Categories of Institutions</b> participating (PI) in the admission system through the WBJEE-2017.</p> <p>Their list and the list of available courses (branches) for admission as of 2016 are given in <b>APPENDIX-5. Revised list for 2017 will be published before counselling.</b></p> <p>The quantum of seats available for admission through the WBJEE-2017 in respect of such institutions as well as corresponding Fee-Structure for education are stated below:</p>
<b>4.2</b>	<p><b>State funded/State aided Universities / Univ. Departments (U)</b></p> <p>a) 100% seats in respect of all available courses shall be admitted through the WBJEE-2017.</p> <p>b) The fees for study in such Institutions shall be guided by relevant Fee-Structure of respective Universities.</p>
<b>4.3</b>	<p><b>Government Engineering &amp; Technology Colleges (G)</b></p> <p>a) 100% seats in respect of all available courses shall be admitted through the WBJEE-2017.</p> <p>b) The fees for study in such Institutions shall be guided by relevant Fee-Structure as may be defined by the State Government in the Higher Education Department.</p>
<b>4.4</b>	<p><b>Private &amp; Self Financing Universities (PU)</b></p> <ul style="list-style-type: none"> <li>• There are some Private Universities established in the State in conducting Degree Level Engineering/Technology/Pharmacy/Architecture Courses run on self financing basis. The list of such participating Institutions as well as tentative courses for admission has been provided vide <b>APPENDIX-5</b></li> <li>• The quantum of such seats for admission through the WBJEE-2017 would be available in the Seat Matrix for admission through WBJEE-2017 to be provided by the WBJEE during the counseling and admission process.</li> </ul> <p>Separate Fee-Structures are available for study in such Private &amp; Self Financing Universities as may be defined by the respective Universities or by the State Government in the Higher Education Department through relevant Government Orders.</p>
<b>4.5</b>	<p><b>Private &amp; Self Financing Engineering &amp; Technology Colleges- Non-Minority Institutions (P)</b></p> <p>90% of the Seats shall be available for admission through the WBJEE-2017 and</p>

	<p>remaining 10% seats shall be available for admission through the All India Engineering Entrance Examination-2017 i.e. the JEE-Main-2017.</p> <p>However, there may be some Institutions allowed to admit students under <b>management quota (up-to a maximum of 10% seats)</b>. Admission to such seats shall be made by respective Institution through the WBJEE-2017 and/or JEE Main-2017. Details are available separately.</p> <p>Separate Fee-Structures are available for study in such Private &amp; Self Financing Institutions as may be defined by the State Government in the Higher Education Department through relevant Government Orders.</p>															
<p><b>4.6</b></p>	<p><b>Private &amp; Self Financing Engineering &amp; Technology Colleges- Minority Institutions (PM)</b></p> <p>50% of the seats shall be available for admission through the WBJEE-2017. Admission to remaining 50% of the seats shall be made through a separate Common Entrance Examination conducted by the Association of Minority Professional Academic Institutions (named as CEE-AMPAI). Details shall be available with the said Association.</p>															
<p><b>5.0</b></p>	<p><b>Reservation of seats for students under Reserve Category</b></p>															
<p><b>5.1</b></p>	<p><b>Reservation of Seats for SC/ST/OBC-A/OBC-B/PwD (earlier Physically Handicapped) Category of Students</b></p> <p>Depending on the category of participating institutions, reservation of seats for such category of students shall be available following the guidelines as provided below:</p> <table border="1" data-bbox="336 1126 1398 1608"> <thead> <tr> <th data-bbox="336 1126 392 1211"></th> <th data-bbox="392 1126 1038 1211">Nature of Institutions:</th> <th data-bbox="1038 1126 1398 1211">Applicability of Reservation Rules</th> </tr> </thead> <tbody> <tr> <td data-bbox="336 1211 392 1301">1</td> <td data-bbox="392 1211 1038 1301">State University/University Departments</td> <td data-bbox="1038 1211 1398 1301">Reservation Rules of concerned University</td> </tr> <tr> <td data-bbox="336 1301 392 1391">2</td> <td data-bbox="392 1301 1038 1391">Government Engineering/ Technology / Pharmacy Colleges</td> <td data-bbox="1038 1301 1398 1391">Reservation Rules of the State Government</td> </tr> <tr> <td data-bbox="336 1391 392 1514">3</td> <td data-bbox="392 1391 1038 1514">Private &amp; Self Financing Engineering / Technology / Pharmacy Colleges</td> <td data-bbox="1038 1391 1398 1514">As per the decision of the concerned Institution</td> </tr> <tr> <td data-bbox="336 1514 392 1608">4</td> <td data-bbox="392 1514 1038 1608">Private &amp; self Financing Universities</td> <td data-bbox="1038 1514 1398 1608">As per the concerned University Act/Rules</td> </tr> </tbody> </table> <p>a) However, availability of such reserve category seats shall be restricted to students domiciled in West Bengal only.</p> <p>b) Candidates claiming such seats must submit relevant Certificate issued from either of the competent Authorities as enlisted below. The said Certificate must be issued <b>on or before 31.03.2017</b>.</p> <p>f) The certificate is to be produced during counseling, admission etc. If the certificate is then found to be invalid, the candidate will lose the opportunity of admission in reserve category. The system will automatically put him in general category and the facility will be available from 2<sup>nd</sup> round of counseling onward.</p>		Nature of Institutions:	Applicability of Reservation Rules	1	State University/University Departments	Reservation Rules of concerned University	2	Government Engineering/ Technology / Pharmacy Colleges	Reservation Rules of the State Government	3	Private & Self Financing Engineering / Technology / Pharmacy Colleges	As per the decision of the concerned Institution	4	Private & self Financing Universities	As per the concerned University Act/Rules
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1	State University/University Departments	Reservation Rules of concerned University														
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5.1.1	<p><b>Competent Authorities for the issuance of SC/ST Certificate for candidates claiming under such reserve category of seats</b></p> <p><b>SC/ST Certificates are to be issued by any of the following authorities:</b> Within the respective local jurisdictions:</p> <p><b>A.</b> In case the candidate ordinarily resides within such jurisdictions.</p> <ul style="list-style-type: none"> <li>(i) Deputy Collector of Land Revenue, Kolkata</li> <li>(ii) Collector of Stamp Revenue, Kolkata</li> <li>(iii) Metropolitan Magistrate, Kolkata</li> <li>(iv) Additional Chief Metropolitan Magistrate, Kolkata</li> <li>(v) Chief Metropolitan Magistrate, Kolkata</li> <li>(vi) 1<sup>st</sup> Class Stipendiary Magistrate</li> <li>(vii) Executive Magistrate</li> <li>(viii) Sub-divisional Magistrate</li> <li>(ix) Sub-divisional Officer</li> <li>(x) Deputy Collector</li> <li>(xi) Additional District Magistrate</li> <li>(xii) Collector and</li> <li>(xiii) District Magistrate.</li> </ul> <p><b>B.</b> In case the candidate ordinarily resides in any part of West Bengal.</p> <ul style="list-style-type: none"> <li>(i) Deputy Director, Backward Classes Welfare Directorate, West Bengal.</li> <li>(ii) Commissioner, Backward Classes Welfare West Bengal.</li> </ul>
5.1.2	<p><b>Competent Authorities for the issuance of OBC-A / OBC-B Certificate for candidates claiming under such reserve category of seats:</b></p> <p>As per Notification vide No. 374(71)-TW/EC/MR-103/94 dated 27/7/1994, read with Memorandum No. 1204-SBCW/MR-67/10 dated 27/7/2015 issued by Backward Classes Welfare Department. Govt. of W.B., the Sub Divisional Officer of a Sub- Division in a District is the certificate issuing authority. In Kolkata such certificate is issued by such an officer as the State Government by modification authorizes. Accordingly, the District Welfare Officer, Kolkata and Ex-officio Joint Director, BCW has been notified to act as the certificate issuing authority in respect of Kolkata covering the jurisdiction of the Kolkata Municipal Corporation.</p>
5.1.3	<p><b>Competent Authorities for the issuance of PwD (Persons with Disabilities) or PH (Physically Handicapped) Certificate for candidates claiming under such reserve category of seats</b></p> <p>Reservation will be available to candidates with a minimum of <b>40% disability</b> with respect to Loco-motor disorder, Visual impairment, Speech &amp; Hearing Impairment subject to the condition that the candidate is capable of carrying out all activities related to theory and practical work as applicable to B.E/B. Tech/B. Arch/B. Pharm courses without any special concession and exemption.</p> <p><b>PwD/PH certificates are to be issued by the any of the following authorities</b></p> <p>Officer-in-Charge or Medical Head of Primary Health Centers, Block Primary Health Centers, State General Hospitals, Rural Hospitals, Sub-Divisional Hospitals or the District Hospitals run by the State Government or any hospital run by a statutory body or authority.</p> <p><b>The Medical Board constituted at IPGMR / SSKM Hospital will verify all certificates at the time of counselling.</b></p>



5.2	<p><b>Reservation of Seats for Minority Category of Students</b></p> <p>Some of the Private &amp; Self Financing Institutes have been granted the Minority Status (denoted as type 'PM' in <b>APPENDIX -5</b> of this Information Bulletin). 50% of the approved seats of such Institutions shall be available for admission of Minority Category of students but such admission shall be made through a separate Common Entrance Examination conducted by the Association of Minority Professional Academic Institutions (CEE-AMPAI-2017). Remaining 50% seats shall be available for admission through the WBJEE-2017 but those are not applicable for minority category students.</p> <p><b>As such, there is no seat reserved for Minority Category Students for admission through the WBJEE-2017.</b></p> <p>However, separate Notification shall be available for admission procedure in respect of Minority Category Students to be notified by the State Government in the Higher Education Department.</p>																								
5.3	<p><b>Reservation of Seats for admission of the wards of Defense Personnel (Defense Quota Seats)</b></p> <p>As per the Govt. Order vide No. 406(T), Dated, 09.06.2016 of the Higher Education Department, Govt. of West Bengal 13(thirteen) seats are available for admission of the wards of Defense Personnel through the WBJEE-2017. Institution-wise and course-wise availability of such seats are as follows:</p> <p>Those seats are supernumerary in nature and separate allotment is done by the West Bengal Joint Entrance Examinations Board as per the following guidelines:</p> <p>A. For consideration under Defense Quota, intending candidates registered for the WBJEE-2017 will <b>have to apply</b> to the Rajya Sainik Board, Home Department, Government of West Bengal, Writers' Buildings, Kolkata – 700001 through the concerned Zila Sainik Board, W.B. (for ex-servicemen) and Units (for serving soldiers) in the prescribed form with an attested copy of WBJEE - 2017 Admit Card.</p> <p>B. Based on the recommendation of the said Rajya Sainik Board, a separate Merit List shall be published by the WBJEEB for subsequent offline counselling and allotment of seats. Appearance in both Paper-I and Paper-II in the WBJEE-2017 is mandatory for such category of seat.</p> <p>C. <b>Allotment of seats under Defense Quota is not done through e-counseling.</b></p> <p>D. Institution-wise and course-wise availability of such seats under Defense Quota is as stated below:</p> <table border="1" data-bbox="352 1525 1394 2024"> <thead> <tr> <th>Sl. No.</th> <th>Name of the Institution</th> <th>Name of the available course(s)</th> <th>No. of seats</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Jadavpur University</td> <td>As decided by the University Authority</td> <td>2</td> </tr> <tr> <td>2.</td> <td>Jalpaiguri Govt. Engg. College</td> <td>1. Mechanical Engg. 2. Information Tech.</td> <td>1 1</td> </tr> <tr> <td>3.</td> <td>Kalyani Govt. Engg. College</td> <td>Electrical Engineering</td> <td>1</td> </tr> <tr> <td>4.</td> <td>Purulia Govt. Engg. College</td> <td>1.Comp. Sc. &amp; Engg. 2.Electronics &amp; Comm. Enggg.</td> <td>1 1</td> </tr> <tr> <td>5.</td> <td>Coochbehar Govt. Engg. College</td> <td>1. Comp. Sc. &amp; Engg. 2. Electronics &amp; Comm.</td> <td>1</td> </tr> </tbody> </table>	Sl. No.	Name of the Institution	Name of the available course(s)	No. of seats	1.	Jadavpur University	As decided by the University Authority	2	2.	Jalpaiguri Govt. Engg. College	1. Mechanical Engg. 2. Information Tech.	1 1	3.	Kalyani Govt. Engg. College	Electrical Engineering	1	4.	Purulia Govt. Engg. College	1.Comp. Sc. & Engg. 2.Electronics & Comm. Enggg.	1 1	5.	Coochbehar Govt. Engg. College	1. Comp. Sc. & Engg. 2. Electronics & Comm.	1
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5.	Coochbehar Govt. Engg. College	1. Comp. Sc. & Engg. 2. Electronics & Comm.	1																						

			Engg.	1
	6.	Govt. College of Engg & Leather Tech., Kolkata	Leather Technology	1
	7.	Govt. College of Engineering & Ceramic Tech., Kolkata	Information Tech.	1
	8.	Govt. College of Engineering & Textile Tech., Serampur	Information Tech.	1
	9.	Govt. College of Engineering & Textile Tech., Berhampur	Comp. Sc. & Engg.	1
<b>5.4</b>	<p><b>Reservation of seats for students Merit listed in JEE (Main) 2017</b></p> <p><b>Applicable for candidates merit listed in the JEE-Main-2017</b></p> <p>Seats are available for students merit listed in <b>JEE (Main) 2017</b> up to the extent of 10% of the approved seats in all <b>Self Financed Engineering &amp; Technology Colleges</b> of West Bengal.</p> <p>Allotment of seats shall be strictly on the basis of merit and preference of students through the e-counselling process conducted by the WBJEEB.</p> <p>The eligibility and other criteria described in section 3 for admission to degree level Engineering / Technology /Pharmacy / Architecture courses, will be applicable for JEE (Main) 2017 merit listed candidates also.</p>			
<b>5.5</b>	<p><b>Reservation of seats for admission under Management Quota</b></p> <p>This is applicable only for Self Financing Colleges of the State offering B.E. /B.Tech./ B. Pharm / B. Arch. Courses. It is also applicable for courses running on self- financing basis under the University Institute of Technology, Burdwan University. However, Institutions may or may not opt for admission of students under such quota.</p> <p>A Maximum of <b>10% of sanctioned seats</b> may be admitted under such management quota directly by the Concerned Management of those Institutions. The eligibility criteria in terms of academic qualification, citizenship, age restrictions, etc. as stipulated for admission to degree level Engineering/Technology/ Pharmacy/ Architecture courses shall also be applicable for students to be admitted under the Management Quota.</p>			
<b>6.0</b>	<p><b>Scope of admission for poor and meritorious students of the State through Tuition Fee Waiver (TFW) Scheme</b></p>			
<b>6.1</b>	<p><b>Availability of seats under the Tuition Fee Waiver (TFW) Scheme</b></p> <p>a) The Tuition Fee Waiver Scheme (TFW) has been implemented by the Government of West Bengal for <b>meritorious and economically backward students domiciled in West Bengal</b> for admission to all the participating universities/university departments / government colleges as well as private and self financing colleges offering Engineering / Technology /Pharmacy/ Architecture Courses. However, for Universities/University Departments, quantum of availability of such seats is under the discretion of the University Authorities.</p> <p>b) For all the government as well as private &amp; self financing Engineering /Technology /Pharmacy colleges, a <b>maximum of 5%</b> of sanctioned intake per course is available <b>on supernumerary basis</b> (over and above the sanctioned seats) for admission under TFW scheme.</p> <p>c) Selection of candidates for the <b>TFW</b> scheme shall be decided on the basis of merit</p>			

	<p>and preference of eligible students in WBJEE-2017.</p> <p>d) The student must be <b>domiciled in West Bengal</b> and the domicile certificate has produced during counseling and admission.</p> <p>e) Total annual <b>Family Income</b> of the student from <b>all sources</b> must be less than <b>Rs. 2.50 lakhs</b> (Rupees two lakhs and fifty thousand only).</p> <p>f) The <b>waiver</b> is limited to the Tuition Fee only. All other fees will have to be paid by the beneficiary.</p>
6.2	<p><b>Submission of Income Certificate in availing seat under the TFW Scheme:</b></p> <p>a) Candidates must produce the '<b>Income Certificate</b>' as per the proforma provided in <b>APPENDIX-4</b> of this Information Bulletin.</p> <p>b) The certificate is to be produced during counseling, admission etc. If the certificate is then found to be invalid, the candidate will lose the opportunity of admission in TFW category. The system will automatically put him in general category and the facility will be available from 2<sup>nd</sup> round of counseling onward.</p> <p>c) Candidates claiming such seats must submit relevant Certificate issued from either of the competent Authorities as enlisted below. The said Certificate must be issued <b>on or before 31.03.2017</b>.</p>
6.3	<p>Competent Authorities for the issue of Income Certificate in respect of the TFW Scheme are as enlisted below:</p> <p><b>A. For students from rural region:</b></p> <ol style="list-style-type: none"> <li>An officer of the State Govt. in the rank of Block Development Officer</li> <li>Sub-Divisional Officer</li> <li>Additional District Magistrate</li> <li>District Magistrate</li> <li>Group 'A' Officer or Gazetted Officers of similar Rank or higher of State or Central Govt.</li> </ol> <p><b>B. For students from urban region:</b></p> <ol style="list-style-type: none"> <li>Assistant Commissioner or above in <b>Municipal Corporation</b></li> <li>Group "A" Gazetted Officer of State or <b>Central Govt. of similar rank</b> or above</li> </ol> <p><b>Note:</b> <b>Income certificate issued by any elected people's representative such as municipal commissioner, councillor of Municipal Corporation/Municipality, member of three-tier Panchayat system or GTA, MLA or MP are not acceptable for WBJEE-2017.</b></p>
7.0	<p><b>Legal jurisdiction:</b></p> <ol style="list-style-type: none"> <li>All matters pertaining to conduct of WBJEE-2017 shall fall within the jurisdiction of Kolkata only.</li> <li>The Board will not be a party pertaining to any dispute arising in the process of admission to any course of study through WBJEE- 2017.</li> </ol>
8.0	<p><b>Procedure for submission of application Form , payment of Examination Fees and downloading/printing of the Confirmation Page:</b></p>
8.1	<p>Application for the <b>WBJEE-2017</b> has to be made <b>ONLINE</b> only through the web- portal <a href="http://wbjeeb.nic.in">http://wbjeeb.nic.in</a>.</p> <p><b>For making the application the candidate need to have a working mobile number and</b></p>

	<p><b>an email ID. All future communications will be done using them only.</b></p> <p>The application procedure is interactive in nature. Detail guideline is given in <b>APPENDIX-11</b>. The steps are briefly described below.</p>
<b>8.2</b>	<p><b>Filling up of Application Form</b></p> <p>The candidate will first enter the registration details i.e. Name, Father's Name, Mother's name and Date of birth.</p> <p><b>Be careful while entering the registration details. It cannot be changed/edited/modified under normal circumstances. Also the information must match exactly with the school admit cards, mark sheets, certificates, photo identity cards, caste/category certificates etc. which you have to produce to enter the examination hall, during counselling, during admission and during registration with the University.</b></p> <ol style="list-style-type: none"><li>a) Any attempt by a candidate to make duplicate registration will be stopped by the system.</li><li>b) Thereafter candidates are required to fill up various personal information regarding, Nationality, Religion, Income category, Address, Choice of examination zones, academic detail etc.</li><li>c) At the end, the candidate has to choose password and security question/answer.</li><li>d) At this stage the candidate can review the entire application and make changes as necessary.</li><li>e) The candidate will then be asked to submit the application.</li><li>f) Then an application number will be generated and SMS/email will be sent to the candidate.</li><li>g) Candidates have to remember password and security question/answer. The system is automatic. There is no way to recover the password if it is lost.</li><li>h) It is not possible for any person/agency to change/edit/input any information without knowing the password. Hence candidates must not share their password with anybody. The Board will not be responsible for any change resulting from sharing/ divulging the password.</li><li>i) At this stage candidates may logout or continue to next step.</li></ol>

<p><b>8.3</b></p>	<p><b>Uploading of images</b>                  At this stage the candidate is required to upload scanned images of his/her recent colour photograph, signature and left thumb impression (LTI) all in one go.  <b>Essential features of the photograph</b></p> <ul style="list-style-type: none"> <li>a) The Photograph must be taken on or after 01.12.2016.</li> <li>b) It should be taken in professional studio. Low quality photograph by Mobile Phone or self composed portraits is not acceptable and may likely to be rejected.</li> <li>c) Background of the photograph must be of very light colour.</li> <li>d) The face of the candidate should occupy at least 50% of the entire space for photograph looking straight to the camera.</li> <li>e) Spectacles of dark or tinted glasses are not acceptable.</li> <li>f) The photograph must match with the candidates' appearance during the examination.</li> <li>g) Copy of same photograph need to be produced for entering the examination centre, during counseling, admission, registration with the university etc.</li> </ul> <p><b>Format, storage size and physical dimension of the images must be as under:</b></p> <table border="1" data-bbox="320 846 1401 1081"> <thead> <tr> <th>Image</th> <th>Format</th> <th>Storage size</th> <th>Dimension</th> </tr> </thead> <tbody> <tr> <td>Photograph</td> <td>JPEG</td> <td>10 kb to 100 kb.</td> <td>3.5cm x 4.5cm</td> </tr> <tr> <td>Signature</td> <td>JPEG</td> <td>3 kb to 30 kb.</td> <td>3.5cm x 1.5cm</td> </tr> <tr> <td>Left hand thumb impression (LTI).</td> <td>JPEG</td> <td>3 kb to 30 kb.</td> <td>3.5cm x 1.5cm</td> </tr> </tbody> </table> <p>In case the images do not conform to the above requirement, it will not be possible to issue the admit card. In which case, only the candidate will remain responsible. WBJEEB does not check the images. <b>However, if any discrepancy comes to its notice a SMS will be sent to the candidate's registered mobile number. The candidate, then has to log in and upload corrected image.</b></p>	Image	Format	Storage size	Dimension	Photograph	JPEG	10 kb to 100 kb.	3.5cm x 4.5cm	Signature	JPEG	3 kb to 30 kb.	3.5cm x 1.5cm	Left hand thumb impression (LTI).	JPEG	3 kb to 30 kb.	3.5cm x 1.5cm
Image	Format	Storage size	Dimension														
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Signature	JPEG	3 kb to 30 kb.	3.5cm x 1.5cm														
Left hand thumb impression (LTI).	JPEG	3 kb to 30 kb.	3.5cm x 1.5cm														
<p><b>8.4</b></p>	<p><b>Payment of Examination Fees</b>                  After up-loading of images candidates will be directed automatically to the fee-payment step.</p> <ul style="list-style-type: none"> <li>a) The Examination Fees can be paid in <b>cash less mode</b> by 'Net Banking'/ 'Debit Card'/ 'Credit Card' or <b>in cash</b> using Allahabad Bank e-challan, which will be automatically generated for downloading once the same option is selected. The candidate has to take a print of the challan and deposit the fees in cash in any branch of Allahabad Bank with Core Banking Services (CBS).</li> <li>b) There is no other method of paying the application fee besides the above.</li> <li>c) <b>The amount of Examination Fees</b>                      The amount of fees to be paid for appearing in the <b>WBJEE-2017</b> is <b>₹500 (Rupees five hundred only) plus the Bank's Service Charges</b> as applicable.</li> <li>d) The fee once paid is not refundable under any circumstances.</li> </ul>																
<p><b>8.5</b></p>	<p><b>Confirmation Page</b> On successful completion of all the above steps, candidate shall automatically be directed to the option for downloading and printing of the 'Confirmation Page' which itself signifies the completion of Online-Submission of Application for WBJEE-2017 and accordingly implies that the candidate's application is <b>complete and accepted.</b></p> <p><b>APPLICATION IS NOT COMPLETE UNTIL THE CONFIRMATION PAGE IS GENERATED.</b></p>																

	<p>Candidate should take a Print-out of the Confirmation Page and should preserve the same carefully till the completion of admission process. <b>The confirmation page cannot be regenerated at any later stage. Hence it is the responsibility of the candidate to preserve it safely.</b></p>
8.6	<p><b>Correction of application form</b></p> <p>a) It is not possible to correct any registration data i.e. Name, Father's Name, Mother's name and Date of birth.</p> <p>b) If any candidate intends to correct any other information in his/her application, he/she can do so during the given <b>correction window period</b> using the edit mode. The Board cannot entertain any request for any correction under any circumstances beyond the correction window period.</p> <p>c) Confirmation page, admit card, rank card etc. will be issued with the personal detail as given by the candidate. In case of any problem to the candidate during admission or thereafter due to any mistake committed by him/her, <b>the Board is not in a position to render any help e.g. issuing any letter of correction.</b> The candidate has to take corrective actions at his/her end with the institute, where he/she takes admission.</p>
9.0	<p><b>Admit Card</b></p> <p>a) 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.</p> <p><b>b) 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 WBJEE-2017.</b></p> <p>c) Duplicate admit cards cannot be generated after the examination. Hence, candidates are advised to retain their admit cards carefully in secured place in undamaged condition for all future purpose.</p> <p>d) WBJEEB does not verify the information provided by the candidate during on-line application. Admit cards issued only on the basis of the information provided by the candidate. All applicants who appear to be prima facie eligible will be issued admit cards and shall be provisionally permitted to sit for WBJEE-2017.</p> <p>e) All verifications are done during counseling, admission, registration with the university etc. If at any stage after examination it is found on scrutiny that the applicant is otherwise ineligible, his/her candidature shall be treated as cancelled even if he/she had appeared in and secured a Merit Rank in WBJEE-2017. Appearing in the examination and securing a Rank in the WBJEE-2017 does not constitute a right/guarantee in favour of a candidate for his/her claim for admission.</p>
10.0	<p><b>Allocation of examination center</b></p> <p>Allocation of examination centre will be based on the choices given by the candidate during online form fill-up. However, discretion of the Board in allocation of examination centre shall be final. <b>No request for change of allocated centre will be entertained under normal circumstances.</b> List of district-wise examination zones is given in <b>APPENDIX-9.</b></p> <p>a) <b>Candidates from West Bengal, Assam and Tripura must select any three zones in order of preference.</b></p> <p>b) <b>Candidates from states other than the above must select any three zones from Kolkata/Howrah/North 24 Pgs/ South 24 Pgs in order of preference.</b></p> <p><b>Any examination zone may be dropped if adequate numbers of candidates are not available.</b></p>

11.0	<p><b>Evaluation and declaration of result</b></p> <p>a) The <b>Model Answer Keys</b> will be published in <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a> shortly after the examination. For this purpose, candidates are advised to regularly follow the web site after the examination.</p> <p>b) Any candidate will be able to challenge any model answer key by logging in with his/her password.</p> <p>c) Challenges of the model answer keys will be accepted on line through the link given for the purpose in <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a> on payment of <b>₹500 per question</b>, payable by net banking/debit card/ credit card/ e-challan. The fee once paid is <b>non-refundable</b>. WBJEEB's decision on the challenges will be final and no further communication will be entertained.</p> <p>d) If any challenge is accepted, the Board will publish <b>Final &amp; Frozen Answer Keys</b>.</p> <p>e) Images of OMRs and machine read responses will be uploaded in <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a> two to three weeks (tentatively) after the examination.</p> <p>f) Any candidate will be able to view the images of his/her OMRs and machine read responses by logging in with his/her password.</p> <p>g) The candidates, who are not satisfied with the captured responses may challenge on line through the link given for the purpose on payment of <b>₹500 per question</b>, payable by net banking/debit card/ credit card/ e-challan. The fee once paid is <b>non-refundable</b>. WBJEEB's decision on the challenges will be final and no further communication will be entertained.</p> <p>h) Challenges by letter, fax, telephone etc. other than through on line will not be accepted or entertained.</p> <p>i) Final result will be published in the form of Rank Cards, which will contain all relevant ranks, total score and component scores in paper-I (Mathematics) and paper-II (physics &amp; Chemistry).</p> <p>j) Candidates will be able to view and download their rank card by logging in with their password.</p> <p>f) Duplicate rank cards cannot be generated at any later stage after a specified date. Hence candidates are advised to retain their rank cards carefully in secured place in undamaged condition for all future purpose.</p> <p>k) Ranks will be awarded to all candidates, who appear for WBJEE-2017. Both GMR and PMR will be awarded to those who appear in both Paper-I and Paper-II. Only PMR will be awarded to those, who appear in Paper-II only.</p> <p>l) But all those, who appear in the examination and have a rank, <b>may not be eligible for e-counseling</b>, for which a cut off rank and/or a cut off score will be decided by the board, which will be announced at the time of publication of the result.</p>
12.0	<p><b>Counselling/seat allotment and admission</b></p> <p>a) A separate notification with details of e-counseling/seat allotment and admission will be published in <a href="http://www.wbjeeb.in">www.wbjeeb.in</a> and <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a> shortly after publication of result. Only those, eligible for e-counseling, will be able to participate in it.</p> <p>b) Course-wise and institute wise availability of seats as provided by the competent authorities will also be published before counseling and allotment.</p> <p>c) Credentials of all candidates participating in e-counseling will be verified at <b>Reporting</b></p>

	<p><b>Centers</b> on stipulated dates. Details of the reporting centers will be given in the rank cards of the candidates declared eligible for e-counseling.</p>
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**PROFORMA a1****Residential/Domicile Certificate for candidates residing in the State of West Bengal  
continuously for at least last ten (10) years as on 31.12.2016**

Certified that \_\_\_\_\_

Son / daughter of \_\_\_\_\_ is a resident/permanent  
Resident of West Bengal at Village/House No. \_\_\_\_\_

Street \_\_\_\_\_

Post Office \_\_\_\_\_ Police Station \_\_\_\_\_

In the District of \_\_\_\_\_ under Assembly Constituency  
\_\_\_\_\_ and has been living in the State of West Bengal  
continuously / uninterruptedly at least for the last ten (10) years as on 31-12-2016.

Paste  
4.5cmx3.5cm size  
recent colour  
photograph in this  
box

Candidate's signature

**Candidate must sign here in front of the certifying  
authority**

**(Candidate's photograph)**

Signature of Certifying Authority \_\_\_\_\_

Designation with Official Seal \_\_\_\_\_

Full Name of Certifying Authority \_\_\_\_\_

Office Address \_\_\_\_\_

Office Phone No. \_\_\_\_\_ Mobile No: \_\_\_\_\_ (optional)

ID No: \_\_\_\_\_ (optional)

*Note: Photograph is to be attested by the certifying authority.**The Certifying Authority should preserve a duplicate copy of this Certificate.*

## APPENDIX -2

**PROFORMA 'a2'****Residential/Domicile Certificate for candidates residing in the State of West Bengal continuously for at least last ten (10) years as on 31.12.2016**

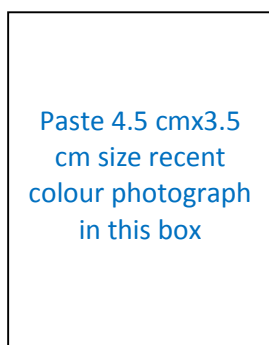
Certified that \_\_\_\_\_ son / daughter of \_\_\_\_\_ has passed the '10+2' Examination in the year \_\_\_\_\_ / will appear in the Final '10+2' Examination in 2017 from this Institution.

It is also certified that the student is a resident/permanent resident of West Bengal at Village/House No. \_\_\_\_\_

Street \_\_\_\_\_ Post Office \_\_\_\_\_

Police Station \_\_\_\_\_ in the District of \_\_\_\_\_

under Assembly Constituency \_\_\_\_\_ and has been living and studying in the State of West Bengal continuously / uninterruptedly at least for the last ten (10) years as on 30-12-2016.



**(Candidate's photograph)**

Candidate's signature

**Candidate must sign here in front of the certifying authority**

Signature of Certifying Authority \_\_\_\_\_

Designation with Official Seal \_\_\_\_\_

Full Name of Certifying Authority \_\_\_\_\_

Office Address \_\_\_\_\_

Office Phone No. \_\_\_\_\_ Mobile No: \_\_\_\_\_ (optional)

ID No: \_\_\_\_\_ (optional)

*Note: Photograph is to be attested by the certifying authority.*

*The Certifying Authority should preserve a duplicate copy of this Certificate.*

## APPENDIX -3

**PROFORMA 'b'**

**Residential/Domicile Certificate for candidates not residing in the State of West Bengal but whose parent(s) is (are) permanent resident(s) of West Bengal having their permanent home address within West Bengal**

Certified that \_\_\_\_\_

Father/ mother of \_\_\_\_\_ (the applicant) is/ are permanent Resident of West Bengal at Village/House No. \_\_\_\_\_

Street \_\_\_\_\_

Post Office \_\_\_\_\_ Police Station \_\_\_\_\_

In the District of \_\_\_\_\_

Under Assembly Constituency \_\_\_\_\_

Paste  
4.5cmx3.5cm size  
recent colour  
photograph of the  
candidate in this  
box

Paste  
4.5cmx3.5cm size  
recent colour  
photograph of  
father/ mother of  
the candidate in  
this box

Father's/ Mother's Signature

Candidate's Signature

**Candidate must sign here in front of  
the certifying authority**

**(Candidate's Photograph) (Father's/ Mother's Photograph)**

Signature of Certifying Authority \_\_\_\_\_

Designation with Official Seal \_\_\_\_\_

Full Name of Certifying Authority \_\_\_\_\_

Office Address \_\_\_\_\_

Office Phone No. \_\_\_\_\_ Mobile No: \_\_\_\_\_ (optional)

ID No: \_\_\_\_\_ (optional)

*Note: Photographs are to be attested by the certifying authority.*

*The Certifying Authority should preserve a duplicate copy of this Certificate.*

## APPENDIX – 4

## Proforma for Income Certificate

Certified that the TOTAL ANNUAL FAMILY INCOME FROM ALL SOURCES of \_\_\_\_\_ son/daughter of \_\_\_\_\_ residing at \_\_\_\_\_ Post Office \_\_\_\_\_ Police Station \_\_\_\_\_ in the district of \_\_\_\_\_ in the state of West Bengal for the year 2015-2016 is less than Rs. 2.50 lakhs ( Rupees two lakhs and fifty thousand only) and stands at Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_).

Paste  
4.5cmx3.5cm size  
recent colour  
photograph of the  
candidate in this  
box

Candidate's signature

**Candidate must sign here in front of the certifying authority**

**(Candidate's Photograph)**

Signature of Certifying Authority \_\_\_\_\_

Designation with Official Seal \_\_\_\_\_

Full Name of Certifying Authority \_\_\_\_\_

Office Address \_\_\_\_\_

Office Phone No. \_\_\_\_\_ Mobile No: \_\_\_\_\_ (optional)

ID No: \_\_\_\_\_ (optional)

*Note: Photographs are to be attested by the certifying authority.  
The Certifying Authority should preserve a duplicate copy of this Certificate.*

## List of Participating Institutes, 2016

## APPENDIX: 5

PI Code	PI Name	Br Code	Branch Name
U001	Bidhan Chandra Krishi Vswavidyalaya	101	Agricultural Engineering
U002	Department of Jute and Fibre Technology, Calcutta University	129	Jute & Fibre Technology
U003	Jadavpur University	104	Architecture
		107	B.Pharm/Pharmaceutical Technology
		111	Chemical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		118	Construction Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		125	Food Technology And Bio Chemical Engineering
		126	Information Technology
		128	Instrumentation Engineering/Instrumentation & Electronics Engineering
		132	Mechanical Engineering
		135	Metallurgical Engineering
		139	Power Engineering/Power Plant Engineering
140	Printing Engineering/Printing Technology		
141	Production Engineering		
U004	Maulana Abul Kalam Azad University Of Technology, West Bengal	117	Computer Science & Engineering/Computer Science & Technology
		126	Information Technology
U005	University Institute Of Technology, Burdwan (Self Financing Course)	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
126	Information Technology		
U006	University Of Calcutta	111	Chemical Engineering
		112	Chemical Technology
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		128	Instrumentation Engineering/Instrumentation & Electronics Engineering
		136	Optics & Optoelectronics
137	Polymer Science & Technology		

U007	University of Kalyani, Science Instrumentation Centre	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		126	Information Technology
U008	Uttar Banga Krishi Viswa Vidyalaya	101	Agricultural Engineering
U009	West Bengal University Of Animal & Fishery Sciences	119	Dairy Technology
G001	Cooch Behar Government Engineering College, Cooch Behar	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
G002	Government College of Engineering and Leather Technology, Kolkata	117	Computer Science & Engineering/Computer Science & Technology
		126	Information Technology
		130	Leather Technology
G003	Government College of Engineering and Textile Technology, Berhampore	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		132	Mechanical Engineering
		144	Textile Technology
G004	Government College of Engineering & Ceramic Technology, Kolkata	110	Ceramic Engineering And Technology
		117	Computer Science & Engineering/Computer Science & Technology
		126	Information Technology
G005	Government College Of Engineering & Textile Technology, Serampore	102	Apparel Production & Management
		117	Computer Science & Engineering/Computer Science & Technology
		126	Information Technology
		144	Textile Technology
G006	Institute Of Pharmacy, Jalpaiguri	107	B.Pharm/Pharmaceutical Technology
G007	Jalpaiguri Government Engineering College, Jalpaiguri	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
G008	Kalyani Government Engineering College, Kalyani, Nadia	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
G009	Purulia Government Engineering College, Purulia	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering

		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>PU01</b>	<b>Adamas University</b>	107	B.Pharm/Pharmaceutical Technology
<b>PU02</b>	<b>Seacom Skills University</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		132	Mechanical Engineering
<b>PU03</b>	<b>Techno India University</b>	109	Biotechnology
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>PU04</b>	<b>The Neotia University</b>	115	Computer Science & Engineering (Cyber Security)
		116	Computer Science & Engineering (Data Analysis)
		131	Marine Engineering/Marine Technology
		134	Mechanical Engineering (Automobile Manufacturing)
		138	Power Engineering (Energy Study)
		142	Robot Manufacturing
		143	Telecommunication Engineering
<b>P01</b>	<b>Abacus Institute Of Engineering &amp; Management, Mogra, Hooghly</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P02</b>	<b>Academy of Technology, Adisaptagram, Hooghly</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P03</b>	<b>Aryabhata Institute Of Engineering &amp; Management, Panagar, Burdwan</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering

<b>P04</b>	<b>Asansol Engineering College, Asansol, Burdwan</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P05</b>	<b>B.P. Poddar Institute of Management &amp; Technology,Kolkata</b>	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P06</b>	<b>Bankura Unnayani Institute of Engineering, Bankura</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P07</b>	<b>BCDA College of Pharmacy &amp; Technology, Hridaypur</b>	107	B.Pharm/Pharmaceutical Technology
<b>P08</b>	<b>Bengal College of Engineering &amp; Technology, Durgapur</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P09</b>	<b>Bengal College of Engineering, Durgapur</b>	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P10</b>	<b>Bengal Collge of Pharmaceutical Science &amp; Research, Durgapur</b>	107	B.Pharm/Pharmaceutical Technology
<b>P11</b>	<b>Bengal Institute of Technology &amp; Management, Santiniketan</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering



		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P12</b>	<b>Bengal Institute of Technology, Dhapa, Kolkata</b>	109	Biotechnology
		117	Computer Science & Engineering/Computer Science & Technology
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P13</b>	<b>Bengal School of Technology, Sugandha, Hooghly</b>	107	B.Pharm/Pharmaceutical Technology
<b>P14</b>	<b>Bharat Technology, Uluberia, Howrah</b>	107	B.Pharm/Pharmaceutical Technology
<b>P15</b>	<b>Birbhum Institute of Engineering &amp; Technology, Suri, Birbhum</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P16</b>	<b>Budge Budge Institute of Technology, Budge-Budge</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P17</b>	<b>Calcutta Institute of Engineering &amp; Management, Tollygunge, Kolkata</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		127	Instrumentation And Control Engineering
<b>P18</b>	<b>Calcutta Institute of Pharmaceutical Tech. &amp; Allied Health Sciences, Uluberia</b>	107	B.Pharm/Pharmaceutical Technology
<b>P19</b>	<b>Calcutta Institute of Technology, Uluberia, Howrah</b>	111	Chemical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P20</b>	<b>Camellia Institute of Engineering</b>	114	Civil Engineering

	<b>And Technology, Bud Bud, Burdwan</b>	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P21</b>	<b>Camellia Institute of Technology &amp; Management, Bainchi, Hooghly</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P22</b>	<b>Camellia Institute of Technology, Badu Road, Madhyamgram</b>	132	Mechanical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P23</b>	<b>Camellia School of Engineering &amp; Technology, Barasat</b>	132	Mechanical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P24</b>	<b>College of Engineering And Management, Kolaghat</b>	132	Mechanical Engineering
		103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P25</b>	<b>Dr. B. C. Roy College of Pharmacy And Applied Health Sciences</b>	107	B.Pharm/Pharmaceutical Technology
<b>P26</b>	<b>Dr. B. C. Roy Engineering College,Durgapur</b>	132	Mechanical Engineering
		103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering

		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P27</b>	<b>Dr. Sudhir Chandra Sur Degree Engineering College, Dum-Dum</b>	105	Automobile Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P28</b>	<b>Dream Institute Of Technology, Bishnupur, 24-Parganas-South</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P29</b>	<b>Dumkal Institute of Engineering &amp; Technology, Dumkal, Murshidabad</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P30</b>	<b>Durgapur Institute of Advanced Technology &amp; Management, Durgapur</b>	111	Chemical Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P31</b>	<b>Elite College of Engineering, Mahispota, Sodepur</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		132	Mechanical Engineering
<b>P32</b>	<b>Future Institute of Engineering &amp; Management, Sonarpur</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering

		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P33</b>	<b>Future Institute of Technology, Boral, Garia</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P34</b>	<b>Gargi Memorial Institute of Technology, Baruiপুর, Kolkata</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P35</b>	<b>Global Institute of Management and Technology, Krishnanagar, Nadia</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P36</b>	<b>Greater Kolkata College of Engineering &amp; Management, Baruiপুর</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P37</b>	<b>Gupta College of Technological Science, Asansol, Burdwan</b>	107	B.Pharm/Pharmaceutical Technology
<b>P38</b>	<b>Haldia Institute of Technology, Haldia, Purba Medinipur</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		109	Biotechnology
		111	Chemical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		124	Food Technology
		126	Information Technology
127	Instrumentation And Control Engineering		

		132	Mechanical Engineering
		141	Production Engineering
<b>P39</b>	<b>Hemnalini Memorial College of Engineering, Haringhata</b>	113	Civil And Environmental Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		124	Food Technology
		132	Mechanical Engineering
<b>P40</b>	<b>Heritage Institute of Technology, Kolkata</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		109	Biotechnology
		111	Chemical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P41</b>	<b>Hooghly Engineering &amp; Technology College, Hooghly</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P42</b>	<b>Ideal Institute of Engineering, Kalyani</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P43</b>	<b>IMPS College of Engineering &amp; Technology, Malda</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P44</b>	<b>Institute of Engineering &amp; Management, Salt Lake</b>	117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P45</b>	<b>Institute of Science and Technology,</b>	114	Civil Engineering

	<b>Paschim Medinipur</b>	117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P46</b>	<b>JLD Engineering and Management College, Baruipur</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P47</b>	<b>Kanad Institute of Engineering &amp; Management, Mankar, Burdwan</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		132	Mechanical Engineering
<b>P48</b>	<b>Mallabhum Institute of Technology, Bishnupur, Bankura</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P49</b>	<b>MCKV Institute of Engineering, Liluah, Howrah</b>	105	Automobile Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P50</b>	<b>Meghnad Saha Institute of Technology, Kolkata</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P51</b>	<b>Modern Institute of Engineering &amp; Technology, Bandel, Hooghly</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering

		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P52</b>	<b>Murshidabad College of Engineering &amp; Technology, Murshidabad</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P53</b>	<b>National Power Training Institute, Durgapur</b>	139	Power Engineering/Power Plant Engineering
<b>P54</b>	<b>Neotia Institute of Technology Management and Science (ITME), Diamond Harbour Road, Kolkata</b>	117	Computer Science & Engineering/Computer Science & Technology
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P55</b>	<b>Netaji Subhas Engineering College, Garia, Kolkata</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		108	Biomedical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
132	Mechanical Engineering		
<b>P56</b>	<b>Netaji Subhash Chandra Bose Institute of Pharmacy, Chakdah, Nadia</b>	107	B.Pharm/Pharmaceutical Technology
<b>P57</b>	<b>NSHM Knowledge Campus, Durgapur Group of Institutions</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P58</b>	<b>NSHM Knowledge Campus, Kolkata Group of Institutions</b>	107	B.Pharm/Pharmaceutical Technology
<b>P59</b>	<b>Om Dayal Group of Institutions, Uluberia, Howrah</b>	104	Architecture
		106	B.Arch (General)
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering

<b>P60</b>	<b>Pailan College of Management &amp; Technology, Pailan Park</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P61</b>	<b>RCC Institute of Information Technology, Kolkata</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P62</b>	<b>Regent Education and Research Foundation, Barasat, Kolkata</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P63</b>	<b>Sanaka Education Trusts Group of Institutions, Durgapur, Burdwan</b>	104	Architecture
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
<b>P64</b>	<b>Saroj Mohan Institute of Technology, Guptipara, Hooghly</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P65</b>	<b>Brainware Group of Institutions-Savita Devi Education Trust, Barasat</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering



<b>P66</b>	<b>Seacom Engineering College, Sankrail, Howrah</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		131	Marine Engineering/Marine Technology
		132	Mechanical Engineering
<b>P67</b>	<b>Siliguri Institute of Technology, Siliguri</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P68</b>	<b>St. Thomas College of Engineering &amp; Technology, Khidirpur, Kolkata</b>	117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P69</b>	<b>Supreme Knowledge Foundation Group of Institutions, Mankundu, Hooghly</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P70</b>	<b>Surendra Institute of Engineering &amp; Management, Siliguri</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P71</b>	<b>Swami Vivekananda Institute of Science &amp; Technology, Sonarpur</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		123	Electronics & Communication Engineering (Industry Integrated)
		132	Mechanical Engineering
<b>P72</b>	<b>Techno India - Batanagar</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering

		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		132	Mechanical Engineering
<b>P73</b>	<b>Techno India College of Technology, Rajarhat, Salt Lake</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P74</b>	<b>Techno India-Balurghat, Balurghat, South Dinajpur</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>P75</b>	<b>Techno India-Banipur, 24 Parganas-North</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P76</b>	<b>Techno India-Durgapur, Kanksa, Panagar</b>	114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
		132	Mechanical Engineering
<b>P77</b>	<b>Techno India-Salt Lake, Sector-V, Salt Lake</b>	103	Applied Electronics & Instrumentation Engineering/Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		124	Food Technology
		126	Information Technology
		132	Mechanical Engineering

<b>PM01</b>	<b>Guru Nanak Institute of Pharmaceutical Science and Technology, Sodepur</b>	107	B.Pharm/Pharmaceutical Technology
<b>PM02</b>	<b>Guru Nanak Institute of Technology, Panihati, Sodepur</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		124	Food Technology
		126	Information Technology
<b>PM03</b>	<b>JIS College of Engineering, Kalyani, Nadia</b>	108	Biomedical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>PM04</b>	<b>Narula Institute of Technology, Agarpara, Kolkata</b>	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		121	Electrical Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
		126	Information Technology
<b>PM05</b>	<b>St. Marys Technical Campus, Kolkata</b>	132	Mechanical Engineering
		114	Civil Engineering
		117	Computer Science & Engineering/Computer Science & Technology
		120	Electrical & Electronics Engineering
		122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering

## List of course branches and branch codes, 2016

## APPENDIX -6

S.No.	Branch Code	Branch Name
1	101	Agricultural Engineering
2	102	Apparel Production & Management
3	103	Applied Electronics & Instrumentation Engineering/ Electronics & Instrumentation Engineering
4	104	Architecture
5	105	Automobile Engineering
6	106	B.Arch (General)
7	107	B.Pharm/Pharmaceutical Technology
8	108	Biomedical Engineering
9	109	Biotechnology
10	110	Ceramic Engineering And Technology
11	111	Chemical Engineering
12	112	Chemical Technology
13	113	Civil And Environmental Engineering
14	114	Civil Engineering
15	115	Computer Science & Engineering (Cyber Security)
16	116	Computer Science & Engineering (Data Analysis)
17	117	Computer Science & Engineering/Computer Science & Technology
18	118	Construction Engineering
19	119	Dairy Technology
20	120	Electrical & Electronics Engineering
21	121	Electrical Engineering
22	122	Electronics & Communication Engineering/Electronics & Telecommunication Engineering
23	123	Electronics & Communication Engineering (Industry Integrated)
24	124	Food Technology
25	125	Food Technology And Bio Chemical Engineering
26	126	Information Technology
27	127	Instrumentation And Control Engineering
28	128	Instrumentation Engineering/Instrumentation & Electronics Engineering
29	129	Jute & Fibre Technology
30	130	Leather Technology
31	131	Marine Engineering/Marine Technology
32	132	Mechanical Engineering
33	133	Mechanical Engineering-Second Shift
34	134	Mechanical Engineering (Automobile Manufacturing)
35	135	Metallurgical Engineering
36	136	Optics & Optoelectronics
37	137	Polymer Science & Technology
38	138	Power Engineering (Energy Study)
39	139	Power Engineering/Power Plant Engineering
40	140	Printing Engineering/Printing Technology
41	141	Production Engineering
42	142	Robot Manufacturing
43	143	Telecommunication Engineering
44	144	Textile Technology

## Syllabus for WBJEE-2017

## APPENDIX: 7

**MATHEMATICS:****Algebra**

A.P., G.P., H.P.: Definitions of A. P. and G.P.; General term; Summation of first n-terms of series  $\sum n$ ,  $\sum n^2$ ,  $\sum n^3$ ; Arithmetic/Geometric series, A.M., G.M. and their relation; Infinite G.P. series and its sum.

Logarithms: Definition; General properties; Change of base.

Complex Numbers: Definition and properties of complex numbers; Complex conjugate; Triangle inequality; Square root of complex numbers; Cube roots of unity; De Moivre's theorem (statement only) and its elementary applications. Solution of quadratic equation in complex number system.

Quadratic Equations: Quadratic equations with real coefficients; Relations between roots and coefficients; Nature of roots; Formation of a quadratic equation, sign and magnitude of the quadratic expression  $ax^2 + bx + c$  (where a, b, c are rational numbers and  $a \neq 0$ ).

Permutation and combination: Permutation of n different things taken r at a time ( $r \leq n$ ). Permutation of n things not all different. Permutation with repetitions (circular permutation excluded). Combinations of n different things taken r at a time ( $r \leq n$ ). Combination of n things not all different. Basic properties. Problems involving both permutations and combinations.

Principle of mathematical induction: Statement of the principle, proof by induction for the sum of squares, sum of cubes of first n natural numbers, divisibility properties like  $2^{2n} - 1$  is divisible by 3 ( $n \geq 1$ ), 7 divides  $3^{2n+1} + 2^{n+2}$  ( $n \geq 1$ )

Binomial theorem (positive integral index): Statement of the theorem, general term, middle term, equidistant terms, properties of binomial coefficients.

Matrices: Concepts of  $m \times n$  ( $m \leq 3$ ,  $n \leq 3$ ) real matrices, operations of addition, scalar multiplication and multiplication of matrices. Transpose of a matrix. Determinant of a square matrix. Properties of determinants (statement only). Minor, cofactor and adjoint of a matrix. Nonsingular matrix. Inverse of a matrix. Finding area of a triangle. Solutions of system of linear equations. (Not more than 3 variables).

Sets, Relations and Mappings: Idea of sets, subsets, power set, complement, union, intersection and difference of sets, Venn diagram, De Morgan's Laws, Inclusion / Exclusion formula for two or three finite sets, Cartesian product of sets.

Relation and its properties. Equivalence relation — definition and elementary examples, mappings, range and domain, injective, surjective and bijective mappings, composition of mappings, inverse of a mapping.

Statistics and Probability:

Measure of dispersion, mean, variance and standard deviation, frequency distribution. Addition and multiplication rules of probability, conditional probability and Bayes' Theorem, independence of events, repeated independent trials and Binomial distribution.

**Trigonometry**

Trigonometric functions, addition and subtraction formulae, formulae involving multiple and submultiple angles, general solution of trigonometric equations. Properties of triangles, inverse trigonometric functions and their properties.

**Coordinate geometry of two dimensions**

Distance formula, section formula, area of a triangle, condition of collinearity of three points in a plane.

Polar coordinates, transformation from Cartesian to polar coordinates and vice versa. Parallel transformation of axes, concept of locus, elementary locus problems. Slope of a line. Equation of lines in different forms, angle between two lines. Condition of perpendicularity and parallelism of two lines. Distance of a point from a line. Distance between two parallel lines. Lines through the point of intersection of two lines.

Equation of a circle with a given center and radius. Condition that a general equation of second degree in  $x, y$  may represent a circle. Equation of a circle in terms of endpoints of a diameter. Equation of tangent, normal and chord. Parametric equation of a circle. Intersection of a line with a circle. Equation of common chord of two intersecting circles.

Definition of conic section, Directrix, Focus and Eccentricity, classification based on eccentricity. Equation of Parabola, Ellipse and Hyperbola in standard form, their foci, directrices, eccentricities and parametric equations.

### Co-ordinate geometry of three dimensions

Direction cosines and direction ratios, distance between two points and section formula, equation of a straight line, equation of a plane, distance of a point from a plane.

### Calculus

Differential calculus: Functions, composition of two functions and inverse of a function, limit, continuity, derivative, chain rule, derivative of implicit functions and functions defined parametrically.

Rolle's Theorem and Lagrange's Mean Value theorem (statement only). Their geometric interpretation and elementary application. L'Hospital's rule (statement only) and applications. Second order derivative.

Integral calculus: Integration as a reverse process of differentiation, indefinite integral of standard functions. Integration by parts. Integration by substitution and partial fraction.

Definite integral as a limit of a sum with equal subdivisions. Fundamental theorem of integral calculus and its applications. Properties of definite integrals.

Differential Equations: Formation of ordinary differential equations, solution of homogeneous differential equations, separation of variables method, linear first order differential equations.

Application of Calculus: Tangents and normals, conditions of tangency. Determination of monotonicity, maxima and minima. Differential coefficient as a measure of rate. Motion in a straight line with constant acceleration. Geometric interpretation of definite integral as area, calculation of area bounded by elementary curves and Straight lines. Area of the region included between two elementary curves.

Vectors: Addition of vectors, scalar multiplication, dot and cross products, scalar triple product.

## PHYSICS:

**Physical World, Measurements, Units & dimensions:** Physical World, Measurements, Units & dimensions Units & Dimensions of physical quantities, dimensional analysis & its applications, error in measurements, significant figures.

Kinematics: Scalars & vectors, representation of vectors in 3D, dot & cross product & their applications, elementary differential & integral calculus, time-velocity & relevant graphs, equations of motion with uniform acceleration.

Laws of motion: Newton's laws of motion, using algebra & calculus, inertial & non inertial frames, conservation of linear momentum with applications, elastic & inelastic collisions, impulse centripetal force, banking of roads, relative velocity, projectile motion & uniform circular motion Work, power, energy: Work, power, energy Work, work-energy theorem, power, energy, work done by constant & variable forces, PE & KE, conservation of mechanical energy, conservative and nonconservative forces, PE of a spring,

Motion of centre of mass, connected systems, Friction: Centre of mass of two-particle system, motion of connected system, torque, equilibrium of rigid bodies, moments of inertia of simple geometric bodies (2D) [without derivation] conservation of angular momentum, friction and laws of friction.

Gravitation: Kepler's laws, (only statement) universal law of gravitation, acceleration due to gravity ( $g$ ), variation of  $g$ , gravitational potential & PE, escape velocity, orbital velocity of satellites, geostationary orbits.

Bulk properties of matter: Elasticity, Hooke's law, Young's modulus, bulk modulus, shear, rigidity modulus, Poisson's ratio elastic potential energy. Fluid pressure: Pressure due to a fluid column, buoyancy, Pascal's law,

effect of gravity on fluid pressure. Surface tension: Surface energy, phenomena involving surface tension, angle of contact, capillary rise,

Viscosity: Coefficient of viscosity, streamline & turbulent motion, Reynold's number, Stoke's law, terminal velocity, Bernoulli's theorem. Heat & Thermal Physics: Heat & temperature, thermal expansion of solids, liquids & gases, ideal gas laws, isothermal & adiabatic processes; anomalous expansion of water & its effects, sp. heat capacity,  $C_p$ ,  $C_v$ , calorimetry; change of state, specific latent heat capacity. Heat transfer; conduction, thermal and thermometric conductivity, convection & radiation, Newton's law of cooling, Stefan's law.

Thermodynamics: Thermal equilibrium (Zeroth law of thermodynamics), heat, work & internal energy. 1st law of thermodynamics, isothermal & adiabatic processes, 2nd law of thermodynamics, reversible & irreversible processes.

Kinetic theory of gases: Equation of state of a perfect gas, kinetic theory of gases, assumptions in Kinetic theory of gases, concept of pressure. & temperature; rms speed of gas molecules; degrees of freedom, law of equipartition of energy (introductory ideas) & application to specific heats of gases; mean free path, Avogadro number.

Oscillations & Waves: Periodic motion – time period, frequency, time-displacement equation, Simple harmonic motion (S.H.M) & its equation; phase; SHM in different systems, restoring force & force constant, energy in S.H.M. - KE & PE, free, forced & damped oscillations (introductory ideas), resonance wave motion, equation for progressive wave, longitudinal & transverse waves, sound waves, Newton's formula & Laplace's correction, factors affecting the velocity of sound in air, principles of superposition of waves, reflection of waves, standing waves in strings & organ pipes, fundamental mode, harmonics & overtones, beats, Doppler effect.

Electrostatics: Conservation of electric charges, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle & continuous charge distribution. Electric field, & potential due to a point charge & distribution of charges, electric field lines electric field due to a dipole; torque on a dipole in uniform electric field; electric flux, Gauss' theorem & its simple applications, conductors & insulators, free charges & bound charges inside a conductor; dielectrics & electric polarisation, capacitors & capacitance, combination of capacitors in series & in parallel, capacitance of a parallel plate capacitor with & without dielectric medium between the plates, energy stored in a capacitor.

Current Electricity:

Electric current, & conductor, drift velocity' mobility & their relation with electric current; Ohm's law, electrical resistance, Ohmic and non-Ohmic conductors, electrical energy & power, carbon resistors, colour codes, combination of resistances, temperature dependence of resistances, electric cell, emf and internal resistance of an electric cell, pd, combination of cells, secondary cells, (introductory) Kirchoff's laws of electrical network, simple applications, principle of Wheatstone bridge, metre bridge and potentiometer and their uses, thermoelectricity; Seebeck effect; Peltier effect, thermo emf.

Magnetic effect of current: Concept of magnetic field, Oersted's experiment, Biot - Savart law & its application to current carrying circular loop; Ampere's law & its applications to infinitely long straight wire, straight and toroidal solenoids; force on a moving charge in uniform magnetic & electric fields, cyclotron frequency; force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-- definition of ampere. Torque experienced by a current loop in a uniform magnetic field; moving coil galvanometer-its current sensitivity & conversion to ammeter & voltmeter, Inter-conversion of voltmeter & ammeter & change of their ranges.

Magnetics: Current loop as a magnetic dipole & its magnetic dipole moment, magnetic dipole moment of a revolving electron, magnetic field intensity due to a magnetic dipole bar magnet along its axis & perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field & its magnetic elements. para-, dia- & ferro- magnetic substances, with examples. Electromagnets & the factors affecting their strengths, permanent magnets.

Electromagnetic induction & alternating current: Electromagnetic induction; Faraday's laws, induced emf & current; Lenz's Law, eddy currents, self & mutual induction, alternating currents, peak and rms value of alternating current and voltage; reactance and impedance; LR & CR circuits, phase lag & lead, LCR series circuit, resonance; power in AC circuits, wattless current.

Electromagnetic waves: Electromagnetic waves and their characteristics (qualitative ideas only), transverse nature of electromagnetic waves, electromagnetic spectrum, applications of the waves from the different parts of the spectrum

Optics I (Ray optics): Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection & its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Newton's relation: Displacement method to find position of images (conjugate points) Magnification, power of a lens, combination of thin lenses in contact, combination of a lens & a mirror refraction and dispersion of light through a prism; optical instruments, human eye, image formation & accommodation, correction of eye defects (myopia, hypermetropia) using lenses, microscopes & astronomical telescopes (reflecting & refracting) & their magnifying powers.

**Optics II (Wave Optics):** Scattering of light - blue colour of the sky, elementary idea of Raman effect; wave optics: wave front & Huygens' principle, reflection & refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection & refraction using Huygens' principle Interference, Young's double slit experiment & expression for fringe width, coherent sources, Fraunhofer diffraction due to a single slit,

Particle nature of light & wave particle dualism: Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation - particle nature of light, matter waves; wave nature of particles, de Broglie relation.

Atomic Physics: Alpha-particle scattering expt Rutherford's nuclear atom model of atom; Bohr model of hydrogen atom, energy levels in a hydrogen atom, hydrogen spectrum, continuous & characteristic x-rays.

Nuclear Physics: Composition & size of nucleus, atomic masses, isotopes, isobars; isotones, radioactivity - alpha, beta & gamma particles/ rays & their properties; radioactive decay law; massenergy relation, mass defect; binding energy per nucleon & its variation with mass number; nuclear fission & fusion.

Solid state Electronics: Energy bands in solids (qualitative ideas only), conductors, insulators & semiconductors; semiconductor diode – I-V characteristics in forward & reverse bias, diode as a rectifier;

I-V characteristics of LED, photodiode, solar cell & Zener diode; Zener diode as a voltage regulator, junction transistor (BJT), transistor action, characteristics of a BJT, BJT as an amplifier (CE configuration) & oscillator; logic gates (OR, AND, NOT, NAND & NOR).

## CHEMISTRY:

Atoms, Molecules and Chemical Arithmetic:

Dalton's atomic theory; Gay Lussac's law of gaseous volume; Avogadro's Hypothesis and its applications. Atomic mass; Molecular mass; Equivalent weight; Valency; Gram atomic weight; Gram molecular weight; Gram equivalent weight and mole concept; Chemical formulae; Balanced chemical equations; Calculations (based on mole concept) involving common oxidation – reduction, neutralization, and displacement reactions; Concentration in terms of mole fraction, molarity, molality and normality. Percentage composition, empirical formula and molecular formula; Numerical problems.

Atomic Structure:

Concept of Nuclear Atom – electron, proton and neutron (charge and mass), atomic number. Rutherford's model and its limitations; Extra nuclear structure; Line spectra of hydrogen atom. Quantization of energy (Planck's equation  $E = h\nu$ ); Bohr's model of hydrogen atom and its limitations, Sommerfeld's modifications (elementary idea); The four quantum numbers, ground state electronic configurations of many electron atoms and mono – atomic ions; The Aufbau Principle; Pauli's Exclusion Principle and Hund's Rule. Dual nature of matter and light, de Broglie's relationship, Uncertainty principle; The concept of atomic orbitals, shapes of s, p and d orbitals (pictorial approach).

Radioactivity and Nuclear Chemistry:

Radioactivity  $\alpha$ -,  $\beta$ -,  $\gamma$  rays and their properties; Artificial transmutation; Rate of radioactive decay, decay constant, half-life and average age life period of radio-elements; Units of radioactivity; Numerical problems. Stability of the atomic nucleus – effect of neutron-proton (n/p) ratio on the modes of decay, group



displacement law, radioisotopes and their uses (C, P, Co and I as examples) isobars and isotones (definition and examples), elementary idea of nuclear fission and fusion reactions.

The Periodic Table and Chemical Families:

Modern periodic law (based on atomic number); Modern periodic table based on electronic configurations, groups (Gr. 1-18) and periods. Types of elements – representative (s-block and p-block), transition (d-block) elements and inner transition (f-block/lanthanides and actinides) and their general characteristics. Periodic trends in physical and chemical properties – atomic radii, valency, ionization energy, electron affinity, electronegativity, metallic character, acidic and basic characters of oxides and hydrides of the representative elements (up to  $Z = 36$ ). Position of hydrogen and the noble gases in the periodic table; Diagonal relationships.

Chemical Bonding and Molecular Structure:

Valence electrons, the Octet rule, electrovalent, covalent and coordinate covalent bonds with examples; Properties of electrovalent and covalent compounds. Limitations of Octet rule (examples); Fajans Rule. Directionality of covalent bonds, shapes of poly – atomic molecules (examples); Concept of hybridization of atomic orbitals (qualitative pictorial approach):  $sp$ ,  $sp^2$ ,  $sp^3$  and  $dsp^2$ . Molecular orbital energy diagrams for homonuclear diatomic species – bond order and magnetic properties. Valence Shell Electron Pair Repulsion (VSEPR) concept (elementary idea) – shapes of molecules. Concept of resonance (elementary idea), resonance structures (examples). Elementary idea about electronegativity, bond polarity and dipole moment, inter- and intra-molecular hydrogen bonding and its effects on physical properties (mp, bp and solubility); Hydrogen bridge bonds in diborane.

Coordination Compounds:

Introduction, Double salts and complex salts, coordination compounds (examples only), Werner's theory, coordination number (examples of coordination number 4 and 6 only), colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds.

Solid State:

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n & p type semiconductors.

Liquid State:

Vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations).

Gaseous State:

Measurable properties of gases. Boyle's Law and Charles Law, absolute scale of temperature, kinetic theory of gases, ideal gas equation – average, root mean square and most probable velocities and their relationship with temperature. Daltons Law of partial pressure, Grahams Law of gaseous diffusion. Deviations from ideal behavior. Liquefaction of gases, real gases, van der Waals equation; Numerical problems.

Chemical Energetics and Chemical Dynamics:

Chemical Energetics – Conservation of energy principle, energy changes in physical and chemical transformations. First law of thermodynamics; Internal energy, work and heat, pressure – volume work; Enthalpy. Internal energy change ( $\Delta E$ ) and Enthalpy change ( $\Delta H$ ) in a chemical reaction. Hess's Law and its applications (Numerical problems). Heat of reaction, fusion and apourization; Second law of thermodynamics; Entropy; Free energy; Criterion of spontaneity. Third law of thermodynamics (brief introduction).

Chemical Equilibria – The Law of mass action, dynamic nature of chemical equilibria. Equilibrium constants, Le Chateliers Principle. Equilibrium constants of gaseous reactions ( $K_p$  and  $K_c$ ) and relation between them (examples). Significance of  $\Delta G$  and  $\Delta G^\ominus$ .

Chemical Dynamics – Factors affecting the rate of chemical reactions (concentration, pressure, temperature, catalyst), Concept of collision theory. Arrhenius equation and concept of activation energy.

Order and molecularity (determination excluded); First order reactions, rate constant, half – life (numerical problems), examples of first order and second order reactions.

Physical Chemistry of Solutions:

Colloidal Solutions – Differences from true solutions; Hydrophobic and hydrophilic colloids (examples and uses); Coagulation and peptization of colloids; Dialysis and its applications; Brownian motion; Tyndall effect and its applications; Elementary idea of emulsion, surfactant and micelle.

Electrolytic Solutions – Specific conductance, equivalent conductance, ionic conductance, Kohlrausch's law, Faraday's laws of electrolysis, applications. Numerical problems.

Non-electrolytic Solutions – Types of solution, vapour pressure of solutions. Raoult's Law; Colligative properties – lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure and their relationships with molecular mass (without derivations); Numerical problems.

Ionic and Redox Equilibria:

Ionic equilibria – ionization of weak electrolytes, Ostwald's dilution law. Ionization constants of weak acids and bases, ionic product of water, the pH – scale, pH of aqueous solutions of acids and bases; Buffer solutions, buffer action and Henderson equation.

Acid-base titrations, acid – base indicators (structures not required). Hydrolysis of salts (elementary idea), solubility product, common ion effect (no numerical problems).

Redox Equilibria: Oxidation – Reduction reactions as electron transfer processes, oxidation numbers, balancing of redox reactions by oxidation number and ion-electron methods. Standard electrode potentials ( $E^\circ$ ), Electrochemical series, feasibility of a redox reaction. Significance of Gibb's equation:  $\Delta G^\circ = -nFE^\circ$  (without derivation), no numerical problems. Redox titrations with (examples); Nernst equations (Numerical problems).

Hydrogen:

Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen, hydrides-ionic covalent and interstitial; physical and chemical properties of water, heavy water, hydrogen peroxide – preparation, reactions and structure and use; hydrogen as a fuel.

Chemistry of Non-Metallic Elements and their Compounds:

Carbon – occurrence, isotopes, allotropes (graphite, diamond, fullerene); CO and CO<sub>2</sub> production, properties and uses. Nitrogen and Phosphorus – occurrence, isotopes, allotropes, isolation from natural sources and purification, reactivity of the free elements. Preparation, properties, reactions of NH<sub>3</sub>, PH<sub>3</sub>, NO, NO<sub>2</sub>, HNO<sub>2</sub>, HNO<sub>3</sub>, P<sub>4</sub>O<sub>10</sub>, H<sub>3</sub>PO<sub>3</sub> and H<sub>3</sub>PO<sub>4</sub>.

Oxygen and Sulphur – Occurrence, isotopes, allotropic forms, isolation from natural sources and purification, properties and reactions of the free elements. Water, unusual properties of water, heavy water (production and uses). Hydrogen peroxide and ozone (production, purification, properties and uses).

Halogens – comparative study, occurrence, physical states and chemical reactivities of the free elements, peculiarities of fluorine and iodine; Hydracids of halogens (preparation, properties, reactions and uses), inter-halogen compounds (examples); Oxyacids of chlorine.

Chemistry of Metals:

General principles of metallurgy – occurrence, concentration of ores, production and purification of metals, mineral wealth of India. Typical metals (Na, Ca, Al, Fe, Cu and Zn) – occurrence, extraction, purification (where applicable), properties and reactions with air, water, acids and non-metals. Manufacture of steels and alloy steel (Bessemer, Open-Hearth and L.D. process).

Principles of chemistry involved in electroplating, anodizing and galvanizing. Preparation and properties of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and KMnO<sub>4</sub>.

Lanthanoids – Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids – Electronic configuration, oxidation states and comparison with lanthanoids.

Chemistry in Industry:

Large scale production (including physicochemical principles where applicable, omitting technical details) and uses of Sulphuric acid (contact process), Ammonia (Haber's process), Nitric acid (Ostwald's process), sodium bicarbonate and sodium carbonate (Solvey process).

Polymers:

Natural and synthetic polymers, methods of polymerization (addition and condensation), copolymerization, some important polymers – natural and synthetic like polythene, nylonpolyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.

Surface Chemistry:

Adsorption – physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion – types of emulsions.

Environmental Chemistry:

Common modes of pollution of air, water and soil. Ozone layer, ozone hole – important chemical reactions in the atmosphere, Smog; major atmospheric pollutants; Green House effect; Global warming pollution due to industrial wastes, green chemistry as an alternative tool for reducing pollution, strategies for control of environment pollution.

Chemistry of Carbon Compounds:

Hybridization of carbon:  $\sigma$  – and  $\pi$  – bonds. Isomerism – constitutional and stereoisomerism; Geometrical and optical isomerism of compounds containing upto two asymmetric carbon atoms. IUPAC nomenclature of simple organic compounds – hydrocarbons, mono and bifunctional molecules only (alicyclic and heterocyclic compounds excluded).

Conformations of ethane and n-butane (Newman projection only). Electronic Effects: Inductive, resonance and hyperconjugation. Stability of carbocation, carbanion and free radicals; Rearrangement of carbocation; Electrophiles and nucleophiles, tautomerism in  $\beta$ -dicarbonyl compounds, acidity and basicity of simple organic compounds.

Compounds:

Alkanes – Preparation from alkyl halides and carboxylic acids; Reactions – halogenation and combustion.

Alkenes and Alkynes – Preparation from alcohols; Formation of Grignard reagents and their synthetic applications for the preparation of alkanes, alcohols, aldehydes, ketones and acids;  $S_N1$  and  $S_N2$  reactions (preliminary concept). Markownikoff's and anti-Markownikoff's additions; Hydroboration;

Oxymercuration-demercuration, reduction of alkenes and alkynes ( $H_2$ /Lindler catalyst and Na in liquid  $NH_3$ ), metal acetylides.

Haloalkanes and Haloarenes:

Haloalkanes – Preparation from alcohols; Nomenclature, nature of C -X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation. Formation of Grignard reagents and their synthetic applications for the preparation of alkanes, alcohols, aldehydes, ketones and acids;  $S_N1$  and  $S_N2$  reactions ( preliminary concept ). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Alcohols:

Preparation of alcohols from carbonyl compounds and esters. Reaction – dehydration, oxidation, esterification, reaction with sodium,  $ZnCl_2/HCl$ , phosphorous halides.

Ethers – Preparation by Williamson's synthesis; Cleavage with HCl and HI. Aldehydes and Ketones – Preparation from esters, acid chlorides, gem-dihalides, Ca-salt of carboxylic acids. Reaction – Nucleophilic addition with HCN, hydrazine, hydroxyl amines, semi carbazides, alcohols; Aldol condensation, Clemmensen and Wolff – Kishner reduction, haloform, Cannizzaro and Wittig reactions.

Carboxylic Acids – Hydrolysis of esters (mechanism excluded) and cyanides; Hunsdicker and HVZ reactions.

Aliphatic Amines – Preparation from nitro, cyano and amido compounds. Distinction of 1<sup>o</sup>, 2<sup>o</sup> and 3<sup>o</sup> amines (Hinsberg method); Reaction with HNO<sub>2</sub>; Carbyl amine reaction.

Aromatic Compounds:

Benzene – Kekule structure, aromaticity and Hückel rule. Electrophilic substitution – halogenation, sulfonation, nitration, Friedel Crafts reaction, ozonolysis. Directive influence of substituents in monosubstituted benzenes. Carcinogenicity and toxicity.

Amines – Preparation from reduction of nitro compounds; Formation of diazonium salts and their stability; Replacement of diazonium group with H, OH, X (halogen), CN and NO<sub>2</sub>, diazocoupling and reduction.

Haloarenes – Nature of C -X bond, substitution reactions; Nucleophilic substitution, cine substitution (excluding mechanism, Directive influence of halogen in monosubstituted compounds only).

Phenols – halogenation, sulfonation, nitration, Reimer – Tiemann and Kolbe reactions. Aromatic Aldehydes – Preparation by Gattermann, Gattermann-Koch, Rosenmund and Stephen's method. Reactions – Perkin, Benzoin and Cannizzaro.

Application Oriented chemistry:

Main ingredients, their chemical natures (structures excluded) and their side effects, if any, of common antiseptics, analgesics, antacids, vitamin-C.

Introduction to Bio-Molecules:

Carbohydrates – Pentoses and hexoses. Distinctive chemical reactions of glucose. Aminoacids – glycine, alanine, aspartic acid, cysteine (structures). Zwitterion structures of amino acids, peptide bond.

ADP and ATP – structures and role in bioenergetics; Nucleic acids – DNA and RNA skeleton structures. Names of essential elements in biological system.

Principles of Qualitative Analysis:

Detection of water soluble non-interfering Acid and Basic Radicals by dry and wet tests from among:

Acid Radicals: Cl<sup>-</sup>, S<sub>2</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, NO<sub>3</sub><sup>-</sup>, CO<sub>3</sub><sup>2-</sup>. Basic Radicals: Cu<sup>2+</sup>, Al<sup>3+</sup>, Fe<sup>3+</sup>, Fe<sup>2+</sup>, Zn<sup>2+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Na<sup>+</sup>, NH<sub>4</sub><sup>+</sup>.

Detection of special elements (N, Cl, Br, I and S) in organic compounds by chemical tests. Identification of functional groups in: phenols, aromatic amines, aldehydes, ketones and carboxylic acids.

**APPENDIX –8****Rules of the Examination**

1. Candidates will be allowed to enter the examination centre 30 minutes before commencement of the test.
2. Be sure about the exact location of your examination centre and means of commuting in order to avoid any inconvenience on the day of examination.
3. No candidate will be allowed to seat for the test in any centre other than the one allotted to him/her & mentioned in the admit card.
4. Carry the following documents in order to enter the examination centre.
  - a. A hard copy of admit card of WBJEE-2017
  - b. A copy of colored photograph uploaded during online application.
  - c. Any photo identity card in original such as Aadhar card/ Pan card / Passport/ 10<sup>th</sup> standard admit card/ School – ID card.
5. Frisking may be carried out while entering the centre for checking prohibited objects.
6. Candidates are advised to take their seats at least 15 minutes before the test.
7. No candidate will be allowed to enter the examination hall **beyond the scheduled time of commencement of the test under any circumstances.**
8. Candidates are not allowed to carry any written or printed material, calculator, pen, docu-pen, log table, wristwatch, any communication device like mobile phones etc. inside the examination hall. Any candidate found with such items will be **reported against** & his/her candidature will be summarily cancelled.
9. Question booklets will be distributed maximum 15 minutes before commencement of the test. Take out the OMR sheet without breaking seals of the question booklet.
10. Check that your OMR number & question booklet number are same. If not, ask the invigilator to replace the whole set from same series.
11. Put your signature on the top of question booklet.
12. Read instruction given on OMR & on the cover page of question booklet very carefully.
13. Write question booklet number & roll number at the appropriate places on the OMR. (See **APPENDIX-12**). If you make any mistake while doing so do not over write. Request the invigilator to strike it out & rewrite the correct no and put his/her signature. Wrong entry of question booklet number & roll number may lead to rejection of the OMR if not corrected & signed by the invigilator.
14. Darken appropriate bubbles of question booklet number & Roll number.
15. Write your name in BLOCK LETTERS, name of the centre & put your signature in appropriate places on the OMR. Do not put any stray mark anywhere else; it may lead to rejection of OMR.
16. Put your signature & left thumb impression at appropriate place in the attendance sheet.

17. Check that your Roll number, photograph, spelling of your name in the attendance sheet (see **APPENDIX-13**) matches with those given in your admit card. If any correction is needed, bring it to the notice of the invigilator.
18. Question booklet seals can be opened only at the time of commencement of test and as announce by the invigilator. Check all the pages of question booklet. If there is any damage or missing page or any difficulties to read the question booklet, ask your invigilator to replace the whole set from the same series.
19. Maintain silence during the test. Any conversation/gesticulation or creation of disturbances will be deemed as misdemeanor. If any candidate is found adopting any unfair means, his/her candidature will be cancelled and / or he/she will be debarred either permanently or for a period for the paper as deemed fit by the Centre- in- Charge.
20. No discussion will be allowed with the invigilator regarding the question.
21. Candidates may do rough work in the space provided in the question booklet.
22. No candidate will leave his/her seat without permission of the invigilator until the test is over.
23. No candidate will leave the hall till the end of the test & all OMRs are collected & tallied by the invigilator.
24. Candidates are allowed to take his/her question booklet after the test.
25. Any candidate found to occupy a seat other than the one allotted to him/her will be **reported against** & his/her paper will be cancelled.
26. If any Examinee is found impersonating he will be **handed over to the police** & candidature of the original candidate will be cancelled outright.
27. For any query regarding the examination contact,

**Controller of Examinations**

**West Bengal Joint Entrance Examinations Board**

**AQ-13/1, Sector –V, Salt Lake City, Kolkata-700091**

**Examination Helpdesk:-1800-3450-050, 03323671149, 59, 99.**

**Email: Link <Contact Us> in [www.wbjeeb.in](http://www.wbjeeb.in)**

## APPENDIX –9

**District-wise list of zones and their codes for choosing examination centre**

<b>Districts of W B.</b>	<b>Zones</b>			
Alipurduar (70)	Alipurduar (701)			
Bankura (71)	Bankura (711)	Bishnupur (712)		
Birbhum (72)	Bolpur (721)	Suri (722)		
Burdwan (73)	Asansol (731)	Bardhaman (732)	Durgapur (733)	
Coochbehar (74)	Coochbehar (741)			
Darjeeling (75)	Kurseong (751)	Siliguri(752)		
Dinajpur Dakshin (76)	Balurghat (761)			
Dinajpur Uttar (77)	Raiganj (771)			
Hooghly (78)	Arambagh (781)	Bandel- Chinsurah (782)	Srirampur (783)	
Howrah (79)	Bally-Uttarpara (791)	Central- Shibpur (792)	Domjur (793)	Ulluberia (794)
Jalpaiguri (80)	Jalpaiguri (801)			
Kolkata (81)	Kol-Central (811)	Kol-North (812)	Kol-South (813)	
Malda (82)	Malda (821)			
Medinipur Paschim (83)	Garbeta (831)	Jhargram (832)	Kharagpur (833)	Medinipur (834)
Medinipur Purbo (84)	Contai (841)	Haldia (842)	Tamluk (843)	
Murshidabad (85)	Berhampur (851)	Jiaganj (852)	Raghunathganj (853)	
Nadia (86)	Kalyani (861)	Krishnanagar (862)		
Purulia (87)	Purulia (871)			
24 Pgs North (88)	Barrackpur- Barasat (881)	Habra (882)	Basirhat (883)	
24 Pgs South (89)	Diamond Harbour (891)	Jainagar (892)	Sonarpur- Baruipur (893)	
<b>Other States</b>				
Assam (90)	Silchar (901)			
Tripura (91)	Agartala (911)			

WBJEEB attempts to allocate the examination centre of a candidate at his/her 1<sup>st</sup> choice. **No request for change of allocated centre will be entertained under normal circumstances.** Any examination zone may be dropped in unavoidable circumstances. **Discretion of the Board shall be final in this regard.**

**APPENDIX –10****Important dates**

	<b>Activity</b>	<b>Date (with time)</b>
1	Start of Online form fill-up	<b>05/01/2017</b>
2	Last date of online form fill-up including payment and downloading confirmation page	<b>04/02/2017</b>
3	Window for correction by candidates	<b>06/02/17 to 08/02/17</b>
4	Publication of Downloadable Admit Card in <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a>	<b>12/04/2017 (tentative)</b>
5	Date of Examinations: Paper-I (Mathematics) Paper-II (Physics & Chemistry)	<b>23/04/2017</b> <b>11:00 a.m. to 1.00 p.m.</b> <b>2:00 p.m. to 4:00 p.m.</b>
6	Publication of Results	<b>05/06/2016 (tentative)</b>

**Note: All schedules are subject to change under unavoidable circumstances.**



## APPENDIX –11

**Guidelines for filling up the online application form**

S.N.	Description of Field	Input	Remarks
1	Candidate's Name	<input type="text"/>	<ul style="list-style-type: none"> <li>• Max length 46 characters</li> <li>• Only characters are allowed</li> <li>• As registered in class 12 or equivalent Examination</li> </ul>
2.	Father's Name	<input type="text"/>	<ul style="list-style-type: none"> <li>• Maximum 46 characters</li> <li>• Only characters are allowed</li> <li>• As registered in class 12 or equivalent Examination.</li> <li>• Salutations like Late, Mr., Ms., Mrs., Dr., Prof. should not used</li> </ul>
3.	Mother's Name	<input type="text"/>	<ul style="list-style-type: none"> <li>• Maximum 46 characters</li> <li>• Only characters are allowed</li> <li>• As registered in class 12 or equivalent Examination.</li> <li>• Salutations like Late, Mr., Ms., Mrs., Dr., Prof. should not used</li> </ul>
4.	Date of Birth	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• DD/MM/YYYY</li> <li>• (See section 3.1 of Information Bulletin)</li> </ul>
5.	Gender	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> <li>• Transgender</li> </ul>
6.	Domicile	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Dropdown list.</li> </ul>
7.	Category	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• For domiciles of W.B. <ul style="list-style-type: none"> <li>○ General</li> <li>○ SC</li> <li>○ ST</li> <li>○ OBC-A</li> <li>○ OBC –B</li> </ul> </li> <li>• For domicile in other states/UTs <ul style="list-style-type: none"> <li>○ General</li> </ul> </li> </ul>
8.	Person with Disability (PWD)	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul> (Formerly known as Physically Handicapped)

9.	Type of Disability	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Loco-motor disorder in lower limbs</li> <li>• Loco-motor disorder in upper limbs</li> <li>• Visual Impairment</li> <li>• Speech and Hearing Impairment</li> <li>• Other</li> </ul>
10.	Percentage of Disability	<input type="text"/>	<ul style="list-style-type: none"> <li>• Percentage of Disability</li> </ul>
11.	Home District	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Dropdown list if domicile of WB. Otherwise write name of home district</li> </ul>
12.	Income Category	<input type="text" value="---Select---"/>	<ol style="list-style-type: none"> <li>1. Above 10 lakhs</li> <li>2. From 6.0 lakhs to below 10 lakhs</li> <li>3. From 2.5 lakhs to below 6.0 lakhs</li> <li>4. Below 2.5 lakhs</li> </ol>
13.	Do you belong to TFW	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Auto filled</li> <li>• 'Yes', If income category given above is 4 and domicile of WB then TFW='YES' else TFW='NO'</li> </ul>
14.	Religion	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Hindu</li> <li>• Muslim</li> <li>• Christian</li> <li>• Buddhist</li> <li>• Sikh</li> <li>• Other</li> </ul>
15.	Nationality	<input type="text" value="Auto Filled"/>	<ul style="list-style-type: none"> <li>• Indian</li> </ul>
16.	Aadhaar No.	<input type="text"/>	Aadhaar No. (Optional)
17.	Have you Applied in JEE (Main) 2017?	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
18.	Enter Application No of JEE(Main) 2017	<input type="text"/>	<ul style="list-style-type: none"> <li>• Mandatory, if answer of the previous question is 'Yes'.</li> </ul>
21	Apply For	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Engineering/Architecture/Pharmacy</li> </ul>
22.	1 <sup>st</sup> Choice of Exam City:	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list

23.	2 <sup>nd</sup> Choice of Exam City:	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list
24.	3 <sup>rd</sup> Choice of Exam City:	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list
<b>Class 12<sup>th</sup> equivalent examination details</b>			
33.	Educational Qualification	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Class 12<sup>th</sup> or equivalent</li> </ul>
34.	Pass Status	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Passed</li> <li>• Appearing</li> </ul>
35.	Course/Stream Name	<input type="text" value="---Select---"/>	<ul style="list-style-type: none"> <li>• Class 12<sup>th</sup> or equivalent</li> </ul>
36.	Board/University Name	<input type="text" value="---Select---"/>	Select from drop down list
37.	Year of Passing	<input type="text" value="---Select---"/>	Select from drop down list
38.	Maximum Marks	<input type="text"/>	
39.	Marks Obtained	<input type="text"/>	
40.	Marks (%)	<input type="text"/>	Auto Calculate
41.	Roll No/Enroll No	<input type="text"/>	
42.	Institute Name and address	<input type="text"/>	Mandatory
43.	Pin code	<input type="text"/>	Mandatory
<b>Communication Details</b>			
44.	Complete Address	<input type="text"/>	Max 50 char
45.	Locality	<input type="text"/>	Max 50 char (optional)
46.	City / Town / Village	<input type="text"/>	Mandatory
47.	State	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list

48.	District	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list
49.	Pin Code	<input type="text"/>	Mandatory
50.	Email Id	<input type="text"/>	Mandatory
51.	Mobile no.	<input type="text"/>	Mandatory
<b>Choose Password</b>			
52.	Choose Password	<input type="text"/>	Mandatory
53.	Confirm Password	<input type="text"/>	Mandatory
54.	Security Question	<input type="text" value="---Select---"/>	Mandatory. Select from dropdown list
55.	Security Answer	<input type="text"/>	Mandatory
<b>Image Uploading</b>			
56.	At this stage the candidate is required to upload scanned images of his/her recent colour photograph, signature and left thumb impression (LTI) all in one go. For detail instruction, see <b>section 8.3</b> of the Information Bulletin.		
<b>Fee Payment</b>			
57.	At this stage, the candidate is required to pay the requisite fees. For detail instruction, see <b>section 8.4</b> of the Information Bulletin.		
<b>Confirmation Page</b>			
58.	Once the fee payment is made, the candidate will be directed to download the confirmation page. Download the confirmation page and preserve the same.		

Sample OMR

APPENDIX -12

**TO BE FILLED IN BY THE CANDIDATE USING BLACK/BLUE BALL POINT PEN ONLY**

**INSTRUCTIONS FOR CANDIDATES**

1. Use only BLACK or BLUE ball point pen for filling the bubbles.  
 2. For Category 1 and Category 2 questions, more than one darkened bubble will be treated as wrong answers.  
 3. Please do not make any stay /extraneous mark on this sheet. Rough work must not be done on this sheet.  
 4. Do not damage this sheet by using eraser or white ink etc.  
 5. Do not write your name of roll number or put any identification on right hand side of this sheet. Violation of this will lead to invalidation of candidature.  
 6. How to darken the bubbles:

Correct Method

Wrong Method

2000007  
 OMR ANSWER SHEET NO.

1. QUESTION BOOKLET NO.  
 2000007

2. ROLL NUMBER  
 4701110007

3. SUBJECT  
**Biological Science**

If a candidate tampers with the BARCODE, he/she will be disqualified.

**Biological Science**    **CATEGORY I: Q1-Q80**

1	A	B	C	D	61	A	B	C	D
2	A	B	C	D	62	A	B	C	D
3	A	B	C	D	63	A	B	C	D
4	A	B	C	D	64	A	B	C	D
5	A	B	C	D	65	A	B	C	D
6	A	B	C	D	66	A	B	C	D
7	A	B	C	D	67	A	B	C	D
8	A	B	C	D	68	A	B	C	D
9	A	B	C	D	69	A	B	C	D
10	A	B	C	D	70	A	B	C	D
11	A	B	C	D	71	A	B	C	D
12	A	B	C	D	72	A	B	C	D
13	A	B	C	D	73	A	B	C	D
14	A	B	C	D	74	A	B	C	D
15	A	B	C	D	75	A	B	C	D
16	A	B	C	D	76	A	B	C	D
17	A	B	C	D	77	A	B	C	D
18	A	B	C	D	78	A	B	C	D
19	A	B	C	D	79	A	B	C	D
20	A	B	C	D	80	A	B	C	D
21	A	B	C	D					
22	A	B	C	D					
23	A	B	C	D					
24	A	B	C	D					
25	A	B	C	D					
26	A	B	C	D					
27	A	B	C	D					
28	A	B	C	D					
29	A	B	C	D					
30	A	B	C	D					
31	A	B	C	D					
32	A	B	C	D					
33	A	B	C	D					
34	A	B	C	D					
35	A	B	C	D					
36	A	B	C	D					
37	A	B	C	D					
38	A	B	C	D					
39	A	B	C	D					
40	A	B	C	D					
41	A	B	C	D					
42	A	B	C	D					
43	A	B	C	D					
44	A	B	C	D					
45	A	B	C	D					
46	A	B	C	D					
47	A	B	C	D					
48	A	B	C	D					
49	A	B	C	D					
50	A	B	C	D					
51	A	B	C	D					
52	A	B	C	D					
53	A	B	C	D					
54	A	B	C	D					
55	A	B	C	D					
56	A	B	C	D					
57	A	B	C	D					
58	A	B	C	D					
59	A	B	C	D					
60	A	B	C	D					

**CATEGORY II: Q81-Q105**

81	A	B	C	D					
82	A	B	C	D					
83	A	B	C	D					
84	A	B	C	D					
85	A	B	C	D					
86	A	B	C	D					
87	A	B	C	D					
88	A	B	C	D					
89	A	B	C	D					
90	A	B	C	D					
91	A	B	C	D					
92	A	B	C	D					
93	A	B	C	D					
94	A	B	C	D					
95	A	B	C	D					
96	A	B	C	D					
97	A	B	C	D					
98	A	B	C	D					
99	A	B	C	D					
100	A	B	C	D					
101	A	B	C	D					
102	A	B	C	D					
103	A	B	C	D					
104	A	B	C	D					
105	A	B	C	D					

**CATEGORY III: Q106-Q115**

106	A	B	C	D					
107	A	B	C	D					
108	A	B	C	D					
109	A	B	C	D					
110	A	B	C	D					
111	A	B	C	D					
112	A	B	C	D					
113	A	B	C	D					
114	A	B	C	D					
115	A	B	C	D					

**8. ANSWERS**

4. NAME OF THE CANDIDATE (In Block Letters)  
 Rajarshi Lal Rakshit

5. NAME OF THE CENTRE  
 Alipurduan Hindi Madhyamik  
 vidyalaya. (Hs)






6. SIGNATURE OF THE CANDIDATE  
 Rajarshi Lal Rakshit

7. SIGNATURE OF THE INVIGILATOR  
 Mahan Lal Ram  
 207116

1441\_LD

Sample Attendance Sheet

APPENDIX –13

WEST BENGAL JOINT ENTRANCE EXAMINATIONS BOARD AQ-13/1, Sector - V, Salt Lake City, Kolkata - 700 091 ATTENDANCE SHEET WBJEE-2016, MEDICAL				
118665	CENTRE CODE :	89412	DATE OF EXAM : 20/07/2016	
	CENTRE NAME :	MEGHNAD SAHA INSTITUTE OF TECHNOLOGY		NO. OF PAGES : 115 of 115
S.No. 455	ROLL NO	5894120249	NAME SUBRATA HALDAR	
	Subrata Haldar.		Biological Science	Physics & Chemistry
	LTI of Candidate		Absent* (A)	Absent* (A)
			Question Booklet No. 2080345	Question Booklet No. 1080345
			Signature of Candidate Subrata Haldar.	Signature of Candidate Subrata Haldar.
S.No. 456	ROLL NO	5894120250	NAME DEBANJAN RAJBANSHI	
	Debanjan Rajbanshi		Biological Science	Physics & Chemistry
	LTI of Candidate		Absent* (A)	Absent* (A)
			Question Booklet No. 2080346	Question Booklet No. 1080346
			Signature of Candidate Debanjan Rajbanshi	Signature of Candidate Debanjan Rajbanshi
S.No.	ROLL NO	NAME		
			Biological Science	Physics & Chemistry
	LTI of Candidate		Absent* (A)	Absent* (A)
			Question Booklet No.	Question Booklet No.
			Signature of Candidate	Signature of Candidate
S.No.	ROLL NO	NAME		
			Biological Science	Physics & Chemistry
	LTI of Candidate		Absent* (A)	Absent* (A)
			Question Booklet No.	Question Booklet No.
			Signature of Candidate	Signature of Candidate
*Absent Candidates should be marked in black/blue ink as (A) by the invigilator.				
Signature of Centre-in-Charge/Addl Centre-in-Charge		Biological Science		Physics & Chemistry
		Absents 00 (ZERO)		00
		Signature of Invigilator Prabhakar Singh Mahata		Swojit Das