

# INFORMATION BULLETIN

## **WEST BENGAL JOINT ENTRANCE EXAMINATION-2021** (WBJEE-2021)

### **Date of Examination**

**17.07.2021 (Sunday)**

(Tentative and may be changed in  
extraordinary circumstances)



### **West Bengal Joint Entrance Examinations Board**

AQ-13/1, Sector V, Salt Lake City, Kolkata – 700 091

Toll free phone Nos.: 1800-1023-781, 1800-3450-050

Release date: 18<sup>th</sup> February 2021



<b>IMPORTANT INSTRUCTIONS FOR ON LINE APPLICATION</b>	
<p><b>Candidates are required to go through the Information Bulletin carefully before applying for the examination.</b></p> <p>Once an application is received, it will be construed that the candidate agrees to all terms &amp; conditions, rules &amp; regulations stipulated in the Information Bulletin and in the relevant notices published by the Board for the said purpose.</p> <p><b>Any application not in compliance with the conditions specified in the Information Bulletin is liable to be rejected.</b></p>	
1.	Application for the examination must be done online only. No printed application form is available.
2.	Ensure filling genuine application form available online at <a href="http://www.wbjeeb.nic.in">www.wbjeeb.nic.in</a>
3.	<p><b>It is essential to have a mobile number and a unique email ID.</b></p> <p>All future communications will be sent to the registered mobile number and email ID. WBJEEB will not be responsible for non-receipt of any communication due to the mobile number and/or the email ID being wrong/non-existing/non-functional/changed or due to network condition.</p>
4.	<p>Once the registration details i.e., <b>name, father's name, mother's name, gender, domicile and date of birth</b> are entered and submitted, this information <b>cannot be changed/modified/edited under any circumstances.</b></p> <p>Also, the information must match exactly with the school/college admit cards, mark sheets, certificates, photo identity cards, caste/category/income/EwS certificates etc. which a candidate has to produce at the time of entering the examination hall, during counselling/admission and registration with the University.</p>
5.	Do not attempt to make any duplicate application.
6.	Do not share your application number; password, security question/answer with anyone.
7.	Upload <b>scanned</b> copy of photograph and signature as per the instructions provided in the Information Bulletin. If any candidate receives any SMS/email regarding discrepancy in photograph/ signature, he/she must take corrective action immediately <b>within one day</b> . Admit cards will not be issued if these images are illegible and thus not acceptable.
8.	If any information <b>other than</b> name, father's name, mother's name, gender, domicile and date of birth given in the application needs to be corrected, the rectification can be done by the candidate only within the notified ' <b>Correction Period</b> '. The Board cannot and will not make or allow any correction thereafter.
9.	<p>The Examination Fees can be paid by Net Banking/ Debit Card/ Credit Card only.</p> <p>Application fee for the examination is <b>Rs 500 (Rupees five hundred only) for General candidates and Rs 400 (Rupees four hundred only) for SC/ST/OBC-A/OBC-B candidates, plus the Bank's service charges as applicable.</b></p>

	<p>SC/ST/OBC-A/OBC-B candidates availing of the concession will have to upload respective certificates in given formats at the time of counselling, failing which his/her candidature will be cancelled.</p> <p><b>The fee once paid is not refundable under any circumstances.</b></p> <p><b>Do not wait for the last day to make fee payment to avoid payment failure by Bank or EPG.</b></p>
10.	Keep copies of <b>confirmation page, admit card</b> in safe custody.
11.	Candidates are requested to go through the Board's website ( <a href="http://www.wbjeeb.nic.in/wbjeeb.in">www.wbjeeb.nic.in/wbjeeb.in</a> ) regularly to update themselves for the latest information.
12.	For any information on required Academic Qualification in respect to admission into different University/Institution and in respect to other specific criteria issued by the Government/Regulatory bodies from time to time, the candidates are requested to regularly go through the websites of the respective University/Institution/Regulatory body and the Board's website. Board will not be held responsible by any way, if any candidate fails to aware himself/herself regularly on any updated information.
13.	<p>For any query regarding the examination, contact:</p> <p style="text-align: center;"><b>The Controller of Examinations</b> <b>West Bengal Joint Entrance Examinations Board</b> <b>AQ-13/1, Sector -V, Salt Lake City, Kolkata-700091</b></p> <p style="text-align: center;"><b>Examination Helpdesk: -1800-1023-781, 1800-3450-050</b> <b>Email: <a href="mailto:info@wbjeeb.in">info@wbjeeb.in</a></b></p>

<b>Section</b>	<b>CONTENTS</b>	<b>Page</b>
<b>1.0</b>	Introduction	8
<b>2.0</b>	The West Bengal Joint Entrance Examination-2021 (WBJEE-2021)	8
<b>2.1</b>	The mode of Examination	8
<b>2.2</b>	Subjects of Examination:	8
<b>2.3</b>	Syllabus of Examination:	8
<b>2.4</b>	Schedule of WBJEE-2021	8
<b>2.5</b>	Pattern of Question Papers in WBJEE-2021	9
<b>2.6</b>	Mode of answering in the examination	9
<b>2.7</b>	Scoring Methodology	9
<b>2.8</b>	Ranking Methodology and publication of Merit Lists	10
<b>2.9</b>	Tie-breaking Methodology in determination of Merit Rank:	11
<b>2.9.1</b>	Tie breaking Rule for GMR	12
<b>2.9.2</b>	Tie breaking Rule for PMR	12
<b>2.9.3</b>	Final Tie-breaking rule for GMR and PMR	12
<b>2.10</b>	Rules of the examination (WBJEE-2021)	12
<b>3.0</b>	Eligibility and academic qualification	12
<b>3.1</b>	Eligibility criteria for appearing in the WBJEE-2021	12
<b>3.2</b>	General Academic Qualifications for admission	13
<b>3.2.1</b>	For admission to Engineering courses	13
<b>3.2.2</b>	For admission to Pharmacy courses	13
<b>3.2.3</b>	Verification of eligibility criteria	14
<b>3.3</b>	Special eligibility criteria	14
<b>3.3.1</b>	Institute specific special eligibility criteria	14
<b>3.3.1.1</b>	University of Calcutta	14
<b>3.3.1.2</b>	Jadavpur University (Faculty of Engineering & Technology):	15
<b>3.3.1.3</b>	West Bengal University of Animal and Fishery Sciences	15
<b>3.3.1.4</b>	Neotia University	15
<b>3.3.1.5</b>	Aliah University	16
<b>3.3.1.6</b>	Sister Nivedita University	16
<b>3.3.2</b>	Course specific special eligibility criteria	16
<b>3.3.2.1</b>	The degree course in Marine Engineering	16
<b>3.3.2.2</b>	The Five-Year Degree Course in Architecture	17
<b>3.4</b>	Requirements in terms of Residential/Domicile Criteria	17

<b>3.4.1</b>	Criteria to be treated as domicile of West Bengal and applicable proforma of certificate	17
<b>3.4.2</b>	Competent authority to issue domicile certificate	18
<b>4.0</b>	Seat matrix	19
<b>5.0</b>	Reservation of seats for students under Reserved Category	19
<b>5.1</b>	Reservation of Seats for SC/ST/OBC-A/OBC-B/PwD	19
<b>5.2</b>	Competent Authorities for the issuance of SC/ST Certificate	19
<b>5.3</b>	Competent Authorities for the issuance of OBC-A / OBC-B Certificate	19
<b>5.4</b>	Reservation of seats for PwD candidates	20
<b>5.5</b>	Special facilities to PwD candidates for appearing in the examination	20
<b>5.6</b>	Reservation of Seats for admission of the wards of Defense Personnel (Defense Quota Seats)	21
<b>5.7</b>	Seats for admission through JEE (Main) 2021	21
<b>6.0</b>	Tuition Fee Waiver (TFW) Scheme	22
<b>6.1</b>	Availability of seats under the Tuition Fee Waiver (TFW) Scheme	22
<b>6.2</b>	Submission of Income Certificate in availing seat under the TFW Scheme	22
<b>7.0</b>	Legal jurisdiction	22
<b>8.0</b>	Procedure for submission of application form and payment of examination fees.	22
<b>8.1</b>	Registration	23
<b>8.2</b>	Application	23
<b>8.3</b>	Uploading of images	23
<b>8.4</b>	Payment of Examination Fees	23
<b>8.5</b>	Confirmation Page	24
<b>8.6</b>	Correction of application form	24
<b>9.0</b>	Admit Card	25
<b>10.0</b>	Allocation of examination centre	25
<b>11.0</b>	Evaluation and declaration of result	25
<b>12.0</b>	Counselling/seat allotment and admission	27
<b>APPENDIX -1</b>	Proforma-a1 for domicile certificate	28
<b>APPENDIX -2</b>	Proforma-a2 for domicile certificate	29
<b>APPENDIX -3</b>	Proforma-b for domicile certificate	30
<b>APPENDIX -4</b>	Proforma for income certificate	31
<b>APPENDIX -5</b>	Certificate regarding physical limitation to write in an examination	32

<b>APPENDIX -6</b>	Letter of Undertaking for Using Own Scribe	33
<b>APPENDIX -7</b>	Syllabus	34
<b>APPENDIX-8</b>	Rules of the examination	42
<b>APPENDIX-9</b>	Examination Zones	44
<b>APPENDIX-10</b>	The “specified disabilities”	46
<b>APPENDIX-11</b>	Defence Quota seats for academic session 2020-21	47

<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 established in 1962 by 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. Subsequently, the Board was recognised as a Statutory Body vide West Bengal Act XIV of 2014 and was authorised for conducting the Joint Entrance Examination (WBJEE) in respect to admission to various institutions in West Bengal imparting education in Medical, Engineering and Technological courses.</p> <p>The Board is empowered to conduct Common Entrance Examinations for admission to Undergraduate and Postgraduate Professional and Vocational Courses.</p> <p>WBJEEB has been instrumental in the admission process based on online application and allotment through e-Counselling since 2012. It advocates fairness and transparency, ensures no-error, and adopts state-of-the-art technology.</p>						
<b>2.0</b>	<p><b>The West Bengal Joint Entrance Examination-2021 (WBJEE-2021)</b></p> <p>For the academic session of 2021-22, the Board is going to conduct the Common Entrance Examination for admission to Undergraduate Courses in Engineering &amp; Technology, Pharmacy and Architecture Courses of different Universities, Government Colleges as well as Self Financing Engineering &amp; Technological Institutes in the State of West Bengal.</p>						
<b>2.1</b>	<p><b>The mode of Examination</b></p> <p>The examination will be in offline mode (OMR based examination).</p>						
<b>2.2</b>	<p><b>Subjects of Examination</b></p> <p>Candidates are required to appear for two papers in WBJEE-2021.</p> <ol style="list-style-type: none"> <li>1. <b>Paper-I - Mathematics</b></li> <li>2. <b>Paper-II - Physics &amp; Chemistry (combined).</b></li> </ol>						
<b>2.3</b>	<p><b>Syllabus of Examination:</b> The subject wise Syllabus for the WBJEE-2021 is given in appendix-7.</p>						
<b>2.4</b>	<p><b>Schedule of WBJEE-2021</b></p> <table border="1" data-bbox="359 1682 1390 1989"> <thead> <tr> <th data-bbox="359 1682 722 1789">Date of Examination</th> <th data-bbox="722 1682 1027 1789">Paper/ Subject</th> <th data-bbox="1027 1682 1390 1789">Time schedule</th> </tr> </thead> <tbody> <tr> <td data-bbox="359 1789 722 1989"> <b>17.07.2021</b>  <b>(Sunday)</b>            (Tentative and may be changed in extraordinary)         </td> <td data-bbox="722 1789 1027 1989">           Paper-I            (Mathematics)         </td> <td data-bbox="1027 1789 1390 1989"> <b>11:00 a.m. to 1.00 p.m.</b> </td> </tr> </tbody> </table>	Date of Examination	Paper/ Subject	Time schedule	<b>17.07.2021</b> <b>(Sunday)</b> (Tentative and may be changed in extraordinary)	Paper-I (Mathematics)	<b>11:00 a.m. to 1.00 p.m.</b>
Date of Examination	Paper/ Subject	Time schedule					
<b>17.07.2021</b> <b>(Sunday)</b> (Tentative and may be changed in extraordinary)	Paper-I (Mathematics)	<b>11:00 a.m. to 1.00 p.m.</b>					



circumstances)	Paper-II (Physics & Chemistry)	<b>2:00 p.m. to 4:00 p.m.</b>
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WBJEE-2021 will be held once in a year and there shall be no further examination under any circumstances for those who are unable to appear on the above date and time.

**2.5 Pattern of Question Papers in WBJEE-2021**

All questions will be of **Multiple-Choice Questions (MCQ)**, with four options against each of the questions. There will be three categories of questions in each of the subjects. The number of questions as well as maximum marks for each are given in the following table:

	<b>Category-I</b> Full Marks-1	<b>Category-II</b> Full Marks-2	<b>Category-III</b> Full Marks-2	Total Number of Questions	<b>Total Marks</b>
	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>

**2.6 Mode of answering in the examination.**

- a) Questions are to be answered on specially designed optical machine-readable response **(OMR)** sheet, which will be evaluated by Optical Mark Recognition method. Thus, it is very important to follow the correct method of marking.
- b) There will be four alternative answers for each question. Candidates will indicate response to the questions by **darkening the appropriate circle completely with blue/black ball point pen.**
- 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. **WBJEEB will be, in no way, responsible for such eventuality.**
- d) Response marking cannot be edited/changed/erased/modified.

**2.7 Scoring Methodology**

<b>Category</b>	<b>Scoring methodology</b>
<b>I</b>	a) Only one option is correct. b) Correct response will yield 1 (one) mark.

	<p>c) Incorrect response will yield <math>-1/4</math> (25% negative) marks.</p> <p>d) For any combination of response with more than one option, the said answer will be treated as incorrect and will yield <math>-1/4</math> (25% negative) marks.</p> <p>e) Not attempting the question will fetch zero mark.</p>
<b>II</b>	<p>a) Only one option is correct.</p> <p>b) Correct response will yield 2(two) marks.</p> <p>c) Incorrect response will yield <math>-1/2</math> (25% negative) marks.</p> <p>d) For any combination of response with more than one option, the said answer will be treated as incorrect and will yield <math>-1/2</math> (25% negative) marks.</p> <p>e) Not attempting the question will fetch zero mark.</p>
<b>III</b>	<p>a) <b>One or more</b> options may be correct.</p> <p>b) Only all Correct response will yield 2(two) marks.</p> <p>c) Any combination of correct and wrong response will be treated as incorrect and will yield 0 (zero) mark.</p> <p>d) For partially correct response, marks awarded will be = <math>2 \times (\text{no. of correct options marked} \div \text{total no. of correct options})</math>.</p> <p>e) Not attempting the question will fetch zero mark.</p>

**2.8**

**Ranking Methodology and publication of Merit Lists.**

WBJEEB will prepare merit ranks based on the candidates' **score in the entrance test**. Individual candidates will be able to view and download his/her Rank Card, which will contain score and rank. **WBJEEB does not publish any rank/score list for public.**

Based on the papers (subjects) appeared in the WBJEE-2021 followed by marks scored there-of two separate Merit Ranks shall be generated by the Board as per the following method:

**A. General Merit Rank: (GMR)**

- a. A list for General Merit Rank (GMR) shall be prepared based on the total score obtained in Paper-I and Paper-II taken together.
- b. Ranking shall be done in the descending order of total marks scored in all the subjects. In case of ties, tie-breaking rules as given in 2.9 shall be applicable.
- c. Separate reserved category merit position will also be indicated for respective category of students e.g., SC Rank, ST Rank, OBC-A Rank,

OBC-B Rank, PwD Rank, TFW Rank.

- d. **Admission to all Engineering / Technology / Architecture Courses and to the Pharmacy Course in Jadavpur University shall be made based on GMR only.**
- e. **Sequencing order for counselling/allotment of seat/admission will be based on GMR only** (not on category ranks). Category ranks are only for information to candidates.
- f. Category ranks are generated based on the birth category information given by the candidates during online application. If during verification, any candidate's claim is found invalid, his/her category rank will be cancelled and the candidate will be considered in general category. **Category ranks of other candidates will not be revised.**

**B. Pharmacy Merit Rank: (PMR)**

- a) A list for Pharmacy Merit Rank (PMR) shall be prepared based on the score in paper-II only, i.e., Physics and Chemistry.
- b) Ranking shall be done in the descending order of marks scored in paper-II. In case of ties, tie-breaking rules as given in 2.9 shall be applicable.
- c) Separate reserved category merit position will also be indicated for respective category of students e.g., SC Rank, ST Rank, OBC-A Rank, OBC-B Rank, PwD Rank, TFW Rank.
- d) **Admission to all Pharmacy Courses except in Jadavpur University shall be done based on PMR only.**
- e) **Sequencing for allotment of seat will be based on PMR only** (not on category ranks). Category ranks are only for information to candidates.
- f) Category ranks are generated based on the birth category information given by the candidates during online application. If during verification, any candidate's claim is found invalid, his/her category rank will be cancelled and the candidate will be considered in general category. **Category ranks of other candidates will not be revised.**

**C. Papers and ranks.**

- a) Candidates appearing in both paper-I and paper-II are eligible for both GMR as well as PMR. Such candidates are considered for admission in all courses.
- b) Candidates appearing only in paper-II are eligible for PMR only. Such candidates are considered for admission into pharmacy courses only (except in Jadavpur University)
- c) Candidates appearing only in paper-I are not eligible for any rank.

<b>2.9</b>	<b>Tie-breaking Methodology in determination of Merit Rank</b>
<b>2.9.1</b>	<p><b>Tie breaking Rules for GMR.</b></p> <p>a) Less negative marks in Mathematics, Physics and Chemistry taken together.</p> <p>b) More positive marks in Mathematics and Physics taken together.</p> <p>c) More positive marks in Mathematics and Chemistry taken together.</p> <p>d) Less negative marks in Mathematics and Physics taken together.</p> <p>e) Less negative marks in Mathematics and Chemistry taken together.</p> <p>f) More positive marks in Mathematics for only the 2 marks questions</p> <p>g) More positive marks in Physics for only the 2 marks questions</p> <p>h) More positive marks in Chemistry for only the 2 marks questions</p> <p>i) Less negative marks in Mathematics for only the 2 marks questions</p> <p>j) Less negative marks in Physics for only the 2 marks questions.</p>
<b>2.9.2</b>	<p><b>Tie breaking Rules for PMR.</b></p> <p>a) Less negative marks in Physics &amp; Chemistry</p> <p>b) More positive marks in Chemistry</p> <p>c) Less negative marks in Chemistry</p> <p>d) More positive marks in Chemistry for only the 2 marks questions</p> <p>e) Less negative marks in Chemistry for only the 2 marks questions</p> <p>f) More positive marks in Physics for only the 2 marks questions</p> <p>g) Less negative marks in Physics for only the 2 marks questions.</p>
<b>2.9.3</b>	<p><b>Final Tie-breaking rule for GMR and PMR</b></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.</p>
<b>2.10</b>	<p><b>Rules of the examination (WBJEE-2021):</b> Rules to be followed during the examination is given in APPENDIX-8</p>
<b>3.0</b>	<b>Eligibility and academic qualification</b>
<b>3.1</b>	<p><b>Eligibility criteria for appearing in the WBJEE-2021.</b></p> <p>a) Citizenship: Applicant must be a citizen of India OR OCI (subject to approval of the Competent Authority). OCI candidates will be eligible for only Unreserved seats in All India quota.</p>

	<p>b) Candidates must have passed OR must be appearing in 2021 in class 12 in (10+2) system only.</p> <p>c) Age Restriction:</p> <ol style="list-style-type: none"> <li>I. The lower age limit is 17 (seventeen) years as on 31.12.2021. A candidate should have been born on or before 31.12.2004. There is no upper age limit in appearing in the examination.</li> <li>II. However, for admission to the degree level Marine Engineering Course the upper age limit is 25 Years as on 31.12.2021.</li> </ol>
<p><b>3.2</b></p>	<p><b>General Academic criteria for admission to Engineering/Pharmacy Courses</b> (As per latest communications from the concerned universities. In case of any revision by any university/ authority, the same will be notified by the Board)</p>
<p><b>3.2.1</b></p>	<p><b>For admission to Engineering courses</b></p> <ol style="list-style-type: none"> <li>a) Candidate must have passed the Qualifying Examination i.e., the '<b>10+2</b>' examination with <b>Physics and Mathematics</b> along with any one of <b>Chemistry / Biotechnology / Biology / Computer Science / Computer Application/Technical Vocational Subject</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 e.g., SC, ST, OBC-A, OBC-B, PwD) in the above three subjects <b>taken together</b>.</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> </ol>
<p><b>3.2.2</b></p>	<p><b>For admission to Pharmacy courses</b></p> <ol style="list-style-type: none"> <li>a) Candidate must have passed '10+2' examination with <b>Physics, Chemistry, Mathematics / Biology</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 e.g., SC, ST, OBC-A, OBC-B, PwD) in the above three subjects <b>taken together</b>.</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. <b>However, as per the rules of the concerned Regulatory Body, the students possessing</b></li> </ol>

	<p><b>10+2 qualification from non-formal and non-classrooms-based schooling such as National Institute of Open Schooling, open school systems of States etc. shall not be eligible for admission to B. Pharm. Course.</b></p> <p><b>e) The criteria for admission into Bachelor of Pharmacy course in Jadavpur University is given in section 3.3.1.2-a</b></p>
<b>3.2.3</b>	<p><b>Verification of eligibility criteria.</b></p> <p>Admit cards for the examination are issued based on the information provided by the candidate. All verifications are done during and after counselling. Hence candidates cannot assume that the personal information shown in the admit card are accepted by the Board.</p> <p>If it is found during counselling that any information given by the candidate is/are not correct or if the candidate is unable to produce certificate/document/proof for the same, his/her information will be corrected/modified accordingly which may even make him/her ineligible for some/any course(s).</p> <p>Similarly, if at any stage during or after counselling it is found on scrutiny that the information/document(s) provided by the candidate is false/incorrect, his/her candidature shall be treated as cancelled even if he/she secured a Merit Rank and/or a seat has been allotted to the candidate. Hence, securing a Rank does not constitute a right/guarantee in favour of a candidate for his/her claim for admission if he/she fails to comply with the required criteria.</p>
<b>3.3</b>	<p><b>Special academic criteria</b> 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.</p> <p>For all other institutes and courses the criteria are given above in section 3.2 above.</p>
<b>3.3.1</b>	<p><b>Institute specific special eligibility criteria</b></p>
<b>3.3.1.1</b>	<p><b>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 from a recognised Council/ Board in regular class mode with <b>Mathematics, Physics and Chemistry</b> as compulsory subjects with at least 60% (55% for Reserve Category students e.g., SC, ST, OBC-A, OBC-B, PwD) marks in the above three subjects taken together, individual pass marks (both in theory &amp; practical wherever applicable) in each of the subjects and pass marks in English with a minimum of 30% in the said qualifying examination.</p> <p><b>B. Jute &amp; Fibre Technology</b></p> <p>The must pass '10+2' or equivalent examination from any recognised Council/ Board in regular class mode with <b>Physics, Mathematics and Chemistry/ Biotechnology/ Biology</b> as compulsory subjects with at</p>

	<p>least 60% (50% for Reserve Category students e.g., SC, ST, OBC-A, OBC-B, PwD) marks in the above three subjects taken together and with at least 30% marks in English.</p>
<p><b>3.3.1.2</b></p>	<p><b>Jadavpur University (Faculty of Engineering &amp; Technology)</b></p> <p><b>a) For Engineering/Technology and Pharmacy courses:</b></p> <p>Candidates must pass Higher Secondary (10+2) Examination in science stream in regular class mode of West Bengal Council of Higher Secondary Education or equivalent examination from a recognised Council/Board with:</p> <ol style="list-style-type: none"> <li>i. Individual pass mark in Physics, Chemistry and Mathematics as compulsory subjects.</li> <li>ii. Minimum of 60% marks in above subjects taken together (45% for SC, ST, OBC-A, OBC-B, PwD candidates) having 60% marks in Mathematics (45% for SC, ST, OBC-A, OBC-B, PwD candidates) as well as pass marks in English with a minimum mark 30% (for all category of candidates) in the said qualifying examination.</li> </ol> <p><b>b) For Architecture courses:</b></p> <p>Candidates must pass Higher Secondary (10+2) Examination in science stream in regular class mode of West Bengal Council of Higher Secondary Education or equivalent examination from a recognised Council/Board with:</p> <ol style="list-style-type: none"> <li>i. Minimum of 50% marks in Physics, Chemistry and Mathematics and 50% marks in aggregate of the (10+2) Examination (37% for SC, ST, OBC-A, OBC-B, PwD candidates)</li> <li>ii. Candidates must qualify either in NATA (National Aptitude Test in Architecture) conducted by the council of Architecture, New Delhi or in Paper – 2 of JEE -Main Examination) conducted by Central Board of Secondary Education. The Results of the above Examinations should be valid.</li> </ol>
<p><b>3.3.1.3</b></p>	<p><b>West Bengal University of Animal and Fishery Sciences</b></p> <p><b>B. Tech (Dairy Technology) course</b></p> <ol style="list-style-type: none"> <li>a) The candidate must pass the Higher Secondary (10+2) or its equivalent examinations with Physics, Chemistry, Mathematics and English as compulsory subjects with individual pass marks (in both theory and practical wherever applicable) in all the above four subjects in regular class mode.</li> <li>b) The candidate must obtain at least 50% marks (40% in case of candidates belonging to SC, ST, OBC-A, OBC-B, PwD) in above four subjects taken together.</li> </ol>

<p><b>3.3.1.4</b></p>	<p><b>Neotia University</b></p> <p><b>a) B. Tech course in Marine Engineering</b></p> <p>Pass '10+2' or equivalent Examination with Mathematics, Physics and Chemistry as compulsory subjects with at least 60% marks in all the above three subjects taken together and at least 50% marks in English.</p> <p><b>b) B. Pharma course</b></p> <p>Pass '10+2' or equivalent Examination with Mathematics, Physics and Chemistry/Biology as compulsory subjects with at least 60% marks in all the above three subjects taken together.</p> <p><b>C) B. Tech courses in other Engineering Branches</b></p> <p>Pass '10+2' or equivalent Examination with Physics and Mathematics along with any one of Chemistry/Biotechnology/Biology/Computer Science/Computer Application subject as compulsory subjects with at least 60% marks in all the above three subjects taken together.</p>
<p><b>3.3.1.5</b></p>	<p><b>Aliah University</b></p> <p>a) Candidate must have taken Mathematics, Physics and Chemistry having at least 100 Marks in total in each subject of the final examination (10+2)</p> <p>b) Candidate has to secure at least 60% overall in Physics, Chemistry and Mathematics taken together in 12<sup>th</sup> level with individual pass marks in all three subjects in regular class mode.</p>
<p><b>3.3.1.6</b></p>	<p><b>Sister Nivedita University</b></p> <p>a) For admission in Computer Science &amp; Engineering, Electronics &amp; Communication Engineering and Electrical Engineering, the criteria is as given in section 3.2.1</p> <p>b) For admission in Computer Science and Business Systems (TCS-Industry Integrated), the candidate must have obtained 60% average in Physics, Chemistry and Mathematics and also at least 60% in aggregate at 12<sup>th</sup> level</p>
<p><b>3.3.2</b></p>	<p><b>Course specific special eligibility criteria</b></p>
<p><b>3.3.2.1</b></p>	<p><b>The degree course in Marine Engineering</b></p> <p>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:</p> <p>a) 60% marks in Physics, Chemistry and Mathematics taken together with individual pass marks (both in theory and practical wherever applicable) in each of the said subjects.</p>



	<p>b) Minimum of 50% marks in English as subject in either in '10' standard or in '10+2' standard.</p> <p>c) <b>These requirements are applicable for the Marine Engineering Course in any of the participating Institution.</b></p>
<b>3.3.2.2</b>	<p><b>The Five-Year Degree Course in Architecture</b></p> <p>a) As per the norms and standards of the Council of Architecture (COA) No candidate shall be admitted to architecture course unless she/he has passed an examination at the end of the 10+2 scheme of examination with 50% marks in Physics, Chemistry and Mathematics and also 50% marks in aggregate of the 10+2 level examination.</p> <p>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.</p> <p>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></p>
<b>3.4</b>	<p><b>Requirements in terms of Residential/Domicile Criteria.</b></p> <p>a) The candidate must be a domicile of Home State i.e., West Bengal for admission in,</p> <ol style="list-style-type: none"> <li>i. Any seat including general category seats in any Government aided Engineering / Technology / Pharmacy Colleges.</li> <li>ii. Any seat including general category seats in Aliah University.</li> <li>iii. Any seat including general category seats in B. Tech. (Dairy Technology) in West Bengal University of Animal &amp; Fishery Sciences.</li> <li>iv. All reserved seats and 90% of General category seats in Jadavpur University.</li> <li>v. Any reserved category seat (SC, ST, OBC-A, OBC-B, PwD, TFW) in any institute.</li> </ol> <p>b) The candidate needs to download the required proforma as per the detail given in section 3.4.1 and keep the certificate ready to be produced during counseling, admission etc.</p>
<b>3.4.1</b>	<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 31.12.2020.</p>

OR

- b) whose parent(s) is/are permanent resident(s) of West Bengal having permanent address within the State of West Bengal.

In case of a) above, a certificate is to be obtained as per forma 'a1' or proforma 'a2'.

In case of b) above, a certificate is to be obtained in pro forma 'b' or the candidate must produce in original any two of Voter ID card/ Adhaar card/ Passport/ Ration card belonging to his/her parents. **The said documents must justify that the residential address of parent(s) is in West Bengal.**

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 has passed or appeared 10+2 level examination.

**During counselling etc. if SC/ST/OBC-A/OBC-B candidates cannot produce required domicile certificate, they can produce/upload their category certificates in lieu of domicile certificate. But in that case if the category certificate is rejected during verification, their domicile status is also converted to NON-West Bengal.**

### 3.4.2

#### Competent authority to issue domicile certificate

A. **Proforma 'a1' or 'b'** must be signed and certified by any of the following competent authorities from Central Government or State Government *having local jurisdiction over the place of the permanent residence of the concerned candidate or his/her parents viz.*

- a) District Magistrate, Additional District Magistrate, Deputy Magistrate, Deputy Collector, Sub – Divisional Officer, Block Development Officer.
- b) Superintendent of Police, Additional Superintendent of Police, Sub Divisional Police Officer, Deputy Superintendent of Police,
- c) Commissioner, Additional Commissioner, Joint Commissioner, Deputy Commissioner, Assistant Commissioner of Police Commissionerate.
- 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.
- e) Corporation Area - Commissioner, Additional Commissioner, Joint Commissioner, Assistant Commissioner.
- f) Assistant Secretary or above in the Secretariat to the Government of West Bengal (including GTA) or Central Government.
- g) Deputy Director or above in the Directorate to the Government of West Bengal or Central Government.

**B. Officials issuing domicile certificates MUST provide his/her full name, designation, place of posting with address, land line/mobile number. He/she should also provide his/her identity card number if**

	<p>available.</p> <p><b>C. 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.</b></p> <p><b>D. 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>	<p><b>Seat matrix.</b></p> <p>The seat matrix for last year i.e., for the academic session 2020-21 is given in Board's website.</p> <p>Seat matrix for the academic session 2021-22 will be declared by the office of The Director of Technical Education, Govt. of W.B. in due course of time and will be published at Board's web site before counselling.</p> <p>Note that there may be other seats available in some institute/course which are not offered through e-counselling and hence are not shown in the seat matrix.</p>
<b>5.0</b>	<b>Reservation of seats for students under Reserved Category</b>
<b>5.1</b>	<p>a) Reservation of Seats will be available for SC/ST/OBC-A/OBC-B/PwD/TFW category of candidates as per applicable rule depending upon the type of institute.</p> <p>b) Such reservation shall be restricted to candidates who are Indian citizen and domiciled in West Bengal.</p> <p>c) Candidates claiming such reservation must submit relevant Certificate issued from any of the competent Authorities as given below.</p> <p>d) The certificate is to be produced during counselling, admission etc. If the certificate is then found to be invalid, the candidate will lose the opportunity of admission in reserved category.</p> <p>e) OCI candidates will be eligible for only Unreserved seats in All India quota.</p>
<b>5.2</b>	<p><b>Competent Authorities for the issuance of SC/ST Certificate for candidates claiming under such reserve category of seats.</b></p> <p>SC/ST Certificates are to be issued by any of the following authorities:</p> <p>(i) Sub-Divisional Officers for all districts except Kolkata</p> <p>(ii) District Welfare Officer, Kolkata &amp; Ex-Officio Joint Director, B.C.W. in case of Kolkata Municipal Area (as defined in clause (9) of Section 2 of K.M.C Act, 1980</p>

5.3	<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>
5.4	<p><b>Reservation of seats for PwD candidates</b></p> <p>As per Section 2(t) of the RPwD Act, <b>“Persons with Disability (PwD)”</b> means a person with long term physical, mental, intellectual, or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society equally with others.</p> <p>According to Section 2(r) of the RPwD Act, 2016, <b>“persons with benchmark disabilities”</b> means a <b>person with not less than forty percent (40%) of a specified disability</b> where specified disability has not been defined in measurable terms and includes a person with disability where specified disability has been defined in measurable terms, as certified by the certifying authority.</p> <p>Accordingly, reservation in PwD seats will be available for the following types of disabilities, percentage of disability being not less than 40%.</p> <ol style="list-style-type: none"> <li>1. Locomotor disability as specified in the Schedule of RPwD Act, 2016</li> <li>2. Visual impairment as specified in the Schedule of RPwD Act, 2016</li> <li>3. Hearing impairment as specified in the Schedule of RPwD Act, 2016</li> <li>4. Speech &amp; language disability as specified in the Schedule of RPwD Act, 2016</li> <li>5. Intellectual disabilities as specified in the Schedule of RPwD Act, 2016</li> <li>6. Mental illness.</li> <li>7. Disabilities caused due to chronic neurological conditions and blood disorder.</li> <li>8. Multiple disabilities including deaf blindness.</li> </ol> <p>The “specified disabilities”, which are included in the Schedule of the RPwD Act, are given in APPENDIX-10.</p> <p>PwD certificates are to be issued by any of the authorities as given in the Order No. 289-HF/O/PHP/IR-05/2017 dated 29.08.2018 by the Government of West Bengal, Health &amp; Family Welfare Department (PHP Branch)</p>
5.5	<p><b>Special facilities to PwD candidates for appearing in the examination.</b></p>

- a) **Concessional application fees:** PwD candidates are eligible for 40% concession on application fees. To avail the same, the candidate must formally apply in writing (enclosing a copy of his/her confirmation page and PwD certificate) to the Chairman, WBJEEB and send/submit the application to the Board office within the last date of online application.
- b) **Compensatory time:** Twenty minutes per hour compensatory time as per duration of examination (On pro-rata basis) will be allowed to the PwD candidates with benchmark disabilities. The candidate must formally apply in writing (enclosing a copy of his/her confirmation page and PwD certificate) to the Chairman, WBJEEB and send/submit the application to the Board office within the last date of online application. **Special arrangement will be made in the office of the Board in Kolkata for such candidates to sit for the examination.**
- c) **Scribe/reader:** Facility of own Scribe/Reader will be allowed to a candidate with benchmark disability and has limitation in writing including that of speed if so desired by him/her. To avail this facility, the candidate must formally apply in writing (enclosing a certificate in the format as given in appendix-5 and a letter of undertaking in the format as given in appendix-6) to the Chairman, WBJEEB and send/submit the application to the Board office within the last date of online application. **Special arrangement will be made in the office of the Board in Kolkata for such candidates to sit for the examination.**
- d) The Board's decision in this regard will be final and binding on the candidate.

## 5.6 **Reservation of Seats for admission of the wards of Defense Personnel (Defense Quota Seats)**

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 WBJEE-2021.

Those seats are supernumerary in nature and separate allotment is done by the West Bengal Joint Entrance Examinations Board as per the following guidelines:

- A. For consideration under Defense Quota, intending candidates registered for the WBJEE-2021 will **have to apply** 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 - 2021 Admit Card.
- B. Based on the recommendation of the said Rajya Sainik Board, a separate list shall be published by the WBJEEB for subsequent offline counselling and allotment of seats inter-se merit basis. Securing a General Merit Rank (GMR) is mandatory for such category of seat.
- C. **Allotment of seats under Defense Quota is not through e-counseling.**
- D. Institution-wise and course-wise seats under Defense Quota for academic session 2020-21 is given in appendix-11. The list for academic session 2021-22 shall be published before counselling.

5.7	<p><b>Seats for admission through JEE (Main) 2021</b></p> <p>Seats are available for student's merit listed in <b>JEE (Main) 2021</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>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) 2021 merit listed candidates also.</p>
6.0	<p><b>Tuition Fee Waiver (TFW) Scheme</b></p>
6.1	<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</b>.</p> <p>b) The student must be <b>domiciled in West Bengal</b> and his/her total annual <b>Family Income from all sources</b> must be less than <b>Rs. 2.50 lakhs</b> (Rupees two lakhs and fifty thousand only).</p> <p>c) The <b>waiver</b> is limited to the Tuition Fee only. All other fees will have to be paid by the student.</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) Candidates claiming such seats must submit relevant Certificate issued by the competent authorities as enlisted below.</p> <ol style="list-style-type: none"> <li>i. An officer in the rank of Assistant Secretary or above in State or Central Govt.</li> <li>ii. District Magistrate</li> <li>iii. Additional District Magistrate</li> <li>iv. Sub-Divisional Officer</li> <li>v. Block Development Officer</li> </ol> <p><b>Note: 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.</b></p>
7.0	<p><b>Legal jurisdiction</b></p> <p>a) All matters pertaining to conduct of the examination and counselling</p>

	<p>shall fall within the jurisdiction of Kolkata only.</p> <p>b) The Board will not be a party pertaining to any dispute arising in the process of admission</p>
<b>8.0</b>	<b>Procedure for submission of application form, payment of examination fees.</b>
<b>8.1</b>	<p><b>Registration</b></p> <p>a) The candidate will enter personal details such as, name, father's name, mother's name, date of birth, gender, identification type and number, present and permanent address, mobile number, email ID etc.</p> <p>b) <b>Candidates must be careful while entering name, father's name, mother's name, date of birth, gender and domicile. This information cannot be changed/edited/modified under any circumstances.</b></p> <p>c) Then the candidate has to create password, choose security question/ answer, review and submit the registration.</p> <p>d) An application number will be generated and will appear on the screen. Also, SMS/email will be sent to the candidate.</p> <p>e) Candidate must remember his/her application number, password and security question/answer. If the candidate forgets the password, he/she has to recover it through "Forgot Password" option. <b>There is no other way to recover the password.</b></p> <p>f) 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. <b>The Board will not be responsible for any change resulting from sharing/ divulging of the password.</b></p>
<b>8.2</b>	<p><b>Application</b></p> <p>a) At this stage, the candidate needs to fill up various other information such as, domicile, category, PwD status, family income status, religion, nationality, academic details etc.</p> <p>b) If the candidate has also applied for JEE(Main) 2021 he/she need to enter JEE(Main) application number.</p> <p>c) Thereafter the candidate needs to choose any three zones of examinations in order of his/her choice and submit the application.</p>
<b>8.3</b>	<p><b>Uploading of images</b></p> <p>a) The candidate is required to upload JPG/JPEG images of his/her recent colour photograph (10 to 200kB) and signature (4 to 30 kB).</p> <p>b) If any document e.g., certificate/marksheet etc. is to be uploaded, it must be in PDF format (50 to 300kB)</p> <p>c) All documents are to be uploaded in one go.</p>

<b>8.4</b>	<b>Payment of Examination Fees</b> a) The Examination Fees can be paid by Net Banking/ Debit Card/ Credit Card only. b) Application fee for the examination is <b>Rs 500 (Rupees five hundred only) for General candidates and Rs 400 (Rupees four hundred only) for SC/ST/OBC-A/OBC-B candidates, plus the Bank's service charges</b> as applicable. c) SC/ST/OBC-A/OBC-B/TFW candidates availing of the concession will have to upload respective certificates in given formats at the time of counselling, failing which his/her candidature will be cancelled. d) <b>The fee once paid is not refundable under any circumstances.</b>
<b>8.5</b>	<b>Confirmation Page</b> On successful completion of all the above steps, candidate shall be directed to download the 'Confirmation Page' which means that the application is <b>complete</b> . APPLICATION IS <b>NOT COMPLETE</b> UNTIL THE CONFIRMATION PAGE IS GENERATED. The confirmation page contains information as given by the candidate. Also, the same information will be repeated in the admit card and the rank card. As such, the Board is in no way responsible for any mistake in it due to incorrect entry given by the candidate. Candidate should take a Print-out of the Confirmation Page and should preserve the same carefully. <b>The confirmation page cannot be regenerated after completion of the declared e-counselling and admission process conducted by the Board. Hence it is the responsibility of the candidate to preserve it safely.</b> If any candidate loses his/her confirmation page, a duplicate can be provided by the Board, but only till 60 days after the date of declaration of result. In order to get a duplicate confirmation page, the candidate must apply to the Board and pay a processing fee of Rs. 500/- by a bank draft in the name of "West Bengal Joint Entrance Examinations Board" payable in Kolkata.
<b>8.6</b>	<b>Correction of application form</b> a) It is not possible to correct any primary registration data i.e., <b>Name, Father's Name, Mother's name, gender, domicile and Date of birth.</b> b) If any candidate intends to correct any other information in his/her application, he/she can do so after logging in during the given <b>correction period. The Board cannot entertain any request for any correction under any circumstances beyond the correction period.</b> c) <b>Also, the Board will not make any correction on behalf of any candidate.</b>



d) Confirmation page, admit card, rank card etc. will be issued with the personal detail as is given by the candidate. In case of any problem to the candidate during admission or thereafter due to any mistake committed by him/her, **the Board is not able to render any help e.g., issuing any letter of correction.** The candidate must take corrective actions at his/her end with the institute, where he/she takes admission.

**9.0****Admit Card**

- a) Admit cards will be generated on the notified date for the student to download and take a print. Candidate must carry a printed hard copy of the admit card to the examination centre.
- 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 the examination.**
- c) If a candidate needs a duplicate admit card after the examination, the same can be provided by the Board, but only till 60 days after the date of declaration of result. In order to get a duplicate, the candidate must apply to the Board and pay a processing fee of Rs. 500/- by a bank draft in the name of “West Bengal Joint Entrance Examinations Board” payable in Kolkata.

**10.0****Allocation of examination centre.**

Allocation of examination centre will be based on the choices given by the candidate during online application. However, **discretion of the Board in allocation of examination centre shall be final.** No request for change of allocated centre will be entertained under any circumstances. List of district-wise examination zones is given in **APPENDIX-9.**

- a) Candidates from West Bengal, Assam and Tripura must select any three zones in order of preference.**
- b) Candidates from other states must select any three zones from the following.**

Districts of W B.	Zone
Howrah	Salkia/Bally/Uttarpara
Kolkata	Salt Lake/New Town (Salt Lake/Lake Town/New Town/Rajar Hat)
Kolkata	South Kolkata (Ballygaunge/Minto Park/Bhowanipore/Tollygaunge/Jadavpur)
Kolkata	West Kolkata (Joka/Behala/Alipore/Chetla/Khidirpore/Budge Budge)
Paschim Burdwan	Asansol
Paschim Burdwan	Durgapur

**Any examination zone may be dropped if adequate numbers of candidates are not available or under any unavoidable circumstance. In such case the candidate will be allocated alternative examination zone.**

#### **11.0 Evaluation and declaration of result**

- a) The **Model Answer Keys** will be published for a brief period in [www.wbjeeb.nic.in](http://www.wbjeeb.nic.in) shortly after the examination. For this purpose, candidates are advised to regularly follow the web site after the examination.
- b) Any candidate can challenge any model answer key by logging in with his/her password.
- c) Challenges of the model answer keys will be accepted online through the link to be given for the purpose in [www.wbjeeb.nic.in](http://www.wbjeeb.nic.in) on payment of **₹500 per question** plus the bank's service charges. The amount is payable by net banking/debit card/ credit card. The fee once paid is **non-refundable**.
- d) The Board will review the challenges and publish Final and Frozen Answer Keys. **The Board's decision in this regard will be final and no further communication will be entertained.**
- e) Images of OMRs and machine read responses will be uploaded for a brief period in [www.wbjeeb.nic.in](http://www.wbjeeb.nic.in) two weeks (tentatively) after the examination.
- f) Any candidate can view the images of his/her OMRs and machine read responses by logging in with his/her password.
- g) The candidates, who are not satisfied with the captured responses can challenge online through the link to be given for the purpose in [www.wbjeeb.nic.in](http://www.wbjeeb.nic.in) on payment of **₹500 per question** plus bank's service charges. The amount is payable by net banking/debit card/ credit card. The fee once paid is **non-refundable**.
- h) The Board will review the challenges and take final decision. **The Board's decision on the challenges will be final and no further communication will be entertained.**
- i) Challenges by letter, fax, telephone etc. other than through online mode will not be accepted or entertained.
- j) Candidates may download and preserve images of their OMRs. Such documents will not be available online after publication of result. If any candidate fails to download his/her documents in time and requires any of them after publication of result, he/she will have to apply to the Board with a demand draft of Rs. 500/- in favour of 'West Bengal Joint Entrance Examinations Board' payable at Kolkata for each document. But this facility will be available only till 60 days after the date of declaration of result.

- k) A candidate can calculate his/her score from his/her machine read response and published answer keys. However, if any candidate needs a calculation sheet from the Board, he/she will have to apply to the Board with a demand draft of Rs. 500/- in favour of 'West Bengal Joint Entrance Examinations Board' payable at Kolkata. But this facility will be available only till 60 days after the date of declaration of result.
- l) Result will be published in the form of Rank Card, which will contain all relevant ranks, total score and component scores in paper-I (Mathematics) and paper-II (physics & Chemistry). The Board never publishes rank list.
- m) Candidates can view and download their rank card by logging in with their password.
- n) Duplicate rank cards cannot be generated at any later stage after completion of counselling and admission conducted by the Board. Hence candidates are advised to retain their rank cards carefully in a secured place for all future purpose.
- o) If a candidate needs a duplicate rank card even after completion of counselling and admission conducted by the Board, the same can be provided, but only till 60 days after the date of declaration of result.
- p) In order to get a duplicate rank card, the candidate must apply to the Board and pay a processing fee of Rs. 500/- by a bank draft in the name of "West Bengal Joint Entrance Examinations Board" payable in Kolkata
- q) Ranks cards with scores will be issued to all candidates, who appeared in WBJEE-2021. But all **may not be awarded a rank and hence may not be eligible for counseling**, for which a cut off rank and/or a cut off score will be decided by the board.

**12.0****Counselling/seat allotment and admission**

- a) A separate notification with details of counseling/seat allotment and admission will be published in **www.wbjeeb.nic.in** and **www.wbjeeb.in** shortly after publication of result.
- b) Course-wise and institute wise availability of seats as to be provided by the Competent Authorities will also be published before counseling and allotment.

## APPENDIX -1

**PROFORMA a1**

**Residential/Domicile Certificate for candidates residing in the State of West Bengal continuously for at least last ten (10) years as on 31.12.2020.**

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 31-12-2020.

Paste 4 cmx3 cm  
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 31.12.2020.**

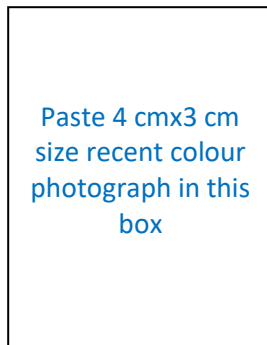
Certified that \_\_\_\_\_ son / daughter of \_\_\_\_\_ has passed the '10+2' Examination in the year \_\_\_\_\_ / will appear in the Final '10+2' Examination in 2021 from this Institution.

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 31-12-2020.



**(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 cmx3 cm size recent colour photograph of the candidate in this box

Paste 4 cmx3 cm 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  
 \_\_\_\_\_ GUARDIAN \_\_\_\_\_, guardian of \_\_\_\_\_ CANDIDATE \_\_\_\_\_  
 residing at \_\_\_\_\_ Post Office \_\_\_\_\_  
 Police Station \_\_\_\_\_ in the district of \_\_\_\_\_  
 in the state of West Bengal for the year 2020-2021 is less than Rs. 2.50 lakhs (Rupees two lakhs  
 and fifty thousand only) and stands at Rs. \_\_\_\_\_ (Rupees  
 \_\_\_\_\_).

Paste 4 cmx3 cm  
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.*

## APPENDIX-5

**Certificate regarding physical limitation to write in an examination.**

Certificate No. .... Dated .....

This is to certify that Mr./Ms. ....

Son/daughter of Mr. Ms. ....

Residing at .....

.....

Having WBJEE-2021 application No. .... has the following disability  
(name of the Specified Disability)..... In percentage of  
.....(in words) .....(in figures).

Please tick the specified disability (Assessment may be done on the basis of Gazette of India, Extraordinary, Part-II, Section-3, Subsection (ii)) Ministry of Social Justice and Empowerment)

Paste 4 cmx3  
cm size recent  
colour  
photograph of  
the candidate  
in this box.

S. No.	Category	Type of Disability	Specified Disability
1	Physical Disability	Locomotor Disability	a) Leprosy cured person, b) Cerebral palsy, c) Dwarfism, d) Muscular dystrophy, e) Acid attack victims
		Visual Impairment	a) Blindness, b) Low vision
		Hearing Impairment	a) Deaf, b) Hard of hearing
		Speech & Language Disability	a) Permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes
2	Intellectual Disability		a) Specific learning Disability (Perceptual Disabilities, Dyslexia, Dyscalculia, Dyspraxia & Development Aphasia) b) Autism spectrum disorder
3	Mental Behaviour		a) Mental illness
4	Disability caused due to	i. Chronic Neurological Conditions	a) Multiple sclerosis b) Parkinsonism
		ii. Blood disorder	a) Haemophilia, b) Thalassemia, c) Sickle cell disease
5	Multiple Disabilities		a) More than one of the above specified disabilities including deaf blindness

This is to further certify that he /she has physical limitation which hampers his/her writing capabilities to write the examination owing to his/her disability.

Signature

Name

Chief Medical Officer/ Civil Surgeon/Medical Superintendent

Govt. Health Care Institution with seal



**APPENDIX-6**

**Letter of Undertaking for Using Own Scribe**

I....., a candidate with.....  
(name of the disability) appearing for the .....  
(name of the examination) bearing Application No. .... do hereby state  
that ..... (name of the scribe) will provide  
the service of scribe/reader for the undersigned for taking the aforesaid examination.

I do hereby undertake that his qualification is .....

Signature of the candidate

Name of the scribe: .....

ID of the scribe: .....

ID number: .....

Paste 4 cmx3  
cm size recent  
colour  
photograph of  
the scribe in  
this box.

**Syllabus for WBJEE-2021****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 in terms of ordered pair of real numbers and properties of complex numbers; Complex conjugate; Triangle inequality; amplitude of complex numbers and its properties; 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.

Polynomial equation: nth degree equation has exactly n roots (statement only); 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 co-ordinates, transformation from Cartesian to polar coordinates and vice versa. Parallel transformation of axes.

Concept of locus, locus problems involving all geometrical configurations,

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. Angle bisector

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, domain and range set of functions, composition of two functions and inverse of a function, limit, continuity, derivative, chain rule and derivative of functions in various forms. Concept of differential.

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 xrays.

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<sup>2</sup>, sp<sup>3</sup> and dsp<sup>2</sup>. 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. Dalton's Law of partial pressure, Graham's 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 ( $E^\ominus$ ), Electrochemical series, feasibility of a redox reaction. Significance of Gibb's equation:  $\Delta G^\ominus = -nFE^\ominus$  (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, allotopes, 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  $K_2Cr_2O_7$  and  $KMnO_4$ .

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  $HNO_2$ ; 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  $NO_2$ , 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:  $Cl^-$ ,  $S_2^{2-}$ ,  $SO_4^{2-}$ ,  $NO_3^-$ ,  $CO_3^{2-}$ . Basic Radicals:  $Cu^{2+}$ ,  $Al^{3+}$ ,  $Fe^{3+}$ ,  $Fe^{2+}$ ,  $Zn^{2+}$ ,  $Ca^{2+}$ ,  $Mg^{2+}$ ,  $Na^+$ ,  $NH_4^+$ .

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 are advised to enter the examination centres at least 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 and as is mentioned in the admit card.  
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.
4. Carry the following documents to enter the examination centre.
  - a. A printed copy of admit card of WBJEE-2021.
  - b. A copy of colour photograph as was uploaded during online application.
  - c. Any photo identity card in original such as Aadhaar card/ Pan card / Passport/ voter card/ 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 circumstance.**
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 well before commencement of the test. Take out the OMR sheet without breaking seals of the question booklet and check that your OMR number & question booklet number are same. If not, ask the invigilator to replace the whole set from same series.
10. Put your signature on the top of question booklet.
11. Read the instructions given on OMR & on the cover page of question booklet very carefully.
12. Write question booklet number & roll number at the appropriate places on the OMR. Wrong entry of question booklet number & roll number may lead to rejection of the OMR or wrong scoring, for which the Board will not remain responsible. If any candidate makes any mistake, he/she must **not** overwrite. Request the invigilator to strike it out & rewrite the correct numbers and put his/her signature.
13. Darken appropriate bubbles of question booklet number & Roll number.

14. 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.
15. Check that your Roll number, photograph, spelling of your name in the attendance sheet matches with those given in your admit card. If any correction is needed, bring it to the notice of the invigilator.
16. Question booklet seals can be opened only at the time of commencement of test and as will be announced 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.
17. 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 of time as is deemed fit by the Centre- in- Charge.
18. No discussion will be allowed with the invigilator regarding any question.
19. Candidates may do rough work in the space provided in the question booklet.
20. No candidate will leave his/her seat without permission of the invigilator until the test is over.
21. No candidate will leave the hall till the end of the test & all OMRs are collected & tallied by the invigilator.
22. Candidates can take his/her question booklet after the test.
23. If any Examinee is found impersonating, he/she will be **handed over to the police** & candidature of the original candidate will be cancelled outright.
24. Candidates must follow social distancing and other COVID-19 instructions as applicable.

## APPENDIX –9

**District-wise list of examination zones for WBJEE-2021**

Districts of W B.	Zone	Zone code
Alipurduar	Alipurduar	671
Bankura	Bankura	681
Bankura	Bishnupur	682
Birbhum	Bolpur	691
Birbhum	Suri	692
Cooch Behar	Cooch Behar	721
Dakshin Dinajpur	Balurghat	741
Darjeeling	Kurseong	731
Darjeeling	Siliguri	732
Hooghly	Arambagh	761
Hooghly	Bandel/Chinsurah	762
Hooghly	Serampore	763
Howrah	Salkia/Bally/Uttarpara	771
Howrah	Howrah Maidan/Shibpur	772
Howrah	Santragachi/Domjur	773
Howrah	Uluberia	774
Jalpaiguri	Jalpaiguri	781
Jhargram	Jhargram	791
Kalimpong	Kalimpong	801
Kolkata	Central Kolkata (Moulali/Beliaghata/Narkel Danga/Phool Bagan/Kakurgachi/Park Circus)	811
Kolkata	North Kolkata (Shyam bazar/ Bagh Bazar/Girish Park/Burra Bazar/ College Street/Sealdah)	812
Kolkata	Salt Lake/New Town (Salt Lake/Lake Town/New Town/Rajar Hat)	813
Kolkata	South Kolkata (Ballygaunge/Minto Park/Bhowanipore/Tollygaunge/Jadavpur)	814
Kolkata	West Kolkata (Joka/Behala/Alipore/Chetla/Khidirpore/Budge Budge)	815
Malda	Malda	821
Murshidabad	Berhampur	851
Murshidabad	Jiaganj	852
Murshidabad	Raghunathganj	853
Nadia	Kalyani	861
Nadia	Krishnanagar	862
Nadia	Nabadwip	863
North 24 Parganas	Ashoknagar	881

North 24 Parganas	Barasat (Airport/Madhyamgram/Barasat)	882
North 24 Parganas	Barrackpur (Dum Dum Jn. To Barrackpur)	883
North 24 Parganas	Basirhat	884
Paschim Burdwan	Asansol	701
Paschim Burdwan	Durgapur	702
Paschim Medinipur	Garbeta	831
Paschim Medinipur	Kharagpur	832
Paschim Medinipur	Medinipur	833
Purba Burdwan	Burdwan	711
Purba Medinipur	Contai	841
Purba Medinipur	Haldia	842
Purba Medinipur	Tamluk	843
Purulia	Purulia	871
South 24 Parganas	Jainagar	892
South 24 Parganas	Garia/Sonarapur/Baruipur	893
Uttar Dinajpur	Raiganj	751
<b>Other States</b>		
Assam	Silchar	900
Tripura	Agartala	910

a) Candidates from West Bengal, Assam and Tripura must select any three zones from the above list in order of their preference.

b) Candidates from other states must select any three zones from the following.

Districts of W B.	Zone
Howrah	Salkia/Bally/Uttarpara
Kolkata	Salt Lake/New Town (Salt Lake/Lake Town/New Town/Rajar Hat)
Kolkata	South Kolkata (Ballygaunge/Minto Park/Bhowanipore/Tollygaunge/Jadavpur)
Kolkata	West Kolkata (Joka/Behala/Alipore/Chetla/Khidirpore/Budge Budge)
Paschim Burdwan	Asansol
Paschim Burdwan	Durgapur

WBJEEB attempts to allocate the examination centre at the candidate's 1<sup>st</sup> choice. But it may not be possible in all cases. **Discretion of the Board shall be final in this regard. No request for change of allocated centre will be entertained under any circumstances.** Also, any examination zone may be dropped in unavoidable circumstances.

The “specified disabilities”, which are included in the Schedule of the RPwD Act, are as follows:

<b>S. No.</b>	<b>Category</b>	<b>Type of Disability</b>	<b>Specified Disability</b>
1	Physical Disability	Locomotor Disability	a) Leprosy cured person, b) Cerebral palsy, c) Dwarfism, d) Muscular dystrophy, e) Acid attack victims
		Visual Impairment	a) Blindness, b) Low vision
		Hearing Impairment	a) Deaf, b) Hard of hearing
		Speech & Language Disability	a) Permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes
2	Intellectual Disability		a) Specific learning Disability (Perceptual Disabilities, Dyslexia, Dyscalculia, Dyspraxia & Development Aphasia) b) Autism spectrum disorder
3	Mental Behaviour		a) Mental illness
4	Disability caused due to	i. Chronic Neurological Conditions	a) Multiple sclerosis b) Parkinsonism
		ii. Blood disorder	a) Haemophilia, b) Thalassemia, c) Sickle cell disease
5	Multiple Disabilities		a) More than one of the above specified disabilities including deaf blindness

## Appendix-11

Institution-wise and course-wise seats under **Defence Quota** for academic session 2020-21 is given below. The list for academic session 2021-22 shall be published before counselling.

Sl.No.	Name of the Institution	Name of the available course(s)	No. of seats
1.	Jadavpur University	To be decided by the University Authority	2
2.	Jalpaiguri Government Engineering College, Jalpaiguri	1. Mechanical Engineering	1
		2. Information Tech.	1
3.	Kalyani Government Engineering College, Kalyani, Nadia	Electrical Engineering	1
4.	Ramkrishna Mahato Government Engineering College, Purulia	1. Comp. Sc. & Engineering	1
		2. Electronics & Communication Engineering	1
5.	Cooch Behar Government Engineering College, Cooch Behar	1. Comp. Sc. & Engineering	1
		2. Electronics & Communication Engineering	1
6.	Government College of Engineering and Leather Technology, Kolkata	Leather Technology	1
7.	Govt. College of Engineering & Ceramic Technology, Kolkata	Information Tech.	1
8.	Govt. College of Engineering & Textile Technology, Serampore	Information Tech.	1
9.	Govt. College of Engineering & Textile Technology, Berhampore	Comp. Sc. & Engg.	1