

## C O N T E N T S

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## 1. INTRODUCTION :

The West Bengal Joint Entrance Examinations Board was formed as 'West Bengal Board of Examination for Admission to Engineering Degree Colleges' in the year 1962, born out of a concept of holding a common admission test for the Engineering Colleges of the State of West Bengal. The basic purpose was to select candidates to be considered for admission to the State Engineering Colleges on the basis of the results of a single competitive examination, which would also lead to saving of time, energy and expenditure on the part of the candidates in appearing at number of entrance tests.

Since inception, the Office of the Board had been functioning at 'Slater Hall' in the campus of the Bengal Engineering and Science University, Shibpur (erstwhile known as "Bengal Engineering College, Shibpur") till January 2008.

At present, (with effect from 2008-09) the Board has been functioning at **AQ-13/1, Sector – V, Salt Lake, Kolkata-700 091.**

**At present, the Board conducts six entrance examinations as stated below :**

	<b>Exams.</b>	<b>Scope of admission</b>
<b>1</b>	<b>'JEM'</b>	For admission to degree level Engineering & Technology courses including Dairy Technology / Pharmaceutical Technology / Agricultural Engineering, etc. as well as Medical, Dental, etc. courses in different Universities / University Departments / Government Colleges as well as Self Financing Colleges of the State of West Bengal.
<b>2</b>	<b>'EVET'</b>	For admission to degree level course in VETERINARY SC. & ANIMAL HUSBANDRY
<b>3</b>	<b>'JECA'</b>	For admission to Post Graduate level Master of Computer Application (MCA) course conducted in different Engineering & Technology Colleges as well as in different Universities/University Department of the State of West Bengal.
<b>4</b>	<b>'JELET'</b>	For direct admission to 2 <sup>nd</sup> Year (3 <sup>rd</sup> Semester Level) of 4 years degree level Engineering & Technology / Pharmacy courses of the diploma holders in Engineering & Technology / Pharmacy and B.Sc. degree holders with mathematics as one of the subjects in the graduation level.
<b>5</b>	<b>'JENPARH'</b>	For admission to degree level courses of Ayurvedacharya, Homoeopathy, Unani, Nursing (H) and Physiotherapy.
<b>6</b>	<b>'JEHOM'</b>	For admission to degree level Hotel Management & Catering Technology courses in AICTE approved self financing Hotel Management Institutions of the State of West Bengal.

## 2. Scheme of Examination "JEM - 2010" :

It is the Entrance Test for admission to different degree level Engineering & Technology/ Dairy Technology/ Pharmacy/ Agricultural Engineering, etc as well as degree level Medical / Dental courses in Universities / University Departments / Government colleges as well as Self Financing Colleges of the State of West Bengal.

2.1 The Examination “JEM-2010” will consist of 4 (Four) papers: i) Mathematics (100 marks), ii) Physics (50 marks) & Chemistry (50 marks) and iii) Biological Sciences (100 marks).

There are three different options for a student while appearing in the Joint Entrance Examination (JEM-2010) as stated below:

Options	Availability of Courses for admission through ‘JEM-2010’	Subject required to appear in (JEM -2010)	Type of form to be applied
1	Engineering & Technology / B.Arch./ Dairy Technology / Agricultural Engineering / Pharmacy	Mathematics, Physics & Chemistry	‘E’
2	Medical / Dental/ Pharmacy	Biological Science, Physics & Chemistry	‘M’
3	Engineering & Technology / B.Arch. / Dairy Technology / Agricultural Engineering / Pharmacy / Medical / Dental	Mathematics, Physics, Chemistry and Biological Sciences	‘C’

## 2.2 The Question Pattern for each subject :

There will be Multiple Choice Questions (MCQ-type, with four options including single correct answer) carrying 80% weightage of the total marks and remaining 20% will be of short answer type. **In MCQ type, for each incorrect response, 33.33% of mark would be deducted** and more than one answer indicated against one question will be treated as incorrect response/answer. All questions will have to be answered on specially designed machine gradable answer sheets (OMR answer sheet). **Answers are to be marked using blue/black ball point pen only** on the ‘OMR answer sheet’ and answer to the ‘short questions’ are to be written in blue/black ball point pen on the answer sheet provided for the purpose.

**N.B. It is to be noted carefully that the candidates must write the MCQ type “Question Booklet No” at the indicated places on both the OMR Answer Sheet and Attendance Sheet during examination. Special care should also be taken regarding answering short answer type question in the subject Physics and Chemistry in the specified answer booklet supplied to the candidate for the purpose (i.e. answer to the short answer type questions in the subject Physics to be given in the answer booklet meant for Physics and vice versa).**

## 2.3 Rules for Tie breaking :

In case of two or more candidates obtaining equal marks, inter-se merit of such candidates shall be determined in compliance with the following rules.

### For Engineering ranking :

- a) by total negative marks obtained by the candidates in the subjects Mathematics, Physics and Chemistry. Candidate obtaining lesser total negative marks shall be given preference.
- b) and then candidate securing lesser negative marks in Mathematics shall be given preference.
- c) and then candidate securing lesser negative marks in Physics shall be given preference.
- d) and then by age (preference to older candidate).

### For Medical ranking :

- a) by total negative marks obtained by the candidates in the subjects Physics & Chemistry and Biological Sciences. Candidate obtaining lesser total negative marks shall be given preference.
- b) and then candidate securing lesser negative marks in Biological Sciences shall be given preference.
- c) and then candidate securing lesser negative marks in Chemistry shall be given preference.
- d) and then by age (preference to older candidate).

### 2.4 Schedule of Examination “JEM - 2010” :

Date of Examination	9.30 a.m. to 11.30 a.m.	12.30 p.m. to 2.30 p.m.	3.30 p.m. to 5.30 p.m.
18.04.2010 (Sunday)	Mathematics (100 marks)	Physics (50 marks) & Chemistry (50 marks)	Biological Sciences (100 marks)

**N.B. No further examination shall be held under any circumstances for those who will be unable to appear in WBJEE on the scheduled date of the examination.**

### 3. Eligibility criteria for candidates :

3.1 **Applicant must be a citizen of India.**

3.2 **Age Restriction :**

Candidates must be **17 (seventeen)** years of age or above as on **31.12.2010**. There is no upper age limit except for the **Marine Engineering Course** for which the upper age limit is **25 years** as on **31.07.2010**.

3.3 **Residential requirements and certificates from Competent Authorities :**

*Candidates desirous of seeking admission to Government Engineering/Technology Colleges, Govt. Medical and Dental Colleges as well as to Private Medical and Dental Colleges, must have been residing in the State of West Bengal continuously at least for last 10 (ten) years as on 31.12.2009.*

**OR**

*Their parents must be permanent resident of West Bengal having their permanent home address in the State of West Bengal.*

Certificate of residence in this respect shall have to be produced in the proforma as printed in the Application Form for JEM-2010 from any of the **Competent Authorities** as given below. The proforma of residential certificate as printed in the form is required to be filled in properly (either ‘A’ or ‘B’ as applicable).

The Residential Certificate as applicable (**A or B**) should be obtained from any of the following competent authorities [i) District Magistrate; ii) Additional District Magistrate; iii) Deputy Magistrate; iv) Deputy Collector; v) Sub-Divisional Officer; vi) Block Development Officer; vii) Superintendent of Police or Additional Supdt. of Police; viii) Chief or Additional Chief Metropolitan Magistrate; ix) Director of Scheduled Caste and Tribe Welfare; x) Commissioner, Additional Commissioner, Joint Commissioner, Deputy Commissioner of Kolkata Police; xi) Deputy Secretary or above to the Government of West Bengal; xii) Heads of the Institutions (located in West Bengal) where the applicants are presently studying or last studied; xiii) Members of Parliament in West Bengal; xiv) Members of West Bengal Legislative Assembly; xv) Sabhapati - Panchayat Samity; xvi) Mayor-in-Council-Municipal Corporation; xvii) Municipal Commissioner and Chairman Borough Committee; xviii) Councillor, Municipal Corporation] in whose jurisdiction the candidates reside.

### 3.4 Academic requirements :

#### 3.4(a) For Engineering & Technology courses :

**For all the Courses except B. Arch., Marine Engineering and B. Pharmacy :** General candidates must pass H.S. (10+2) or it's equivalent examination with a minimum of 50% marks in Physics, Chemistry and Mathematics taken together (40% for SC/ST candidates) and with at least 30% marks in English (for all category of candidates) with individual pass marks in Physics, Chemistry, Mathematics, English and Vernacular (or any other fifth subject).

**For Marine Engineering Course :** The minimum percentage of marks is 60 % in place of 50% in Physics, Chemistry and Mathematics taken together in '10+2' level with at least 50% marks in English either in 10<sup>th</sup> or in 12<sup>th</sup> Standard and with individual pass marks in Physics, Chemistry, Mathematics, English and Vernacular (or any other fifth subject) for all category of candidates.

**For B. Pharm. Course :** General candidates must pass H.S.(10+2) or it's equivalent examination with a minimum of 50% marks in Physics, Chemistry and Mathematics/Biology taken together (40% for SC/ST candidates) and with at least 30% marks in English and having individual pass marks in Physics, Chemistry, Mathematics/Biology, English and Vernacular (or any other fifth subject) for all category of candidates. It should be noted that for admission to B.Pharm. course in **Jadavpur University**, general candidates must pass the H.S.(10+2) or equivalent examination with a minimum of 50% marks in Physics, Chemistry and Mathematics only taken together and with at least 30% marks in English and having individual pass marks in Physics, Chemistry, Mathematics, English and Vernacular (or any other fifth subject). For SC/ST candidates, the minimum marks is 40% in Physics, Chemistry & Mathematics only taken together.

**For B. Arch course :** A candidate, besides satisfying the eligibility criteria as stated in 3.4(a), Para-1, must have to qualify in the **NATA (National Aptitude Test in Architecture)** conducted by the **Council of Architecture, New Delhi** and necessary document in this regard is to be produced at the time of Counselling.

### 3.4(b) For Medical and Dental courses :

General Candidates must pass H.S. (10+2) Examination of West Bengal Council of Higher Secondary Education or equivalent examination recognized by the West Bengal University of Health Sciences with individual pass marks in Physics, Chemistry, Biology, English and Vernacular (or any other fifth subject) along with a minimum of 50% marks in Physics, Chemistry and Biology taken together in the said qualifying examination (10+2). In addition, candidates must have to secure at least 50% marks in Physics, Chemistry and Biological Sciences taken together in the Joint Entrance Examination, West Bengal.

In respect of SC/ST candidates, the aforesaid marks will be 40% instead of 50% in the qualifying examination (10+2) as well as in the Joint Entrance Examination.

**4.0 Syllabus of Examination “JEM-2010” :** The -syllabus for JEM-2010 has been given in **APPENDIX-I**.

### 5.0 Application Procedure :

**5.1 a) Availability of Application Form :** The **application kit** (i.e., prescribed printed application form along with Information Brochure and posting window envelop) will be available from the different Branches of **United Bank of India** (as specified in the advertisement) on payment of **Rs. 500/-** (for E & M type Form) and **Rs.600/-** for C type Form in cash **from 18.11.2009 to 31.12.2009**. The application form once purchased cannot be returned or replaced.

b) The **application kit** may also be obtained by post from the Board on application with an additional fee of Rs.100/- (Rupees one hundred only). The total amount (i.e. cost of application form plus 100/-) has to be paid through Demand Draft drawn in favour of “West Bengal Joint Entrance Examinations Board” payable at Kolkata/Howrah.

Last date for request for Application Kit by post is **8.12.2009**.

The Board shall not be responsible for non-receipt of request for Application Form within stipulated date by post due to postal delay.

c) The Application Kit can also be obtained only from the office of the Board at AQ-13/1, Sector – V, Salt Lake, Kolkata-700 091 with payment of the actual cost of the Form and late fee of Rs.200/- (Rupees two hundred only) through a Bank Draft to be drawn in favour of “West Bengal Joint Entrance Examinations Board” payable at Kolkata/Howrah for the period from **01.01.2010 to 07.01.2010**.

**5.2 Guidelines for filling in the Application Form :** The guidelines for filling in the Application Form has been provided in **APPENDIX-II**.

**5.3 Submission of Application Form :** The duly filled in Application Form must be sent in the printed window envelop provided in the “Application Kit” through **Speed Post only** to the **Member Secretary, West Bengal Joint Entrance Examinations Board, AQ-13/1, Sector-V, Salt Lake, Kolkata-700 091**. Before sending the Application Form the candidate must ensure that the Bar Code printed on the right hand top portion of the Application Form (side-1) is clearly visible from the window.

The last date for receipt of completed Application Form by Speed Post only is **12.01.2010**.

Candidates must enclose the Bank slip marked “**Board Copy**” along with the application form. The Bank slip marked “**candidate copy**” must be retained by the candidate.

*No application form will be received by hand or through courier/other agencies.*

Last Date for receipt of Application Forms : 12th January,2010. Forms received after the last date will not be processed.

#### 5.4. Intimation regarding receipt of Application form by the Board in the websites :

The candidate is required to *put/log/enter the Application Form Number* in the specified space through the following websites for having intimation regarding receipt of his/her application form by the Board.

- a) [www.wbjeeb.in](http://www.wbjeeb.in)
- b) [www.banglarmukh.com](http://www.banglarmukh.com)
- c) [www.csc-et.in](http://www.csc-et.in)

The **application from nos.** of the received application forms **will be displayed** in the websites.

6. **Issue of Admit Card :** After receipt of Application Form by the Board, an Admit Card will be sent to the applicant indicating his/her Examination Centre of the Joint Entrance Examination by Speed Post. However, the Board will not be responsible for any consequences that may arise due to loss of Admit Card in transit. **The Form Number will serve as the Enrolment Number.**

*In case the applicant does not receive the Admit Card by **April 3, 2010**, he/she should contact this Board website to ascertain as to whether his/her Application Form Number is included within the cancellation list of application forms. If not, then he/she should contact personally/through authorized representative along with following relevant documents for procurement of duplicate admit card.*

- a) *Xerox copy of the filled-in Application Form.*
- b) *Postal slip for despatch of filled-in Application Form (Speed Post).*
- c) *Two identical copies of the colour photographs (as pasted in the Application Form) duly attested by the Head of the recognised institution last attended.*
- d) *Bank Slip (which is retained by the candidate).*
- e) *Original admit cards of Madhyamik(10th Standard) or equivalent examinations/H.S.(10+2) or equivalent examinations.*

*Duplicate admit card will be issued from the office of the Board, to the concerned candidates in person from 11 a.m. to 4 p.m. during the period from 06.04.2010 to 9.04.2010.*

*After receipt, if the Original admit card is lost before examination then for obtaining the duplicate admit card the original copy of the missing diary lodged in the local police station in this regard will have to be produced in addition to the aforesaid documents; as stated above [Vide a) to e)]. Requisite fee of Rs.200/- (Rupees Two hundred only) in the form of a Bank Draft to be drawn in favour of “West Bengal Joint Entrance Examinations Board,” payable at Kolkata/Howrah has to be paid for the purpose.*



Candidates must ensure that the photographs on the admit card are not mutilated/distorted/soiled even by accident and the hologram pasted on the photograph is not torn or taken out. Candidates with such admit cards will not be allowed to appear in the Joint Entrance Examination.

*Candidates must retain their admit cards carefully in a secured place in undamaged condition in all respect as stated above till the completion of admission procedure.*

*No duplicate Admit Card will be issued after the Joint Entrance Examination under any circumstances.*

*All applicants who appear to be prima facie eligible shall be provisionally permitted to sit for the Joint Entrance Examination. If, after scrutiny at any stage, it is found that an applicant is otherwise ineligible his/her candidature will be automatically cancelled even if he/she has appeared at the Joint Entrance Examination and secured a position in the merit list or at any stage during Counselling/admission or registration.*

*The candidature of a candidate will be automatically cancelled if he/she fails to produce any of the required appropriate documents in original during counselling / admission or registration for fulfillment of eligibility and other criteria as specified earlier.*

#### **7. Centre of Examination :**

- The allotment of examination centre will be completely at the discretion of the Board. No request for change of centre allotted will be entertained under any circumstances.
- Candidates must indicate the name of the states they belong to by ticking the appropriate **State Box** on the top of the printed window envelop received in the Application Kit.
- Candidates must write the district code as specified in **Appendix –IV** in the appropriate Boxes on the top of the printed window envelop received in the Application Kit.
- Candidates residing in West Bengal must also specify their district on the top of the printed envelop received in the Application Kit in the Box provided for the purpose.

#### **8. Procedure for conduct of Examination : Important procedures to be followed during the conduct of examination have been specified in APPENDIX - III.**

##### **8.1 Districts and their Codes :**

Districts and their codes have been mentioned in APPENDIX - IV.

#### **9. Evaluation and Declaration of Results of JEM – 2010 :**

**9.1 Rules for scrutiny/review of Answer Sheet :** *The Board neither publishes nor communicates the result to any individual applicant. It does not have any provision for post publication scrutiny and /or review and hence will not entertain any such application after the examination.*

**9.2 Declaration of the Results of ‘JEM - 2010’ :** Results of ‘JEM – 2010’ are likely to be declared by June 15, 2010. Results will be available in various websites over and above the website of the Board, which will be announced in various electronic/printing media before declaration of results.

On the basis of performance in JEM-2010 the Board will publish the merit list(s). The number of merit listed candidates to be published will be decided by the appropriate authority.

9.3 Rank Card will be issued only to the merit listed candidates in due course after declaration of the results. Detailed information in this regard will be available in the following websites:

- a) [www.wbjeeb.in](http://www.wbjeeb.in)
- b) [www.banglarmukh.com](http://www.banglarmukh.com)
- c) [www.csc-et.in](http://www.csc-et.in)

## 10. Legal Jurisdiction :

10.1 All pertaining to conduct of JEM-2010 shall fall within the jurisdiction of Kolkata only.

10.2 The Board will not be a party pertaining to any dispute arising in the process of admission to any course of study through JEM – 2010.

## 11. Admission :

11.1 It should be noted that the Board is in no way responsible for admission to the Constituent Universities/University Departments/Colleges. Allotment of seats to any Engineering/ Technology/ Pharmacy/Medical/Dental college shall be governed by different Central Selection Committees and accordingly candidates have to comply with the requirements of eligibility conditions for admission as would be laid down by concerned Central Selection Committees of the State. The Board only provides the Merit Lists of the Entrance Examination. Being Merit Listed does not make a candidate eligible for admission to any constituent University/University Department/ College.

*No merit listed candidate will be allowed to appear at the counselling unless he/she is able to produce admit card issued by the Board with proper un mutilated / undistorted / unsoiled photograph with hologram.*

11.2 Particulars regarding availability of branches in Engineering & Technology as well as B.Arch/ Pharmacy/MBBS/Dental etc. courses offered by the different Universities/ University Departments / Institutions are provided herewith for ready reference of intending students. It is to be noted that final list for availability of seats in B.E. / B. Tech. and/or MBBS/BDS etc. courses shall be provided by concerned Central Selection Committees prior to the counselling and allotment.

## 12. Certificate for Reserved Categories :

12.1 **Certificate for SC/ST :** Scheduled Caste / Scheduled Tribe candidates in W.B., as specified in Govt. of W. B. Order No. 111(2)-TW/EC dated 07.03.91 / W.B. Order No. 905-TW/EC/SC/O/ MR-1/95(1) dated 12.09.1995 are eligible for admission through Joint Entrance Examination, 2010. **However, SC/ ST candidates hailing from States other than West Bengal are not eligible for such benefit and they will be treated as General category candidates.** The Caste certificates will have to be produced at the time of counselling from the competent authorities viz, (i) District

Magistrate; ii) Collector; iii) Addl. District Magistrate; iv) Dy. Collector; v) Sub-Div. Officer; vi) Sub-Div. Magistrate; vii) Executive Magistrate; viii) 1<sup>st</sup> Class Stipendiary Magistrate; ix) Chief Metropolitan Magistrate, Kolkata; x) Addl. Chief Metro. Magistrate, Kolkata; xi) Metropolitan Magistrate, Kolkata xii) Collector of Land Revenue; and xiii), Deputy Collector of Land Revenue, within their respective jurisdictions. However, Director/ Deputy Director, Scheduled Caste and Tribes Welfare Department, Govt. of West Bengal can issue such certificate in case of candidates claiming to be Scheduled Caste or Scheduled Tribe residing in any part of West Bengal.

**12.2 Certificate for PC :** The PC candidates claiming seats under reserved category are required to produce PC certificate from the competent authority satisfying the following criteria.

**12.2 (a)** For Admission to B.E./B.Tech/B.Arch Courses : For Physically Challenged (locomotor disorder, visual impairment, Speech & hearing Impairment) category candidate a minimum of 40% disability is required subject to the condition that the candidate is capable of carrying out all activities related to theory and practical work as applicable to B.E/B.Tech/B.Arch courses without any special concession and exemption.

**12.2 (b)** For Admission to MBBS/Dental Courses : For Admission to MBBS/Dental courses eligibility criteria for Physically challenged candidate will be notified by Central Selection Committee (Medical) in due course.

**13. List of the Universities / University Departments / Institutions offering different degree level Engineering / Technology / B.Pharm / B.Arch / B. Agricultural Engineering courses in West Bengal as on 31.10.2009**

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
<b>A. University &amp; University Departments</b>			
1	<b>BENGAL ENGINEERING &amp; SCIENCE UNIVERSITY, SHIBPUR</b> College Road, P.O. – Botanical Garden, Howrah - 711 103 (033) 2668-4561-63 / 2668-0521-25, (033) 26682916 www.becs.ac.in	Shibpur, Howrah Pin-711 103	CE, CST, EE, ETC, IT, ME, MT, MN, AR
2	<b>BIDHAN CHANDRA KRISHI VISWA VIDYALAYA</b> P.O.Krishi Viswavidyalaya, Mohanpur, Nadia-741252 (03473) 222657 / 222269 / 222270, (0347) 3222657 www.bckv.edu.in	Mohanpur Nadia Pin-741252	AG
3	<b>JADAVPUR UNIVERSITY</b> Kolkata – 700 032 (033) 2414-6007 www.jadavpur.edu	Jadavpur Kolkata Pin-700 032	AR, CH, CE, CSE, EE, ECE, ME, MT, PH, PE, PT, PW, COE, EIE, IT
4	<b>KALYANI UNIVERSITY SCIENCE INSTRUMENTATION CENTRE</b> P.O. Kalyani, Dist Nadia, Pin- 741 235 (033) 2582 3457 (Direct) 2582 8750 Ext. 297/ 298, (033) 25828282 www.klyuniv.ac.in	Kalyani Nadia Pin- 741 235	AEIE, IT
5	<b>UNIVERSITY INSTITUTE OF TECHNOLOGY, BURDWAN</b> Golapbag North, Burdwan - 713 104 (0342) 2558776/ 777, (0342) 2530452 www.buruniv.ac.in, www.uit.html	Burdwan Pin-713 104	CSE, ECE, AEIE, IT, CE, EE
6	<b>UTTAR BANGA KRISHI VISWAVIDYALAYA</b> P.O.- Pundibari, Dist.- Cooch Behar, Pin 736 165 (03582) 270948, 09434686155 (M), (0358) 2270143 www.ubkv.ac.in	Cooch Behar Pin-736 165	AG
7	<b>WEST BENGAL UNIVERSITY OF ANIMAL &amp; FISHERY SCIENCES</b> 37/68, Kshudiram Bose Sarani, Kolkata - 37 (033) 2558 0278, 2556 3123, (033) 2557 1986	Kolkata Pin-700 037	DT
8	<b>WEST BENGAL UNIVERSITY OF TECHNOLOGY</b> BF-142, Salt Lake, Sector-I, Kolkata - 700 064 (033) 2321-1327/ 1345, (033) 23341034 www.wbut.net	Salt Lake Kolkata Pin-700 064	IT, CSE

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
<b>B. State Government Institutions</b>			
9	<b>GOVT. COLLEGE OF ENGINEERING &amp; CERAMIC TECHNOLOGY</b> 73, A.C. Banerjee Lane, Kolkata - 700 010 2370 1264, (033) 23701264 www.gcect.ac.in	Beliaghata Kolkata Pin-700 010	CSE, CT, IT
10	<b>GOVT. COLLEGE OF ENGINEERING &amp; TEXTILE TECHNOLOGY</b> 4, Barrack Square East, P.O.- Berhampore, Murshidabad-742110 (03482) 252809/ 250142, (0348) 2252809 www.gcettb.org	Behampore, Murshidabad Pin -742110	CSE, TT
11	<b>GOVT. COLLEGE OF ENGG. &amp; TEXTILE TECHNOLOGY</b> 12, William Carey Road, Serampore - 712 201 (033) 2662 1058/ 3156, (033) 26621058 www.gcetts.org	Serampore Hooghly Pin-712 201	CSE, IT, TT, APM
12	<b>GOVERNMENT COLLEGE OF ENGINEERING &amp; LEATHER TECHNOLOGY</b> L.B.Block, Sector – III, Salt Lake City, Kolkata – 700 098 (033) 2335-6977, (033) 23356977	Salt Lake Kolkata Pin-700 098	LT, CSE, IT
13	<b>JALPAIGURI GOVERNMENT ENGINEERING COLLEGE</b> P.O. – Jalpaiguri Government Engineering College, Jalpaiguri-735 102 (03561) 255131/ 255132, (0356) 1255131 www.jgec.org	Jalpaiguri Pin-735 102	CE, CSE, EE, ECE, IT, ME
14	<b>KALYANI GOVERNMENT ENGINEERING COLLEGE</b> Kalyani University Campus, P.O.- & P.S.- Kalyani, Nadia-741 235 (033) 2582 6680 (PBX)/ 2582 / 1309 (Principal) / 2580 8437 (A.O.), (033) 25808437 www.kgec.org	Kalyani Nadia-741235	CSE, ECE, EE, ME, IT
15	<b>INSTITUTE OF PHARMACY</b> Jalpaiguri, P.O.& Dist: Jalpaiguri, Pin - 735 101. (03561) 230057, (0356) 1221884	Jalpaiguri Pin-735 101	PH
<b>C. Self-Financing Institutions</b>			
16	<b>INSTITUTE OF JUTE TECHNOLOGY</b> 35, Ballygunge Circular Road, Kolkata-19 (033) 2461-5477/5632/5326/5444 Fax: 2461-5632 www.ijtindia.org	Ballygunge Kolkata-700 019	JFT, JT

<b>Sl. No.</b>	<b>Name of the Institution &amp; Address</b>	<b>Location</b>	<b>Courses offered noted by abbreviations</b>
17	<b>NATIONAL POWER TRAINING INSTITUTE</b> Michel Faraday Street, City Centre, Durgapur - 713 216 (0343) 2545888/ 2546237/ 2546887, (0343) 2545888 www.npti.nic.in www.nptidgp.com	Durgapur Pin-713 216	PW
18	<b>ASANSOL ENGINEERING COLLEGE</b> Sen-Religh Road, Kanyapur, Asansol, Burdwan - 713 304 (0341) 225 2108 / 225 3057, (0341) 2256334 e-mail.aeccal@vsnl.net	Asansol Pin-713 304	CSE, ECE, IT, ME, EE, AEIE
19	<b>ARYABHATTA INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> Panagarh, P.O.- Panagarh Bazar, Burdwan-713148 (0343) 2526417/ 416/ 415, (0343) 2526417 www.alemd.in	Panagarh Burdwan Pin-713148	CSE, ECE, IT, EE, EEE, ME
20	<b>ABACUS INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> Natun Gram, Mogra, Hooghly - 712 148 (03213) 202076, www.abacusinstitute.com	Mogra Hooghly Pin-712 148	CSE, AEIE, ECE, IT
21	<b>ACADEMY OF TECHNOLOGY</b> Aedconagar, Hooghly- 712 121 (033) 2684- 2888/ 0002 /0003, (033) 2684-2888 www.actechindia.org	Adisaptagram Hooghly Pin-712 121	CSE, ECE, EE, IT, AEIE, ME
22	<b>ADAMAS INSTITUTE OF TECHNOLOGY</b> Barasat-Barrackpore Road, Barasat, North 24 Parganas (N), Kolkata-700 126, (033) 2524-1817 www.adamas.co.in	Barasat Kolkata Pin-700 126	ECE, CSE, IT, CE
23	<b>BANKURA UNNAYANI INSTITUTE OF ENGINEERING</b> Subhankar Nagar, Pohabagan, Bankura - 722 146 (03242) 259 360/ 255 955/ 240 800 www.buie.info	Bankura-146 Pin-722 146	CSE, ECE, EE, IT, EIE
24	<b>BENGAL COLLEGE OF ENGINEERING &amp; TECHNOLOGY</b> Sahid Sukumar Bannerjee Sarani, Bidhan Nagar, Durgapur – 713 212 (0343) 253 3189 / 90, (0343) 253 6756 www.bcetdgp.ac.in	Durgapur Bidhan Nagar Pin-713 212	CSE, ECE, AEIE, IT, EEE, BT, CE, ME, EE
25	<b>BENGAL COLLEGE OF PHARMACEUTICAL SCIENCE &amp; RESEARCH</b> Biplabi Rasbehari Basu Sarani, Bidhan Nagar, Durgapur-713 212 (0343) 253 2606, 253 3189 Fax- (0343) 253 3186 e-mail.aksest_pharm@rediffmail.com	Bidhan Nagar Durgapur Pin-713 212	PH

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
26	<b>BENGAL COLLEGE OF ENGINEERING &amp; TECHNOLOGY FOR WOMEN</b> Shilpo Kanan Road, Bidhan Nagar, Durgapur (0343) 253- 2506, 253-3189, Fax (0343) 253 3186 e-mail : skset_dgp@rediffmail.com	Bidhan Nagar Durgapur Pin-713 212	CSE, ECE, EE, IT
27	<b>BENGAL INSTITUTE OF TECHNOLOGY &amp; MANAGEMENT</b> BITM Campus, Santiniketan Bypass, P.O.- Doranda, Pin : 731 235 (03463) 271 353/ 54, City: 98300 08167 www.camelliagroup.org	Santiniketan Pin-731 235	CSE, ECE, EE, IT, AEIE, ME
28	<b>BENGAL INSTITUTE OF PHARMACEUTICAL SCIENCES, KALYANI</b> State Pharmacopoeial Laboratory & Pha. Campus, Kalyani-235, Nadia, 2521-4802, 2337-4765, (033) 2521-3190 www.bipskalyani.org	Kalyani, Nadia Pin-741 235	PH
29	<b>BENGAL SCHOOL OF TECHNOLOGY</b> Sugandha, Delhi Road, P.O.- Sugandha, Dist- Hooghly-712202 2686-6064/2027/2868 www.sedcoindia.com/pharmacy	Hooghly Pin-712202	PH
30	<b>BIRBHUM INSTITUTE OF ENGINEERING &amp; TECHNOLOGY</b> B.I.E.T. P.O. Suri, Dist: Birbhum-731 101. (03462) 250 568/597 e-mail : dir.biet@yahoo.com	Suri Birbhum Pin-731 101	CSE, ECE, EE, IT, CE, ME
31	<b>BUDGE BUDGE INSTITUTE OF TECHNOLOGY</b> Nischintapur, Budge-Budge, Kolkata 700 137. (033) 2482-0670, Fax- (033) 2482-0641. www. bbit.edu.in, e-mail : contact@bbit.edu.in	Budge Budge Kolkata Pin-700 137	CE, EE, CSE, ECE
32	<b>BCDA COLLEGE OF PHARMACY &amp; TECHNOLOGY, HRIDAYPUR</b> 78, Jessore Road (South),Hridaypur, Barasat,Kolkata-700 127 (033) 2584 2665 / 2433, 94338 41204 (M) www.bcdapt.com	Hridaypur Near Barasat Near Barasat Kolkata Pin-700 127	PH
33	<b>BENGAL INSTITUTE OF TECHNOLOGY</b> Tech Town, Dhapa Manpur on Basanti Highway, Hadia, Kolkata-150 (033) 2345 8004 / 05, Fax. 2345-8077 www.bitonline.in, e-mail : bitkolkata@yahoo.co.in	Dhapa Kolkata-700 150	CSE, ECE, IT, BT

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
34	<b>B.P.PODDAR INSTITUTE OF MANAGEMENT &amp; TECHNOLOGY</b> 137, VIP Road, Poddar Vihar, Kolkata – 700 052 (033) 2573 9607/ 9608/ 9609/ 9610, (033) 2573 9401 www.bppimt.ac.in	Poddar Bihar Kolkata Pin-700 052	CSE, ECE, IT, EE
35	<b>BHARAT TECHNOLOGY</b> Banitabla,Uluberia, Howrah-711 316 (033) 2363-9292, Fax.2709-4430,2372-0017	Uluberia Howrah Pin-711316	PH
36	<b>COLLEGE OF ENGINEERING AND MANAGEMENT, KOLAGHAT</b> P.O.- KTHP Township (Mecheda), Midnapore- 721 171 (03228) 250600/ 250971/ 249443, Fax: (0322) 8250880 www.cemkolaghat.org	Kolaghat Midnapore Pin-721 171	CSE, ECE, EE, IT, EIE
37	<b>CALCUTTA INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> 24/1A, Chandi Ghosh Road, Tollygunge I.T.I.Campus, Kolkata – 40 (033) 2421 9951/ 5747,Fax: (033) 2421 8998 www.ciemcal.org	Tollygunge Kolkata-700 040	CSE, ECE, EE, IT, ICE/CIE
38	<b>CALCUTTA INSTITUTE OF TECHNOLOGY</b> P.O.- Banitabla, Uluberia, Howrah-711 316 (033) 2709-4367 / 30948176 / 2641-8428, (033) 2661- 0736	Uluberia Howrah Pin-711 316	CSE, ECE, IT, CH
39	<b>CALCUTTA INSTITUTE OF PHARMACEUTICAL TECH. AND ALLIED HEALTH SCIENCES.</b> Banitabla, Checkpost, P.O.-Banitabla, Uluberia, Howrah – 711 316 (033) 2709 4367/ 9831106443, (033) 26610736, Fax: 2661-0736 www.urschard.org	Uluberia Howrah Pin-711 316	PH
40	<b>CAMELIA INSTITUTE OF TECHNOLOGY</b> Digberia (Badu Road), Madhyamgram, Kolkata – 700 129 (033) 6455- 1145 / 1146 / 1660 www.camelliagroup.org	Madhyamgram Kolkata Pin- 700129	CSE, ECE, EEE, IT, EIE
41	<b>CAMELIA SCHOOL OF ENGINEERING &amp; TECHNOLOGY</b> Nadibhag, P.O.- Badu Road, Madhyamgram, Kolkata – 700 129 (033) 3248-6971 / 72 www.camelliagroup.org	Madhyamgram Kolkata Pin-700 129	ECE, CSE, IT, EE, CE
42	<b>CAMELIA INSTITUTE OF TECHNOLOGY &amp; MANAGEMENT</b> Halder Dighi, G.T.Road, Bainchi, Hooghly-712 134 (033) 2212 -1007 / 1009 , Fax – (033) 227 7540 www.camelliagroup.org	Bainchi Hooghly Pin-712 134	CSE, EE, ME, ECE



Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
43	<b>DR.B.C.ROY ENGINEERING COLLEGE</b> Jemua Road, Fuljhore, Durgapur – 713 206, Dist: Burdwan (0343)250-1353/ 4106/4121,Fax: (0343) 250-4059/3424 www.bcrec.org, www.bcrec.net.in	Fuljhore Durgapur Pin-713 206	CSE, ECE, EE, IT, EIE, ME
44	<b>DR.B.C.ROY COLLEGE OF PHARMACY AND ALLIED HEALTH SCIENCES</b> Dr. Meghnath Saha Sarani, Bidhannagar, Durgapur-713 206 (0343) 5522496 / 2532678, (0343) 23218703 www.bcrec.org, www.bcrec.net.in	Bidhan Nagar Durgapur Pin-713 206	PH
45	<b>DURGAPUR INSTITUTE OF ADVANCED TECHNOLOGY &amp; MANAGEMENT</b> G.T. Road Rajbandh, Durgapur – 713 212, Dist: Burdwan. (0343) 2520712/ 13, (0343) 2520881 www.diatm_rahul.ac.in	Rahbandh Durgapur Pin-713 212	CSE, ECE, EE, IT, CH, ME
46	<b>DUMKAL INSTITUTE OF ENGINEERING &amp; TECHNOLOGY</b> Basantapur, Murshidabad-742 406, (03481) 231-144,231-155 www.b-e-s.net	Dumkal Murshidabad Pin-742 406	CSE, ECE, IT, EE, EIE
47	<b>DREAM INSTITUTE OF TECHNOLOGY,</b> Samali, P.O.-Nahazari, PS.-Bishnupur, 24Pgns(S), Kolkata-104 033-2498-0376, 3293-6088, Fax : (033) 2458-0244 www.dreaminstituteonline.org	Bishnupur Kolkata-700 104	CSE, ECE, AEIE, EE
48	<b>DR. SUDHIR CHANDRA SUR DEGREE ENGINEERING COLLEGE</b> 540, Cossipur Dum Dum Road, Kolkata - 700 074 (033) 2560- 0149. www.jisgroup.org	Dum Dum Kolkata-700 074	CSE, ECE, ME, AE
49	<b>FUTURE INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> Sonarpur Station Road, Teghori, P.O.-R.K.Pally, Kolkata -700 150 (033) 2434-5615/5640,Fax: (033) 24345641 www.fiemonline.org	Sonarpur Kolkata Pin-700 150	CSE, ECE, IT, EE, ME. EIE
50	<b>GLOBAL INSTITUTE OF MANAGEMENT AND TECHNOLOGY</b> Pal Para More, Bhatjangla, Krishna Nagar, Nadia, (West Bengal) (03472) 271 211, Fax (03472) 271 311 www.jimt-india.com	Krishna Nagar Nadia Pin-741 102	ECE, CE, EE, ME
51	<b>GUPTA COLLEGE OF TECHNOLOGICAL SCIENCE</b> Ashram More, G.T.Road, Asansol-713 301, Dist: Burdwan (0341) 221-3120 / 221-4604, Fax :(0341) 231 4604 www.gcts.org	Asansol Burdwan Pin-713 301	PH

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
52	<b>GURUNANAK INSTITUTE OF TECHNOLOGY</b> 157, Nilgunj Road, Panihati Kolkata - 700 114 (033) 2523-0743/ Fax: (033) 2563-7957 www.jisgroup.ac.in/gnit/	Panihati Kolkata Pin-700 114	CSE, ECE, EE, IT, AEIE, FT
53	<b>GURUNANAK INSTITUTE OF PHARMACEUTICAL SCIENCE &amp; TECHNOLOGY</b> 157/F, Nilgunj Road, Panihati, Kolkata – 114 2523-1247, (033) 2563-7957 www.gnipst.ac.in	Panihati Kolkata-700 114	PH
54	<b>GREATER KOLKATA COLLEGE OF ENGINEERING AND MANAGEMENT</b> Dudhnai, Baruipur, Ramnagar-II, 24 Pgs. (South) (033) 2430 5897, Fax: (033) 2430-5897	Baruipur 24Pgs (S) Pin-700 047	CSE, ECE, IT, AEIE
55	<b>HALDIA INSTITUTE OF TECHNOLOGY</b> P.O. HIT, Haldia, Purba Medinipur -721 657 (03224) 252850/ EPBX :252900/253061/255615/255616 www.hit-haldia.in	Haldia Medinipur Pin-721 657	CSE, ECE, BT, CE, CH, EE, AEIE, FT, ICE/CIE, ME, PE, IT
56	<b>HERITAGE INSTITUTE OF TECHNOLOGY</b> Chowbhaga Road, Anandapur, P.O.-East Kolkata Township, Kolkata-107 (033) 2443- 0454/ 56/ 57, Fax: (033) 2443-0455 www.heritageit.edu	Anandapur Kolkata-700 107	CSE, ECE, BT, CH, AEIE, IT
57	<b>HOOGHLY ENGINEERING &amp; TECHNOLOGY COLLEGE</b> Vivekananda Road, Pipulpati, P.O.-& Dist.-Hooghly, Pin-712 103 (033)2681- 0505/1392, Fax: (033) 26803026 www.hooghlyetcs.org	Pipulpati Hooghly Pin-712 103	CSE, ECE, EE, CE
58	<b>IMPS COLLEGE OF ENGINEERING &amp; TECHNOLOGY</b> Nitynandapur, P.O-Malda, Dist: Malda-732 101 (03512) 271-555 / 278-115, Fax: (0351) 2278115	Malda Pin-732 103	CSE, ECE, EE, IT
59	<b>INSTITUTE OF ENGINEERING AND MANAGEMENT</b> Y-12, Sector-V, Electronic Complex, Salt Lake City, Kolkata-700 091 (033) 2357- 7649(D)/2969/ 2059, Fax: (033) 2357-8302 www.iemcal.com	Salt Lake Kolkata Pin-700 091	CSE, ECE, IT
60	<b>INSTITUTE OF TECHNOLOGY AND MARINE ENGINEERING</b> Jhinga, P.O -Amira, P.O: Amira, Diamond Harbour Road, 24Pgs(S)-743 368 (953174)245101/ 356/078 www.itmeindia.org	D.H.Road 24 Pgs(S) Pin-700 017	CSE, ECE, IT, MR, BT

Sl. No.	Name of the Institution & Address	Location	Courses offered noted by abbreviations
61	<b>INSTITUTE OF SCIENCE &amp; TECHNOLOGY</b> Dhurabila, Dhamkuria, Chandrakona Town, Paschim Medinipur-721201 (03225) 267-288,266-644 www.istonline.org.in	Chandrakona Medinipur Pin-721201	CSE, ECE, AEIE, IT, EEE
62	<b>IERCEN INSTITUTE OF INFORMATION TECHNOLOGY</b> Banipur College Road, Banipur, Habra, 24 Pgs.(N), Pin- 743 233 (033) 2357-7550-59, Fax- (033) 2357 -7735	Banipur Habra Pin-743 233	ECE, EIE, CSE, IT, EEE
63	<b>INSTITUTE OF ENGINEERING &amp; INDUSTRIAL TECHNOLOGY</b> P.O.- Malandighi, P.S.- Kaksha, Durgapur – 713 212 Dist-Burdwan	Durgapur Burdwan Pin-713 212	CSE, ECE, EEE, IT
64	<b>JIS COLLEGE OF ENGINEERING</b> Block “A” Phase III, Kalyani - 741 235, (033) 2582 2137/ 2856/ 2580 8640, Fax: (033) 2582-2138 www.jiscollege.ac.in	Kalyani Pin-741 235	CSE, ECE, IT, BM, EE, EIE, ME
65	<b>KANKSA ACADEMY OF TECHNOLOGY &amp; MANAGEMENT</b> Behind B.D.O. Office, Kanksa Block, P.O- Panagarh Bazar, Burdwan (0343) 252- 4038/39/41, Fax – (0343) 252 4039, www.kanksaacademy.com	Panagarh Burdwan Pin-713 148	CSE. ECE, EE, IT
66	<b>KANAD INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> P.O.- Mankar, Dist.- Burdwan, Pin-713144 www.kanadinstitute.org	Mankar Burdwan Pin-713144	CSE, ECE, IT, EE, ME
67	<b>KINGSTON EDUCATIONAL INSTITUTE</b> Berunanpukuria, P.O- Malikapur, Barasat, 24 Pgs(N) (033) 2542- 9800/2524- 0418, e-mail: Kingston_educational_institute@yahoo.com	Barasat Pin-700 129	CSE, EE, ECE, IT
68	<b>MURSHIDABAD COLLEGE OF ENGINEERING &amp; TECHNOLOGY</b> Banjetia, Berhampore, Dist: Murshidabad- 742 102. (03482) 258-145/ 251-191, (03482) 277-267 www.mcetbhb.net	Murshidabad Pin-742 102	CSE, ECE, IT, EE
69	<b>MEGHNAD SAHA INSTITUTE OF TECHNOLOGY</b> Naziabad, P.O.- East Kolkata Town Ship, Kolkata – 107 (033) 2443-1031, 2443-1032, 2226- 4396/ 9785, (033) 2226-2841 www.msitcollege.org	NRI Complex Kolkata Pin-700 107	CSE, ECE, IT, CE, EE
70	<b>MALLABHUM INSTITUTE OF TECHNOLOGY</b> Braja Radha Nagar P.O. Gosaipur, P.S.-Bishnupur, Bankura-722 122 (03244) 255206/07/08 City : 2460 5166/24406245, (0324) 4255206 www.mitbishnupur.com	Bishnupur Bankura Pin-722 122	CSE, ECE, EE, IT, ME, PE

<b>Sl. No.</b>	<b>Name of the Institution &amp; Address</b>	<b>Location</b>	<b>Courses offered noted by abbreviations</b>
71	<b>MCKV INSTITUTE OF ENGINEERING</b> 243, G.T.Road (N) Liluah, Howrah -711 204. (033) 2654- 9315/ 17, Fax: (033)2664-9318 www.mckv.edu.in	Liluah Howrah Pin-711 204	CSE, ECE, IT, AE, ME
72	<b>NARULA INSTITUTE OF TECHNOLOGY</b> 81, Nilgunj Road, Agarpara, Kolkata - 700 019 (033) 2563 8888/ 7777, Fax: (033)2683-7029 www.nit.ac.in	Agarpara Pin-700 019	CSE, ECE, EE, IT, CE
73	<b>NETAJI SUBHAS CHANDRA BOSE INSTITUTE OF PHARMACY</b> Tatla, Roy Para, P.O&P.S -Chakdaha, Nadia -741 222 (03473) 329-337/207054, Fax: (03473) 247 882 www.nscbipe.org	Chakdaha Nadia Pin-741 222	PH
74	<b>N.S.H.M COLLEGE OF PHARMACEUTICAL TECHNOLOGY</b> (124), B.L. Saha Road, Tollygunge Kolkata-700 053 (M) 30960820 www.nshm.com	Tollygunge Kolkata-700 053	PH
75	<b>NETAJI SUBHAS ENGINEERING COLLEGE</b> Techno India, Panchpota (Near Garia Rly. Station), Garia, Kolkata-152 (033) 2436 - 3333/ 1285 City: 2226 4396/ 9785, Fax: (033) 24361286 www.nsecollege.org, e-mail: info@nsecollege.org	Garia Kolkata-700 152	CSE, ECE, EE, IT, BM, EIE
76	<b>PAILAN COLLEGE OF MANAGEMENT &amp; TECHNOLOGY</b> Plot 2-6, Sector-I, Phase-I, Bengal Pailan Park, Amgachia Road, Joka, Kolkata-700 104 (033) 2453 5605, 2497 8006/07, Fax-2453 5604	Pailan Park Kolkata-700 104	CSE, ECE, EEE, IT
77	<b>REGENT EDUCATION &amp; RESEARCH FOUNDATION</b> Bara Kanthalia, P.O – Sewli Telini Para, P.S – Titagarh, Kolkata – 700 121, (033) 6459 8188, 2535-3051/52 e-mail:rerfkolkata@gmail.com	Titagarh Kolkata-700 121	CSE, ECE, EEE, CE
78	<b>RCC INSTITUTE OF INFORMATION TECHNOLOGY</b> College of Lether Technology (Old Campus), Beliaghata, Canal South Road, Kolkata- 700 015. (033) 2323-2463, 2323-4437, Fax: (033) 2323-2400, www.rcciit.in	Beliaghata Kolkata-700 015	CSE, ECE, IT, EE
79	<b>SILIGURI INSTITUTE OF TECHNOLOGY</b> Hill Cart Road, P.O-Sukna, Siliguri, Darjeeling-734 009 (0353) 277 8002/8004 www.sitcollege.org, e-mail : silslg@satam.net.in	Sukna Darjeeling Pin-734 009	CSE, ECE, EE, IT, IC

<b>Sl. No.</b>	<b>Name of the Institution &amp; Address</b>	<b>Location</b>	<b>Courses offered noted by abbreviations</b>
80	<b>SAROJ MOHAN INSTITUTE OF TECHNOLOGY</b> Vill+P.O.-Guptipara, Dist: Hooghly, Pin: 712 512 (03213) 262-806/ 262-2719, Fax: (03213) 26856 Hooghly	Guptipara Pin-734 009	CSE, ECE, EE, AEIE, IT, ME
81	<b>ST. THOMAS COLLEGE OF ENGINEERING &amp; TECHNOLOGY</b> 4, Diamond Harbour Road, Kolkata - 700 023 (033) 2448 1081/ 1082, Fax: (033) 24482914 www.stcet.org	Kolkata-700 023	CSE, ECE, EE, IT
82	<b>SEACOM ENGINEERING COLLEGE</b> Jaladhulagori, P.S.-Sankrail, Howrah - 711 302 2679-0481 /0482/0483, Fax: (033) 2679-0480 www.seacomkolkata.org	Sankrail Howrah Pin-711 302	CSE, ECE, EE, ME, IT, MR
83	<b>SURENDRA INSTITUTE OF ENGINEERING &amp; MANAGEMENT</b> Dhakuria, P.O.- New Chamta, P.S.- Matiagara, Siliguri, Darjeeling Fax – (0353) 251 7520	Siliguri Darjeeling Pin-734 009	CSE, ECE, EE, ME
84	<b>SUPREME KNOWLEDGE FOUNDATION GROUP OF INSTITUTIONS</b> 1Khan Road, P.O.- Mankundu, Hooghly- 712 139, (033) 2683 1141 www. Supremeknowledgefoundation.com	Mankunu Hooghly-712 139	CSE, EE, AEIE, ECE
85	<b>SWAMI VIVEKANANDA INSTITUTE OF SCIENCE &amp; TECHNOLOGY</b> Dakshin Gobindapur, P.S.- Sonarpur, Kolkata - 700145 (033) 2437-9913	Sonarpur Kolkata-700 145	CSE, ECE, EEE, ME
86	<b>TECHNO GLOBAL-BALURGHAT</b> Mangalpur, Near District Jail, P.O- Beltala, P.S. – Balurghat, South Dinajpur, -733 103, (0352) 2271101	Balurghat South Dinajpur Pin-733 103	CSE, EE, ECE, IT
87	<b>TECHNO INDIA</b> EM 4/1, Salt Lake City, Sector – V, Kolkata - 91 (033) 2357 5683/ 85, (033) 23575686 City: 2226 4396/ 9785 www.ticollege.org	Salt Lake Kolkata-700 091	CSE, ECE, EE, FT, IT, EIE
88	<b>TECHNO INDIA COLLEGE OF TECHNOLOGY</b> New Town, Rajarhat, Kolkata-700 156 (033) 2324 – 2050, Fax: 2324-2090 www.tictcollege.org	New Town Kolkata-700 156	CSE, ECE, EE, EIE, IT

### 13.2. *Abbreviations of different courses and their full names :*

*Abbreviations of different courses and their full names are given in APPENDIX-V.*

### 13.3 **Reservation of seats in B.E. / B. Tech. / B. Pharm. / B. Arch. / B. Agricultural Engineering :**

#### 13.3.1 **Reservation of seats for SC/ST/PC Candidates :**

In **Govt. Engineering/Technology Colleges** of the State as well as in those **Self Financing Private Engineering & Technology Colleges of the State, who have received some grants-in aid from the Government**, reservation of seats for SC/ST/PC candidates shall be governed by the State Govt. Reservation Rules.

For **Self Financing Private Engineering & Technology Colleges** of the State, reservation of seats under such category is not a mandatory requirement. However, some of such colleges offer seats to reserved category of students at the discretion of the concerned College Authority.

For Universities / University Departments, reservation of seats for SC/ST/PC candidates shall be governed by the rules of the concerned University.

Availability of seats for aforesaid reserved category of students shall be declared by the Central Selection Committee (Engineering & Technology).

**It is important to be noted that availability of such reserved category of seats are applicable for candidates of West Bengal only.**

#### 13.3.2 **Reservation of seats for students under Defence Quota :**

Altogether 12 (twelve) nos. of seats are reserved for students under Defence Quota. 7 (seven) seats in different branches in Govt. Engineering & Technology Colleges of the State. 2 (two) seats are reserved at Jadavpur University and 3 (three) seats are reserved at Bengal Engineering and Science University, Shibpur. The branches of such seats in universities will be decided by the respective University Authority. Branchwise distribution of 7 (seven) seats under Govt. Engineering Colleges are furnished below :

<i>Name of the Govt. Engg./Technology College</i>	<i>No. of seats with branch available</i>
1. Jalpaiguri Govt. Engineering College	: 1 (Mechanical Engineering) : 1 (Information Technology)
2. Govt. College of Engg. & Textile Tech.,Serampore	: 1 (Information Technology)
3. Govt. College of Engg. & Textile Tech.,Berhampore	: 1 (Computer Science & Engg.)
4. Govt. College of Engg. & Ceramic Tech., Kolkata	: 1 (Information Technology)
5. Govt. College of Engg. & Leather Tech., Kolkata	: 1 (Leather Technology)
6. Kalyani Govt. Engineering College, Kalyani	: 1 (Electrical Engineering)

For consideration under **Defence Quota**, candidates will have to apply to the **Rajya Sainik Board, Home Department, Government of West Bengal, Writers' Buildings, Kolkata – 700 001** through the concerned Zila Sainik Board, W.B. (for ex-servicemen) and Units (for Serving Soldiers) in the prescribed form (available with them) with an attested copy of WBJEE Admit Card. Based on the recommendation of the said Rajya Sainik Board, a separate Merit List shall be published by the Joint Entrance Examinations Board for consideration of the Central Selection Committee (Engineering & Technology) for counselling and allotment of seats.

### 13.3.3 Reservation of seats for students Merit listed in All India Engineering Entrance Examination (AIEEE), 2010 :

Seats are available for students merit listed in All India Engineering Entrance Examination (AIEEE), 2010 upto the extent of 10% of the approved seats in all the existing Self Financing Engineering & Technology Colleges only of the State. Allotments of seats shall be strictly on the basis of merit and preference of students through the counselling process conducted by the Central Selection Committee (Engineering & Technology). The *eligibility and other criteria as stipulated for JEM – 2010 candidates for admission to degree level Engineering / Technology / Pharmacy /Architecture etc. courses, will also be applicable for AIEEE merit listed candidates.*

### 13.3.4 Reservation of seats for admission under Management Quota :

Self Financing Engineering & Technology Colleges of the State offering B.Tech./ B. Pharm. Courses have been allowed to admit student directly by the Concerned Management from intending students fulfilling the required eligibility criteria as may be specified by the State Govt. in the Higher Education Department in this regard. Seats available for such category are maximum 10% of the approved intake. However, final status for availability of such seats shall be notified in due course.

### 13.3.5 MHRD seats

A few seats are available for students of West Bengal for admission in Engineering & Technology Colleges of other States which are under the jurisdiction of the Ministry of Human Resource Development (MHRD), New Delhi. However, selection of such students shall be on the basis of merit and preference of students in West Bengal Joint Entrance Examination, 2010 through the Central Selection Committee (Engineering & Technology).

Particulars regarding availability of such seats shall be notified by the **Competent Authority** in due course of time.

## 14. Selection for Admission :

Selection for Engineering & Technology courses will be based on the basis of the WBJEE merit / option / with regard to preferences for Colleges/ Universities/ Institutions/ and Branches. Venue, Dates and time will be notified by the Central Selection Committee (Engineering & Technology) in due course. Detailed information will be available from the following websites :

- i) [www.csc-et.org](http://www.csc-et.org)
- ii) [www.wbjeeb.in](http://www.wbjeeb.in)
- iii) [www.banglarmukh.com](http://www.banglarmukh.com)

## 15. Admission to M.B.B.S & B.D.S courses :

### 15.1 Eligibility Criteria for Candidates :

#### 15.1.2 Applicant must be citizen of India.

General Candidates must pass H.S. (10+2) Examination of West Bengal Council of Higher Secondary Education or equivalent examination recognized by the West Bengal University of Health Sciences with individual pass marks in Physics, Chemistry, Biology, English and Vernacular (or any other fifth subject) along with a minimum of 50% marks in Physics, Chemistry and Biology taken together in the



said qualifying examination (10+2). In addition, candidates must have to secure at least 50% marks in Physics, Chemistry and Biological Sciences taken together in the Joint Entrance Examination, West Bengal.

In respect of SC, ST candidates the aforesaid marks will be 40% instead of 50% in the qualifying examination (10+2) as well as in the Joint Entrance Examination.

**15.1.3 Age Restriction :** Candidates must be 17 (seventeen) years of age or above as on **31.12.2010**. There is no upper age limit.

**N.B. :** After examination or admission, if it is found on scrutiny that an applicant is under-age or otherwise ineligible, his/her application for admission will be cancelled outright even if he /she appeared in the Joint Entrance Examination and secured a position in the Merit List. Permission to appear at the Joint Entrance Examination or securing a rank in the Merit List on the basis of the performance in the said examination does not constitute a guarantee in favour of the candidate for his/her admission to a Medical College or Dental College unless he/she has fulfilled all the prescribed requirements as specified earlier.

**15.1.4 Residential requirements :** For admission to the M.B.B.S. & B.D.S. courses in Government and Private Colleges, the candidates must either have been residing in the State of West Bengal continuously at least for last 10 (Ten) years as on 31.12.2009

**OR**

Their parents must be permanent resident of West Bengal having their permanent home address in the State of West Bengal.

Certificate of residence in this respect shall have to be produced in the proforma as printed in the Application Form for JEM-2010 from any of the **Competent Authorities** as given below. The proforma of residential certificate as printed in the form is required to be filled in properly (either 'A' or 'B' as applicable).

The Residential Certificate as applicable (A or B) should be obtained from any of the following competent authorities [i) District Magistrate; ii) Additional District Magistrate; iii) Deputy Magistrate; iv) Deputy Collector; v) Sub-Divisional Officer; vi) Block Development Officer; vii) Superintendent of Police or Additional Supdt. of Police; viii) Chief or Additional Chief Metropolitan Magistrate; ix) Director of Scheduled Caste and Tribe Welfare; x) Commissioner, Additional Commissioner, Joint Commissioner, Deputy Commissioner of Kolkata Police; xi) Deputy Secretary or above to the Government of West Bengal; xii) Heads of the Institutions (located in West Bengal) where the applicants are presently studying or last studied; xiii) Members of Parliament in West Bengal; xiv) Members of West Bengal Legislative Assembly; xv) Sabhapati - Panchayat Samity; xvi) Mayor-in-Council-Municipal Corporation; xvii) Municipal Commissioner and Chairman Borough Committee; xviii) Councillor Municipal Corporation] in whose jurisdiction the candidates reside.

**N. B.** Total seats on All-India through All India Entrance Test will be filled up as per directive of the Hon'ble Supreme Court. For admission to these seats, candidates will have to apply separately to the Central Board of Secondary Education, New Delhi, subsequent to their notification for the purpose. Residential requirement as stated above is also applicable for the Scheduled Caste and Scheduled Tribe candidates of this State of West Bengal only.



*There is no separate reservation on All-India basis except in open seats.*

**15.1.5 Medical Fitness :** Medical certificate will have to be produced during counselling from a Registered Medical Practitioner regarding physical and mental fitness as per proforma provided by Central Selection Committee (Medical). The proforma may be obtained from Central Selection Committee (Medical) against payment of Rs. 20/-.

**N.B. :** Visual handicapped and hearing disablement are not eligible for preferential admission quota.

**15.2 Application form :** One combined application form for admission to M.B.B.S. Course in 10 (Ten) Medical Colleges mentioned at 'A' below and for admission to B.D.S. Course in 5 (Five) Dental Colleges mentioned at 'B' below will be available after publication of Merit List provided by the 'WBJEE Board' between 11 a.m. and 2 p.m. on working days from Central Selection Committee (Medical) at Medical College Campus, Kolkata and all Medical/Dental Colleges in West Bengal on production of receipted original Treasury Challan of Rs.100/- for application form for admission to M.B.B.S./B.D.S. Course under head of account "0210-Medical and Public Health -03 - Medical Education, Training and Research -105 - Allopathy - 005 - Fees for Joint Entrance Examination - 16 - other Fine etc. For Joint Entrance Examination 2006" on column 8a of T.R. form 7 with the words "prices of the application form for admission to 1<sup>st</sup> year M.B.B.S./B.D.S. Courses for the Session 2010-2011." Account Code : 0210 03 105 005- 16. Cheques / Drafts / Postal requests will not be entertained.

**15.3 Selection :** Selection for M.B.B.S. Course and B.D.S. Course will be based on the Rank position in the Merit List of the Joint Entrance Examination having regard to preferences for Medical or Dental Colleges and subject to passing the qualifying examination satisfying the eligibility criteria. Counselling of the Merit Listed candidates for admission to MBBS/BDS courses will be conducted by the Central Selection Committee (Medical). The venue, dates and time of the aforesaid counselling will be notified by the concerned authority in due course.

Selected candidates for both the M.B.B.S. and B.D.S. Course will have to furnish bonds undertaking to serve the State Government anywhere in the State for a minimum period of 3 years after passing.

#### **15.4 INSTITUTIONS :**

##### **A. M.B.B.S. Course :**

1. Medical College Kolkata, 88, College Street, Kolkata – 700 073. Ph. No.(033) 2241-401
2. N.R.S. Medical College, 138, Acharya J. C. Bose Road, Kolkata – 700 014.  
Ph. No. 2244-3213-16
3. R.G. Kar Medical College, 1, Kshudiram Bose Sarani, Kolkata – 700 004.  
Ph. No.(033) 2555-7656/75
4. Calcutta National Medical College, 32, Gorachand Road, Kolkata–700 014.  
Ph. No.(033) 2244-0122
5. Bankura Sammilani Medical College, Bankura – 722 102. Ph. No. (3242) 250981

6. Burdwan Medical College, Burdwan – 713 104. Ph. No. (0342)2558641-45
7. North Bengal Medical College, P.O. Sushrutnagar, Darjeeling – 734 432. Ph. No. (0353) 2585482/83
8. I.P.G.M.E&R., Acharya J.C. Bose Road, Kolkata – 700 020. Ph. No.
9. Midnapur Medical College, Paschim Medinipur. Ph. No. (03222) 274321.
10. K.P.C. Medical College & Hospital, 1F, Raja Subodh Chandra Mullick Road, Jadavpur, P.O- Jadavpur University, Kolkata – 32. Ph.No. (033) 30016119

**B. B.D.S. Course :**

1. Dr.R.Ahmed Dental College, 114, Acharya J.C. Bose Road, Kolkata–14. Ph. No.(033) 2246 6876
2. North Bengal Dental College, Sushrutnagar, Darjeeling – 734 432. Ph. No. (0353) 2585248
3. Gurunanak Institute of Dental Science & Research, 157, Nilganj Road, Kolkata, Panihati, Kolata – 700 114. Ph.No. (033) 2583 9998
4. Haldia Institute of Dental Sciences and Reserch, Haldia, Purba Medinipur – 721 645. Ph. No.(03224) 645704/280110/255662
5. Burdwan Dental College, Power House Para, Burdwan, Dist. Burdwan-713101.

Total intake shall include reserved seats for Govt. of India, Donors, SC/ST/PC and for All India quota seats as per directive of the Supreme Court. Policy for admission in 10 (ten) Medical Colleges including total intake will be notified by the Appropriate Authority in due course of time.

In case of 5 (Five) Dental Colleges, total intake (including reservation, if any) will also be notified by the Appropriate Authority in due course of time.

**Other details & Counselling :** Details information will be available from the Chairman, Central Selection Committee, Medical, Anatomy Building, Medical College, 88, College Street, Kolkata – 700 073 (Phone 2241-4901 to 4905 (Extn.2030)).

16. A Sample of a duly filled in Application Form - JEM-2010 is given in **APPENDIX-VI**.

## APPENDIX – 1

WEST BENGAL JOINT ENTRANCE EXAMINATIONS BOARD

### SYLLABUS FOR JEM - 2010

## PHYSICS

### Mechanics & General properties of matter

- (i) Units and dimensions : Units of measurement, system of units, fundamental and derived units, S I units, dimensional analysis

Methods of measurement: Vernier scale, screw gauge, analysis of errors, significant figures.

- (ii) Scalars and vectors: Addition, subtraction, multiplication of vectors
- (iii) Kinematics in one, two and three dimensions, projectiles, uniform circular motion, centripetal force, centrifugal force, relative velocity
- (iv) **Dynamics** : Newton's laws of motion; inertial frames, uniformly accelerated frame (pseudo-forces), conservation of linear momentum, rocket motion, centre of mass, impulsive forces, friction.
- (v) Work, Power and Energy , conservative and non-conservative forces, conservation of energy, collision(elastic and inelastic).
- (vi) Rotational motion : Torque, Torque, angular momentum and conservation of angular momentum, moment of inertia, radius of gyration, moment of inertia of objects with simple geometrical shapes, rotational kinetic energy and rolling on horizontal surface

**Gravitation** : Laws of gravitation, gravitational field and potential, acceleration due to gravity and its variation, escape velocity, Kepler's laws and planetary motion, motion of satellites, Geostationary orbit.

**Elasticity** : Hooke's law, elastic moduli, Poisson's ratio, elastic energy.

**Hydrostatics and Fluid Mechanics** : Pressure in a fluid, Pascal's law, Archimedes' principle, hydraulic press .

**Surface energy and surface tension, capillary rise.**

**Viscosity, streamline and turbulent motion, critical velocity, Reynold's number, Stoke's law, Bernoulli's theorem.**

**Vibrations** : Simple Harmonic Motion, equation of motion, damped and forced vibrations, resonance, superposition of SHM.

**Wave motion :** Elastic waves, longitudinal and transverse waves. progressive waves, superposition of waves: interference, stationary waves, beats, vibration of strings, air columns, velocity of elastic waves in different media, Doppler effect

**Thermal Physics :** Scales of temperature, thermal expansion of solids, liquids and gases, calorimetry, change of state of matter, latent heat, transition temperature, Transmission of heat: conduction, convection, radiation, Black body radiation, absorptive and emissive powers: Kirchoffs law, Wien's law, Stefan's law, Newton's law of cooling, Kinetic theory : mean free path, pressure of an ideal gas, mean and rms velocity of molecules of a gas, kinetic interpretation of temperature, degrees of freedom, equipartition of energy(statement only) — application to monoatomic and diatomic gases.

**Thermodynamics :** First law of thermodynamics, equivalence of heat and work, intensive and extensive thermodynamic variables, reversible and irreversible processes, specific heats of gases, relation between  $C_p$  and  $C_v$ .

**Optics :** Reflection and refraction at plane and spherical surfaces, total internal reflection, thin lenses, power of a lens, combination of lenses and mirrors, deviation and dispersion by prisms

Simple and compound microscopes, astronomical telescope, human eye: defects and remedies.

Coherent sources, interference of light, Young's double slit.

**Electrostatics :** Coulomb's law, electric field and potential, flux of electric field, Gauss' law, electric field and potential due to an infinite line charge, charged infinite sheet, solid spheres and spherical shells. Electric dipole and field due to dipole.

Capacitance, spherical and parallel plate capacitors, energy stored in a capacitor, series and parallel combination of capacitors,

**Current Electricity :** Electric current, drift velocity and mobility, Ohm's law, resistivity, combination of resistances in series and parallel, combination of cells.

Kirchoffs laws, Wheat stone bridge, Metre bridge, potentiometer.

Heating effect of current, thermoelectricity, see beck and Peltier effect.

Chemical effect of current, Faraday's law of electrolysis, : primary and secondary cells.

**Electromagnetism :** Magnetic effects of Current, Biot Savart's law, magnetic field due to an infinite line charge, circular coil and solenoid, Ampere's circuital law, Lorentz force, Fleming's left hand rule, force between two current carrying conductors, magnetic moment of a current loop, magnetic dipole, torque experienced by a current carrying coil in a uniform magnetic field, galvanometer, current sensitivity, conversion of galvanometer to voltmeter and ammeter.

Magnetic field of earth, tangent galvanometer, magnetic properties of materials : Dia, para and ferromagnet , permeability, susceptibility.

Electromagnetic induction : Magnetic flux, Faraday's laws of electromagnetic induction, Lenz's law, self and mutual induction, , Flemings right hand rule, Alternating current, peak and rms value of alternating current; generator, D.C. motor and transformer

Qualitative idea of electromagnetic wave and its spectrum.

**Modern Physics :** Bohr's atomic model for hydrogen like atom, hydrogen spectrum, x-ray emission, Moseley's law, wave particle duality, de Broglie's hypothesis, photo-electric effect .

Constituents of atoms, isotopes, mass defect, mass-energy equivalence, binding energy. radioactivity -  $\alpha$ ,  $\beta$ ,  $\gamma$  radiation, half life, mean life, fission, fusion.

Energy bands in solids, intrinsic and doped semiconductors, p-n junction diode, rectifier, pnp and npn transistors, common emitter characteristics.

Binary number, AND, OR, NOT, NAND and NOR gates.

## MATHEMATICS

### Algebra

**A.P., G.P., H.P. :** Definitions of A. P. and G.P.; General term; Summation of first n-terms; A.M.and G.M.; Definitions of H.P. (only 3 terms) and H.M.; Finite arithmetico-geometric series.

**Logarithms :** Definition; General properties; Change of base.

**Complex Numbers :** Definition and properties of complex numbers; Complex conjugate; Triangle inequality; Square root of complex numbers; Cube roots of unity; D'Moivre's theorem (statement only) and its elementary applications.

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  $ax^2+bx+c$  ( $a,b,c$  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 co-efficients.

**Infinite series :** Binomial theorem for negative and fractional index. Infinite G.P. series, Exponential and Logarithmic series with range of validity (statement only), simple applications.

**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.

**Probability :** Classical definition, addition rule, conditional probability and Bayes' theorem, independence, multiplication rule.

## Trigonometry

Trigonometric ratios, compound angles, multiple and submultiple angles, general solution of trigonometric equations. Properties of triangles, inverse trigonometric functions.

Co-ordinate geometry of two dimensions

**Basic Ideas :** Distance formula, section formula, area of a triangle, condition of collinearity of three points in a plane.

Polar coordinates, transformation from Cartesian to polar coordinates and vice versa. Parallel transformation of axes, concept of locus, elementary locus problems.

**Straight line :** 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.

**Circle :** 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 . Parametric equation of a circle. Intersection of a line with a circle. Equation of common chord of two intersecting circles.

**Conics :** Definition, Directrix, Focus and Eccentricity, classification based on eccentricity.

**Parabola :** Standard equation. Reduction of the form  $x = ay^2+by+c$  or  $y = ax^2+bx+c$  to the standard form  $y^2 = 4ax$  or  $x^2 = 4ay$  respectively. Elementary properties and parametric equation of a parabola.

**Ellipse and Hyperbola :** Reduction to standard form of general equation of second degree when  $xy$  term is absent. Conjugate hyperbola. Simple properties. Parametric equations. Location of a point with respect to a conic.

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

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

Second order derivative.

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

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

**Differential Equations :** Formulation and solution of differential equations of the forms.

- 1)  $dy / dx = f(x).g(y)$
- 2)  $dy / dx = f(y/x)$
- 3)  $dy / dx = (ax+by) / (cx+dy)$
- 4)  $dy / dx = (a_1x+b_1y+c_1) / (a_2x+b_2y+c_2)$ ,  $(a_1/a_2 = b_1/b_2)$
- 5)  $dy / dx + p(x)y = Q(x)$
- 6)  $d^2y / dx^2 + p_1 dy/dx + p_2y = 0$  with  $p_1$  and  $p_2$  constants.
- 7)  $d^2y/dx^2 = f(x)$

**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.

## BIOLOGICAL SCIENCES

**Unit of Life :** Definition of life, Cell as the basic unit of life. Cell theory, Prokaryotic and Eukaryotic cell – structure and differences.

**Ultrastructure and functions of cellular components :** Cell wall, Plasma membrane, Plastid, Endoplasmic reticulum, Golgi bodies, Mitochondria, Ribosomes, Lysosomes, Nucleus, Centrosomes, Cilia, Flagella.

**Microscopy :** Components and principles of Simple and Compound Microscope;

**Electron Microscope :** Basic functional principles.

**Physical and Chemical principles involved in maintenance of life processes :** Diffusion, Osmosis, Absorption, Osmoregulation.

**Biomolecules :** Classification and structural properties of carbohydrates, lipids, aminoacids, proteins and nucleic acids.

**Carbohydrates :** Monosaccharides, digosaccharides, and polysaccharides (starch, glycogen, cellulose).

**Proteins :** Simple (albumins, globulins, collagen) and conjugated proteins (only examples).

**Nucleic acids :** Structure of DNA, RNA, types of RNA.

**Enzymes :** Definition & properties, Examples; Mechanism of Action, Allosterism and Regulation.

**Chromosomes and Cell Division :** Morphology of **of chromosomes; Euchromatin and Heterochromatin.** Nucleic acid as genetic material (Examples: Bacterial Transformation and Viral Transduction).

**Brief idea of Polytene Chromosomes :** Cell cycle and phases (excluding control mechanism). Characters of malignant cell; Process & significance of Meiosis.

**Genetics :** Laws of Heredity : (Monohybrid and dihybrid crosses; Mendel's laws). Back cross, Test cross, Linkage, Crossing over, Sex linked inheritance – Colour blindness, Haemophilia.

**Mutation :** Definition and Types; Replication of DNA, Transcription and Translation (Brief idea).

**Origin, Evolution and Diversity of Life :** Haldane and Oparin's concept on origin of life. Modern concept of Natural selection, Biological Species concept.

**Human evolution :** An outline.

**Taxonomy and Classification :** Definition; Importance of Taxonomy, Binomial Nomenclature, Law of Priority (Homonym & Synonym).



**Concept of Biodiversity :** Definition of Biodiversity ; Genetic diversity; Species diversity and Ecosystem diversity. Five kingdom classification (only distinct characters). Salient features of major animal phyla with common examples, classification of Chordates (up to Sub Class) with distinctive characters only.

**Population Biology :** Concept of population growth (logistic and exponential) and population control.

**Ecosystem :** Concept of ecosystem and Biosphere, Wetland.

Brief idea of Ecological pyramids, Energy flow, Biogeochemical cycle (concept only).

**Environmental pollution :** Air, water and noise pollution – sources effects and probable control strategies; Biomagnification and Bioaccumulation. Cause of Dyslexia, Minamata and Etai etai diseases. Green house effect, BOD, COD, Acid rain and Ozone hole.

**Virus and Bacteria :** Morphological characteristics of Bacteriophage (T2), Plant virus (TMV); Animal virus (influenza), Bacterial cell (*E. coli*).

**Staining :** Gram staining for bacteria.

**Biotechnological application of microbes :** (a) Agricultural – *Rhizobium* and other Nitrogen fixing bacteria, Biofertilizers and Bio-pesticides ; (b) Industrial – Production of curd; tanning and brewery; synthesis of antibiotics, vitamin. (c) Cloning of microbial genes.

**Tissue and tissue system :** (a) Plant Tissues – Meristematic and permanent (types with characterization and function). (b) Animal Tissue – outline classification and examples.

**Functions of life :**

**Photosynthesis :**

Major photosynthetic pigments, outline concept of light and dark reaction phases, basic idea of bacterial photosynthesis, C<sub>2</sub>, C<sub>3</sub>, C<sub>4</sub> pathways, CAM (in brief), photorespiration.

**Respiratory System :**

- (a) Definition of respiration, Mechanisms of glycolysis, Krebs's cycle (Flow chart only; calculation for ATP, CO<sub>2</sub> & H<sub>2</sub>O) ; Outline idea of Electron Transport system, Relationships of photosynthesis and respiration. (b) Respiratory system in human : Respiratory tract, Mechanism of breathing, Role of intercostals muscles and diaphragm;

Significance of physiological and anatomical dead space.

Tidal volume, inspiratory and expiratory reserve volumes, residual volume, vital capacity. Composition of inspired, expired and alveolar air. Common respiratory diseases – definition and causes – Asthma, Tuberculosis, Hypoxia, Anoxia, Apnoea, Dyspnoea.

### **Cardiovascular System & Blood :**

Anatomy of Heart – junctional tissues of the heart; origin and propagation of cardiac impulse. Histological structures of arteries, veins and capillaries.

Cardiac cycle – Atrial and ventricular events only; cardiac cycle time, Heart sound.

Cardiac output – definition, Stroke and Minutes volume.

**Blood Pressure :** factors controlling & measurement.

Blood – Composition and functions of blood.

Blood coagulation and anticoagulants, Blood group and Rh factor, Blood Transfusion, Lymph and tissue fluid formation and functions, Portal circulation.

**Nutrition and Digestive System :** Basic constituents of food and their nutritional significance. Vitamins – dietary sources, functions and deficiency symptoms of water and fat soluble vitamins. Structure and functions of the alimentary canal and the digestive glands. Functions of the digestive juices (saliva, gastric juice, pancreatic juice, intestinal juice), Biles.

Digestion and absorption of carbohydrates, lipids and proteins. Diseases – Peptic and Gastric ulcers, Gastritis; fasting and obesity.

**Metabolism :** Definition; B.M.R. – Controlling factors; elementary idea of metabolic pathways; glycogenesis, glycogenolysis, gluconeogenesis, Oxidation of fatty acids, Ketone body formation and its significance.

Deamination, Transamination and Decarboxylation of aminoacids (definition only).

**Excretory System :** Histology and function of the nephron (brief idea)

Normal and abnormal constituents of urine.

**Nervous and Muscular system :** Brief outline of human brain structure.

**Cranial Nerves :** Distribution and Function. Spinal cord – Structure and major functions, Reflex arc (types) and reflex action : Conditional and unconditional reflexes.

**Autonomic :** sympathetic and parasympathetic (definition only) nervous system.

**Synapse :** Structure and mechanism of synaptic transmission.

Different types of muscles and their structure, properties of muscles

(i) Excitability (ii) Contractility (iii) All or none law (iv) Refractory period (v) Summation of stimuli (vi) Tetanus (vii) Rigor mortis; Mechanism of muscle contraction.

**Endocrine system and animal hormones :**

Definition of endocrine glands and hormones, functions of hormones released from (i) pituitary (ii) thyroid (iii) pancreas (iv) adrenal (v) gastrointestinal gland, An outline mechanism of action of protein & steroid hormones.

Causes and symptoms of Acromegaly, Diabetis insipidus, Diabetis mellitus, Goiter, Cushing's disease.

## Growth, Reproduction, and Ageing :

### A. In Plants :

Different parts of a typical flower (China rose). Types of flower : regular and irregular, actinomorphic, zygomorphic. Aestivation in Musaceae & Malvaceae. Floral formula : Definition, symbols used in floral formulae in Musaceae (e.g. Banana) and Malvaceae (eg. China rose) ; Pollination – Definition, self and cross pollination; Merits and demerits of self and cross pollination. Fertilization – Process of double fertilization. Dispersal of fruits and seeds – Types with examples. Phases and factors of Growth, Differences between growth and development, Abscission senescence, ageing and growth of seeding and the role of gibberellic acid.

### B. In Animals :

Primary and secondary sex organs and secondary sex characters – Testis – Histology, Functions of Testosterone. Spermatogenesis (outline). Ovary – Histology : Functions of estrogen and progesterone; Oogenesis (outline); structure of mature Graafian follicle.

Menstrual cycle (brief idea). Fertilization and Implantation.

**Immunology :** A brief idea of antigen and antibody. Elementary knowledge of inherited, acquired, humoral, cell mediated immunity. Active and passive immunity. Prevention of AIDS and Hepatitis B.

## Medical, Agricultural and Economic Zoology :

A. Outline idea of diseases, their causative organism, mode of infection, symptoms and preventive measures of :

- (i) Malaria
- (ii) Filariasis
- (iii) Ascariasis

Distinguishing features of Culex, Anopheles and Aedes

Life cycle and comparative study of Culex and Anopheles;

Causative agents of encephalitis and kalaazar and control of their vectors.

B. Characteristic features of major and minor carps and examples of exotic carps. Mechanism of induced breeding – hypophysation.

Composite culture of carps, common diseases of carp – Gillrot, fin rot and Dropsy.

Definition of pest, Damage symptoms and control of *Scirpophaga incertulus* and *Leptocorisa acuta*.

C. Poultry – Types of poultry birds ; high yielding varieties of poultry birds. Species of honey bees in India and different castes in a colony. Composition and uses of honey.

Chemical composition of silk, types of silk and silk worms.

Life cycles of mulberry silk worm. Structure of silk gland.

Symptoms of Flacherie, Muscardine, Grassarie and Pebrine.

### **Application of Biology :**

Pesticides and Biological Pest Control – Benefit and hazards, Basic principles of *ex situ* and *in situ* conservation. Red Data Book, Green Data Book.

Role of phytohormones in horticulture and agriculture.

Hybridization in plants – Definition and techniques.

Idea about plant cell and tissue culture – Micropropagation.

Principles and application of transgenic plants and animal, Test tube baby.

### **Biomedical Engineering :**

Application - ECG & EEG

Imaging – USG, CT Scan, X-ray, MRI

Therapeutic - Pacemaker, Dialyzer.

## **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.

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 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); Fajan's Rule.

Directionality of covalent bonds, shapes of poly-atomic molecules (examples); Concept of hybridization of atomic orbitals (qualitative pictorial approach) :  $sp$ ,  $sp^2$ ,  $sp^3$  and  $dsp^2$ .

Molecular orbital energy diagrams for homonuclear diatomic species – bond order and magnetic properties.

Valence Shell Electron Pair Repulsion (VSEPR) concept (elementary idea) – shapes of molecules. Concept of resonance (elementary idea), resonance structures (examples). Elementary idea about electro negativity, 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.

Double salts and complex salts, co-ordination compounds (examples only), co-ordination number (examples of co-ordination number 4 and 6 only).

### 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 Waal's 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 vapourization; Second law of thermodynamics; Entropy; Free energy; Criterion of spontaneity.

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

**Chemical Dynamics** – Factors affecting the rate of chemical reactions (concentration, pressure, temperature, catalyst). 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).

### **Solubility and Solubility Products.**

Common ion effect (no numerical problems).

**Redox Equilibria** – Oxidation-Reduction reactions as electron transfer processes, oxidation numbers, balancing of redox reactions by oxidation number and ion-electron methods.

Standard electrode potentials ( $E^\circ$ ), Electrochemical series, feasibility of a redox reaction.

Significance of Gibb's equation :  $\Delta G^\circ = -nF\Delta E^\circ$  (without derivation), no numerical problems.

Redox titrations with (examples); Nernst equations (Numerical problems).

### **Chemistry of Non-metallic Elements and their Compounds**

Carbon – occurrence, isotopes, allotropes (graphite, diamond, fullerene); CO and CO<sub>2</sub> production, properties and uses.

Nitrogen and Phosphorus – occurrence, isotopes, allotropes, isolation from natural sources and purification, reactivity of the free elements. Preparation, properties, reactions of NH<sub>3</sub>, PH<sub>3</sub>, NO, NO<sub>2</sub>, HNO<sub>2</sub>, HNO<sub>3</sub>, P<sub>4</sub>O<sub>10</sub>, H<sub>3</sub>PO<sub>3</sub> and H<sub>3</sub>PO<sub>4</sub>.

Oxygen and Sulfur – 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).

### **Halogen**

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.

### **Chemistry in Industry**

Large scale production (including physicochemical principles where applicable omitting technical details and uses of individual items).

**Heavy Chemicals :** Sulfuric acid (contact process), Ammonia (Haber's process), Nitric acid (Ostwald's process), sodium bi-carbonate and sodium carbonate (Solvey process).

Polymers, Polythene, Nylon-66, rubber from natural source, vulcanization.

Electrochemicals – sodium hydroxide, chlorine, bleaching powder as by-products.

Fuel Gases – LPG, CNG.

Silicon carbide and silicones.

### Environmental Chemistry

Common modes of pollution of air, water and soil. Ozone layer, ozone hole – important chemical reactions. Green House effect; Smog; Pollution of water by domestic and industrial effluents; Pollutants–pesticides, fertilizers and plastics.

### 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  $\alpha$ -dicarbonyl compounds, acidity and basicity of simple organic compounds.

### Aliphatic 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.

Alkyl halides – 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).

Alcohols – Preparation 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°, 2° and 3° amines (Hinsberg method); Reaction with  $\text{HNO}_2$ ; Carbyl amine reaction.

### Aromatic Compounds

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

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  $\text{NO}_2$ , diazocoupling and reduction.

**Haloarenes** – Nucleophilic substitution, cine substitution (excluding mechanism).

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 noninterfering Acid and Basic Radicals by dry and wet tests from among :

(a) Acid Radicals :  $\text{Cl}^-$ ,  $\text{S}^{2-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{NO}_3^-$ ,  $\text{CO}_3^{2-}$

(b) Basic Radicals:  $\text{Cu}^{2+}$ ,  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Fe}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$

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 - II

### Guideline for filling in the Application Form

The applicant is required

- i) To go through the Information Brochure very carefully and to get acquainted with all the requirement.
- ii) To satisfy eligibility and other criteria in order to appear in the examination.
- iii) To ensure that while filling in the Application Form in English Capital Letters, proper care be taken to the fact that one letter is written clearly within one box only and there is no overlapping in any case.
- iv) To send the application form complete in all respect through **Speed Post** only within prescribed date mentioned in the Information Brochure.
- v) To write complete permanent address with postal pin code and Police Station in the Application Form in own hand writing in CAPITAL LETTERS in English only.
- vi) To note that the circles are to be darkened with Black/Blue Ball Pen only.
- vii) To note that overwriting, cuttings, erasing in the Application Form and incomplete Application Form may lead to rejection of the form. Any error arising on this account shall be the responsibility of the candidate.
- viii) To note that the duly filled in Application form should be inserted in the printed window envelop supplied with the application kit in such a way that the Bar Code printed on the right hand portion of the Application form (side-1) is clearly visible from the window.
- ix) To note that the Application Form duly filled in should be sent to the **Member Secretary, West Bengal Joint Entrance Examinations Board, AQ-13/1, Sector-V, Salt Lake, Kolkata – 700 091** in the **printed window envelop** supplied with the Application Kit through **Speed Post** only so as to reach positively by **12.01.2010**.

No Application Form will be received by hand or through other agencies.

Forms received after the last date will not be processed.

- x) **To note that he/she has retained a Photocopy of his/her filled in application form.**  
If a candidate submits more than one Application Form without due intimation to the Authority, his/her candidature shall be liable to be cancelled.

**Filling in of the Application form**

For Sl.No. 1) Candidate should write his/her Name in CAPITAL LETTERS as given in Madhyamik or equivalent Examinatin (10th standard).

Example :- Suppose candidate's name is **ROHIT KUMAR DAS**

First Name 

R	O	H	I	T		
---	---	---	---	---	--	--

Middle Name 

K	U	M	A	R		
---	---	---	---	---	--	--

Last Name 

D	A	S				
---	---	---	--	--	--	--

Sl. No. 2a) candidate should write his/her Father's name / Mother's name / or \*\*Guardian's name (\*\*If parents are not alive) in capital letters: One Box should be left blank between each part of the name

Example – suppose candidate's Father's name is

SUMAN KANTIDAS

S	U	M	A	N		K	A	N	T	I		D	A	S						
---	---	---	---	---	--	---	---	---	---	---	--	---	---	---	--	--	--	--	--	--

Sl.No.2b) Candidate should mention the relationship with the person indicated at Sl.No.2a)

Example – if the relationship is Father

F	A	T	H	E	R		
---	---	---	---	---	---	--	--

Sl.No.3 – Write complete permanent address in capital letters including the name of the Police Station and postal pin code.

Sl.no. 4 – The candidate should paste his/her recent colour photograph (2.5 cm X 3.5 cm) with white background inscribing name of the candidate and date on photograph in the box provided which should not be attested, stapled or pinned. The Form Number and the Name should be written on the reverse side of the photograph. The photograph should be pasted with gum in such a manner that the adhesive does not overflow.

Sl.No.-5 –Write date, month and year of your Date of Birth in the appropriate boxes use numbers 1- to 31 for the date 1 to 12 for the month and last two digits for the year of birth.

Example : - Suppose Date of Birth is 20th January 1990

DD	MM	YY
2   0	0   1	1   9   9   0

- Sl.No.-6- The candidate should darken the appropriate circle in respect of the religion, he/she belongs to.
- Sl.No.-7- The candidate should darken the appropriate circle in respect of Gender.
- Sl.No.- 8- The candidate, if physically challenged should darken the circle against 'Yes' and if not against 'No'.
- S.l.No.-9-The candidate should write his/her Nationality in Capital letters.
- Sl.No.-10- The candidate should write his/her permanent address district code in the boxes [for district code see **APPENDIX – IV** of the Information Brochure].
- Sl.No.11- The candidate should darken the appropriate circle in respect of his/her category [for example Gen, SC, ST]
- Sl.No.-(12)- The candidate should darken the appropriate circle in respect of the State he/she belongs to.
- Sl.No.-(13)- The candidate should put his/her full signature (Not in capital letters) at the box provided.
- Sl.No.14a)- The candidate should write Name and Address of the School/Institution from where he/she passed or appeared in H.S.(10+2)/equivalent examination along with telephone No of the concerned school/Institution (with STD code) and postal pin code of the place where the school/Institution is situated.
- Sl.No.14b)- The candidate should write Name and Address of the School/Institution from where he/she passed the Madhyamik or equivalent examination (10<sup>th</sup> standard) along with telephone No of the concerned school/Institution (with STD code) and postal pin code of the place where the School/Institution is situated.
- S.No.15- The candidate should darken the appropriate circles in respect of the postal pin code of his/her permanent address as written in Sl.No.(3). See the sample copy of a filled in application form.
- Sl.No-16a) The candidate should write the name of the Board/Council which conducted the H.S.(10+2)/equivalent examination he/she passed/appeared. He/she should also write his/her Registration No. of the concerned Board/Council with year of registration in the appropriate boxes.
- Sl.No.16b)- The candidate should write the name of the Board/council which conducted the Madhyamik/equivalent examination (10<sup>th</sup> standard) which he/she has passed and he/she should also write the Roll No of the concerned examination in the appropriate boxes.
- Sl.No-17A)& B)- Candidate desirous of seeking admission to Govt. Engineering / Technology Colleges, Govt. Medical / Dental Colleges as well as to private Medical and Dental Colleges should furnish Domicile certificate either 'A' or 'B' (as applicable) by one of the competent authorities as mentioned in the Information Brochure vide Clause No. 3.3.

The candidate should also paste his/her recent colour photograph (2.5 cm x 3.5 cm) with white background inscribing Name of the candidate and date on photograph in the appropriate box either in 'A' or in 'B' (as applicable) which should not be attested, stapled or pinned. The Form number and the name should be written on the reverse side of the Photograph.

The photograph should be pasted with gum in such a manner that the adhesive does not overflow.

Sl.No18- The candidate should read the statement in the form of declaration mentioned at a) and b) carefully and then put his/her full signature in the appropriate space mentioning date and place the declaration should also be countersigned by his/her Father/Mother/\*Guardian (\* in case parents are not alive) mentioning date and place.

Sl.No –19a) The candidate should put his/her left thumb impression (LTI) in blue or black indelible ink in the space provided.

Sl.No. 19b)- The candidate should put his/her full signature (not in capital letters) in the appropriate box.

Sl.No. 19c)- Father /Mother /\* Guardian (\*in case parents are not alive) of the candidate should put his/ her signature (not in capital letters) in the appropriate box.

Sl.No.20a)- The candidate should put his/her left thumb impression (LTI) in blue or black indelible ink and also write his/her full name in the appropriate spaces provided.

Sl.No.20b)- Do not put left thumb impression (LTI) on the space provided at the time of filling in of the application form. It should be kept blank. .

Sl.No.21- The space is provided for Office Use only. It should be kept blank.

Sl.No.- 22) The candidate should paste his/her recent colour photograph (2.5 cm x 3.5 cm) with white background inscribing name of the candidate and date on photograph in the box provided which should not be attested, stapled or pinned. The form no. and name should be written on the reverse side of the photograph. The photograph should be pasted with gum in such a manner that the adhesive does not overflow.

The candidate should also put his/her full signature (not in capital letters) in the box provided.

Sl.No-23a) & 23b) The candidate should write his/her name and full mailing address with postal pin code in the appropriate place in his/her own hand writing.

The candidate should paste his/her recent colour photograph (2.5 cm x 3.5 cm) with white background inscribing name of the candidate and date on photograph in the box provided which should not be attested, stapled or pinned. The form no. and name should be written on the reverse side of the photograph. The photograph should be pasted with gum in such a manner that the adhesive does not overflow.

The candidate should also put his/her full signature (not in capital letters) in the box provided.

## APPENDIX – III

### **Procedure to be followed in the conduct of Examination :**

1. The Examination Hall will be opened 15 minutes before the commencement of the test. Candidates are expected to take their seats immediately after the opening of Examination Hall. If the candidates do not report in time, they are likely to miss some of the general instructions to be announced in the Examination Hall.
2. After occupying their seats they must write their Names, Enrolment no., Index no and Question Booklet no. of the MCQ type of Question at the appropriate places on OMR Answer Sheet and Enrolment No. and Index No. on the Short type Question Answer Booklet
3. Candidate must bring with them i) Admit card (JEM-2010), ii) Admit card (H.S. or equivalent/ Madhyamik (10 std.) or equivalent examination, iii) Black / Blue Ball Point Pen.
4. Candidates must show on demand the Admit Card (JEM-2010) for admission to the Examination Hall. A candidate who does not possess the Admit Card issued by the Board shall not be allowed to enter in the Examination Hall by the Center-in-Charge.
5. A seat indicating Index Number will be allocated to each candidate. Candidates must find out and occupy their allotted seats.
6. Candidates are not allowed to carry any textual material, printed or written, bits of papers or any other material except those listed under Sl.No.-3 inside Examination Hall.
7. Calculators, Slide Rules, Log Tables, Electronic Watches with facilities of Calculator, Cellular Phones, Pagers, are not allowed in the Examination Hall. Possession of such devices during the Examinations may lead to cancellation of the paper besides seizing of the same.
8. No candidate, without the special permission of the Centre-in-Charge or the invigilator concerned, will leave his/her seat or Examination Hall until the duration of examination for a paper is over. Candidates should not leave the hall without handing over their OMR sheet and Answer Booklet to the invigilator on duty. Otherwise this will lead to cancellation of the concerned papers.
9. It is to be noted carefully that the candidates must write the MCQ type “Question Booklet No.” at the indicated place both on the OMR Answer Sheet and Attendance Sheet during examination. Otherwise his/her OMR Answer sheet in the concerned subject will be outright cancelled.
10. Candidates shall maintain silence and attend to their question paper only. Any conversation or gesticulation or disturbance in the examination hall shall be deemed as misbehavior. If a candidate is found adopting unfair means, his/her candidature shall be cancelled and he/she will be liable to be debarred from taking examination either permanently or for a period according to the nature of offence.
11. **If a candidate is found impersonating, his/her candidature will be cancelled outright and the concerned examinee will be handed over to the Police.**

## APPENDIX – IV

### West Bengal :

District (West Bengal)	Code	District (West Bengal)	Code	District (West Bengal)	Code
Bankura	71	Hooghly	78	Murshidabad	85
Birbhum	72	Howrah	79	Nadia	86
Burdwan	73	Jalpaiguri	80	Purulia	87
Coochbehar	74	Kolkata	81	24 Parganas North	88
Darjeeling	75	Malda	82	24 Parganas South	89
Dinajpur Dakshin	76	Medinipur Paschim	83		
Dinajpur Uttar	77	Medinipur Purba	84		

### Other States :

District (Other States)	Code
Districts in Tripura	90
Districts in Other States	91

## APPENDIX – V

Abbreviation of the branches (Engg./Tech./Pharm./Arch.) and their full names :

Sl. No.	Full Name of the Course	Abbreviation	Sl. No.	Full Name of the Course	Abbreviation
1	Agricultural Engineering	AG	16	Electronics & Communication Engineering/ Electronics and Telecommunication Engg.	ECE
2	Applied Electronics / Electronics Instrumentation Engineering	AEIE/EIE	17		
3	Architecture	AR	18	Food Technology	FT
4	Automobile Engineering	AE	19	Information Technology	IT
5	Apparel Production Management	APM	20	Jute Technology	JT
6	Bio-Medical Engineering	BM	21	Jute & Fiber Technology	JF
7	Bio-Technology	BT	22	Leather Technology	LT
8	Ceramic Technology	CT	23	Marine Engineering	MR
9	Chemical Engineering	CH	24	Mechanical Engineering	ME
10	Civil Engineering	CE	25	Metallurgical Engineering	MT
11	Computer Sc. & Engineering/ Computer Sc. & Technology	CSE/CST	26	Mining Engineering	MN
12	Instrumentation & Control Engineering	ICE	27	Pharmaceutical Engineering	PH
13			Construction Engineering	COE	28
14	Dairy Technology	DT	29	Power Engineering	PW
15	Electrical Engineering	EE	30	Production Engineering	PE
			31	Textile Technology	TT