



काष्ठ विज्ञान एवं प्रौद्योगिकी संस्थान
INSTITUTE OF WOOD SCIENCE AND TECHNOLOGY
(भारतीय वानिकी अनुसंधान एवं शिक्षा परिषद्)



(Indian Council of Forestry Research and Education)
(पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार, की एक स्वायत्त निकाय)
(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Govt. of India)
पी.ओ. मल्लेश्वरम/P.O. Malleswaram, बेंगलुरु/Bengaluru – 560 003

No. 1-11/2019-20/IWST/Estt/2661

Dated: 19-11-2019

RECRUITMENT NOTIFICATION

Applications are invited from eligible candidates in the prescribed format for the following posts in the Institute of Wood Science & Technology (IWST), Bengaluru. These posts carry all India transfer liability in ICFRE institutes/Centers. Application for the posts of Technical Assistant (Category-II), Lower Division Clerk (LDC), Technician (Category-I) and Multi-Tasking Staff (MTS) in the prescribed format should be submitted separately. The detailed description of different category of posts is as given below:

S. No.	Name of the post	Pay Matrix - Level	No. of posts	Age Limit as on 16-01-2020 (i.e. the last date of receipt of applications)	Category	Educational qualification
1	Technical Assistant (Category-II) (Chemistry)	Pay Matrix Level – 5 of 7 th CPC	01	Not below 21 years or exceeding 30 years	EWS	Bachelor degree in Science in the relevant field/specialization or equivalent (e.g. B.Tech in Chemical Engineering) from a recognized University
2	Lower Division Clerk (LDC)	Pay Matrix Level – 2 of 7 th CPC	01	Not below 18 years or exceeding 27 years	EWS	(i) 12 th class certificate from recognized board. (ii) A typing speed of 35 words per minute in English OR 30 words per minute in Hindi on Computer.
3	Technician (Category I) (Plumber)	Pay Matrix Level – 2 of 7 th CPC	01	Not below 18 years or exceeding 30 years	Unreserved	Matriculation from a recognized board with ITI certificate in relevant trade or Certificate course from a Govt. recognized Institute
4	Technician (Category I) (Carpenter)	Pay Matrix Level – 2 of 7 th CPC	01	Not below 18 years or exceeding 30 years	Unreserved	Matriculation from a recognized board with ITI certificate in relevant trade or Certificate course from a Govt. recognized Institute
5	Multi-Tasking Staff (MTS)	of Pay Matrix Level – 1 of 7 th CPC	12	Not below 18 years or exceeding 27 years	02 – Unreserved 04 – OBC 03 – SC 01 - ST 02 - EWS	Essential: 10 th Standard pass certificate from recognized board/ recognized school Desirable: 3 years or more experience in relevant trade

General Instructions:

1. Interested candidates may submit their applications to “**The Director, Institute of Wood Science & Technology, 18th Cross, Malleswaram, Bengaluru-560 003**”. **The last date of receipt of application is 16-01-2020.** The last date of receipt of applications for candidates residing in Andaman & Nicobar Islands and Lakshadweep will be **31-01-2020**. Applications received after closing date will not be entertained under any circumstances. This Institute shall not be responsible for any postal delay or loss during the postal transit. **The crucial date for determining the age limit shall be the last date of receipt of application i.e. on 16-01-2020.**
2. Only Indian Citizens are eligible to apply.
3. If a candidate wishes to apply for more than one post, he/she should submit separate application with required fee and other documents. Application for more than one post in a single application will not be entertained.
4. Age relaxation for SC/ST/OBC candidates is as per Govt. of India orders issued from time to time. No age relaxation is allowed to SC/ST/OBC candidates applying against the unreserved posts.
5. Age relaxation for Govt. servants in accordance with the instructions or orders issued by the Government of India from time to time. There is no upper age limit for the employees of ICFRE.
6. Candidates applying under EWS category will be considered only subject to production of recent EWS certificate from the competent authority
7. Apart from affixing one photograph on the application form, the candidates are required to attach **Two additional identical photograph** separately alongwith each application form, duly stapled on the first page of the filled in application form, with their name & post written in capital letters on the back side of the photographs.
8. The application duly completed in all respects shall be submitted along with the **self attested photocopies of certificates** of educational and technical qualification, age proof, claim of belonging to SC/ST/OBC/EWS etc.
9. Candidates are required to pay a **non-refundable application fee of Rs.300/- (Rs. 200/- Application fee and Rs. 100/- Processing fee) through Demand Draft from any nationalized bank drawn in favour of Director, Institute of Wood Science and Technology payable at Bengaluru.** No other mode of payment of application fee is acceptable.
10. If the candidate wishes to apply for more than one post, each application should contain separate Demand Draft of Rs.300/-, self-attested copies of the certificates and extra photographs.
11. The PH/Women candidates are exempted from payment of application fee. The SC/ST candidates are exempted from payment of application fee only against the reserved posts. However, the processing fee of Rs. 100/- has to be paid through Demand Draft from any nationalized bank drawn in favour of Director, Institute of Wood Science and Technology payable at Bengaluru by all the category candidates.
12. All the applications received within stipulated date in response to this advertisement shall be considered for short-listing by the screening committee and only the candidates recommended by the screening committee will be called for appearing in the written examination. The decision of the Director, IWST on short-listing will be final and no correspondence will be entertained in this regard.
13. No interview will be conducted for advertised posts.
14. Govt. servants applying for the above posts should forward their applications “through proper channel” and should enclose “**No Objection Certificate**” (Annexure - A) obtained from their Appointing Authority. They may send an advance copy of the application by the due date, if they so desire. The forwarding authority should ensure that in the event of selection of the official, he/she should be in a position to relieve / spare the official within the time specified in the offer of appointment.
15. **The post applied for may be indicated on the top of envelope specifically in capital letters.**

16. Applications received unsigned/without additional photographs/incomplete applications in any respect/applications submitted not as per the prescribed proforma/ without application fees/not filled correctly/applications received without Xerox copies of the self attested certificates in connection with the qualification, caste, date of birth, experience etc. are liable to be rejected and the onus of such rejection would be on the candidates.
17. The selection of the post of Lower Division Clerk (L.D.C.) will be made on the basis of Written Test and Typewriting Test in English/Hindi.
18. Date and Time of written examination & Typing Test will be intimated later on to the shortlisted candidates, separately.
19. Mere fulfilling of the minimum qualifications and experience requirements shall not vest any right in the candidate for being called for written examination.
20. The candidates selected on direct recruitment will be governed by the provisions of the New Pension Scheme introduced by the Govt. of India w.e.f. 01-01-2004.
21. SC/ST/OBC/EWS Certificates in prescribed format issued by the Competent Authority should be submitted in support of claim belonging to their category. In case the certificate is in a local vernacular language, its English translation duly attested by a Gazetted Officer should be submitted.
22. The mere fact that a candidate has been called for written examination does not imply that his/her candidature has been finally cleared by IWST. The candidate must note that if his/her ineligibility is detected at any stage before or after the written and other examinations or if the conditions prescribed in the Rules and instructions given in the Advertisement or any other additional information / documents called for at any stage are not complied with, within the time specified therein, his/her candidature will be liable for cancellation. This Institute will not be responsible for cancellation of candidature on this account.
23. No correspondence and interim enquiries will be entertained in any manner.
24. Canvassing in any form for/by the applicant shall not be entertained and will disqualify his/her candidature.
25. **The Director, IWST reserves the right to increase or decrease the number of posts or not to fill any or all the advertised posts without assigning any reason.**
26. Legal disputes, if any, shall be subject to the jurisdiction of the Competent Court at Bengaluru, Karnataka.

Sd/-
Director
Institute of Wood Science & Technology
Bengaluru

There will be an objective type of question papers comprising of 100 Multiple Choice Questions (MCQ). Questions of relevant subject for the post of Technical Assistant will be according to Graduation level. Duration of exam will be 03 hours. The details of exam pattern for various posts are as follows:

Sl. No.	Name of the Post to be filled	Exam Subject	Marks
1.	Technical Assistant (Category-II) (Field/Lab)	General Awareness & Reasoning	20
		General English & General Science	20
		Arithmetic	20
		Relevant subject (Chemistry)	40
		Total	100
2.	Technician (Category-I) Trade Test: Over and above the written test based on the aforementioned syllabus, this category of candidate shall also have to undergo a trade test based on their respective trade as may be decided by the competent authority.	General Awareness	20
		Mental Ability & Reasoning	20
		Arithmetic	20
		General English	20
		Basic Science (Physics, Chemistry, Biology)	20
		Total	100
3.	Lower Division Clerk (LDC)	Quantitative Aptitude	25
		English Language	25
		General Awareness	25
		General Intelligence	25
		Total	100
4.	Multi-Tasking Staff (MTS)	General Intelligence & Reasoning	25
		General Awareness	25
		Numerical Aptitude	25
		General English	25
		Total	100

Note:

1. Each correct answer will carry one mark. 1/4th mark will be deducted for each incorrect/wrong answer.
2. In case of equal marks/ tie up marks in the written examination, general rules will be followed to finalize the merit list.

Application for the Post of Technical Assistant (Category-II)

1. Advertisement No. _____
2. Full Name of the candidate (in Block Letters): _____
3. Father's / Husband's Name: _____
4. Nationality: _____
5. Correspondence Address (In Block Letters) _____

- PIN Code _____ Mobile Ph. No. _____ Email ID _____

Paste
Recent passport
size
Photograph

6. Amount of Application Fee; Bank Demand Draft No. & date: _____

7. Whether candidate belongs to EWS Category: **Yes / NO**

(If yes, please attach self-attested copy of the latest EWS Certificate issued by the competent authority)

8. Sex : Please (√)

Male	Female

9. (a) Date of Birth: Date: _____ Month: _____ Year: _____

(Attach copy of the 10th Class/SSLC/Matriculation Certificate)

(b) Age as on 16-12-2019 _____ Years _____ Months _____ Days

10. Educational qualification (Please attach self attested copy of certificates and Mark-sheets):

Examination passed (SSLC onwards)	Subjects	Percentage	Name of the recognized Board/University	Year of passing

11. Experience, if any (Attach self attested copy of the experience certificate):

12. Any additional information:

13. List of documents attached:

14. Whether the candidate is under any contractual obligation to serve Central/State Govt./Any other Public Sector Undertaking or Autonomous Body and if so, give details (attach No Objection Certificate)

DECLARATION

I hereby declare that all the facts mentioned in this application are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or not satisfying the eligibility criteria according to the requirements of the relative advertisement, my candidature/appointment is liable to be cancelled / terminated.

Place:

(Signature of the Candidate)

Date:

Application for the Post of Technician (Category-I)

1. Advertisement No. _____
2. Full Name of the candidate (in Block Letters): _____
3. Father's / Husband's Name: _____
4. Nationality: _____
5. Correspondence Address (In Block Letters) _____

Paste
Recent passport
size
Photograph

PIN Code _____ Mobile Ph. No. _____ Email ID _____

6. Amount of Application Fee; Bank Demand Draft No. & date: _____

7. Sex : Please (√)

Male	Female

8. (a) Date of Birth: Date: _____ Month: _____ Year: _____
 (Attach copy of the 10th Class/SSLC/Matriculation Certificate)

(b) Age as on 16-12-2019 : _____ Years _____ Months _____ Days

9. Educational qualification (Please attach self-attested copy of certificates and Mark-sheets):

Examination passed (SSLC onwards)	Subjects	Year of passing	Name of the recognized Board/University	Percentage of Marks

10. Experience, if any (Attach self-attested copy of the experience certificate):

11. Any additional information:

12. List of documents attached:

13. Whether the candidate is under any contractual obligation to serve Central/State Govt./Any other Public Sector Undertaking or Autonomous Body and if so, give details (attach No Objection Certificate)

DECLARATION

I hereby declare that all the facts mentioned in this application are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or not satisfying the eligibility criteria according to the requirements of the relative advertisement, my candidature/appointment is liable to be cancelled / terminated.

Place:

(Signature of the Candidate)

Date:

Application for the post of Lower Division Clerk (LDC)

1. Advertisement No. _____
2. Full Name of the candidate (in Block Letters): _____
3. Father's / Husband's Name: _____
4. Nationality: _____
5. Correspondence Address (In Block Letters) _____

- PIN Code _____ Mobile Ph. No. _____ Email ID _____

Paste
Recent passport
size
Photograph

6. Amount of Application Fee; Bank Demand Draft No. & date: _____

7. Whether candidate belongs to EWS Category: **Yes/NO**

(if yes, please attach self-attested copy of the latest EWS Certificate issued by the competent authority)

8. Sex : Please (√)

Male	Female

9. (a) Date of Birth: Date: _____ Month: _____ Year: _____

(Attach copy of the 10th Class/SSLC/Matriculation Certificate)

(b) Age as on 16-12-2019 : _____ Years _____ Months _____ Days

10. Educational qualification (Please attach self attested copy of certificates and mark-sheets):

Examination passed(SSLC onwards)	Subjects	Year of passing	Name of the recognized Board/University	Percentage of Marks

11. Whether the candidate has a typing speed of 35 words per minute in English on computer: **(Yes / No)**

(Specify clearly& attach self attested Xerox copy of the certificate):

OR

the candidate has a typing speed of 30 words per minute in Hindi on Computer : **(Yes / No)**

(Specify clearly& attach self attested Xerox copy of the certificate):

12. Experience, if any (attach self attested copy of the certificate)

13. List of documents attached:

14. Whether the candidate is under any contractual obligation to serve Central/State Govt. /Any other Public Sector Undertaking or Autonomous Body and if so, give details (attach No Objection Certificate)

DECLARATION

I hereby declare that all the facts mentioned in this application are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or not satisfying the eligibility criteria according to the requirements of the relative advertisement, my candidature/appointment is liable to be cancelled / terminated.

Place:

(Signature of the applicant)

Date:

Application for the Post of Multi-Tasking Staff (MTS)

1. Advertisement No. _____
2. Full Name of the candidate (in Block Letters): _____
3. Father's / Husband's Name: _____
4. Nationality: _____
5. Correspondence Address (In Block Letters) _____

- PIN Code _____ Mobile Ph. No. _____ Email ID _____

Paste
Recent passport
size
Photograph

6. Amount of Application Fee; Bank Demand Draft No. & date: _____

7. Category to which the candidate belongs:

Please (√)

General	SC	ST	OBC	EWS
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(If SC/ST/OBC/EWS, please attach self-attested copy of the latest Certificate(s) issued by the competent authority)

8. Sex : Please (√)

Male	Female

9. (a) Date of Birth: Date: _____ Month: _____ Year: _____

(Attach copy of the 10th Class/SSLC/Matriculation Certificate)

(b) Age as on 16-12-2019 : _____ Years _____ Months _____ Days

10. Educational qualification (Please attach self-attested copy of certificates and Mark-sheets):

Examination passed (Including Technical, SSLC onwards)	Subjects	Year of passing	Name of the recognized Board/University	Percentage of Marks

11. Experience, if any (Attach self-attested copy of the experience certificate):

12. Any additional information:

13. List of documents attached:

14. Whether the candidate is under any contractual obligation to serve Central/State Govt./Any other Public Sector Undertaking or Autonomous Body and if so, give details (attach No Objection Certificate)

DECLARATION

I hereby declare that all the facts mentioned in this application are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or not satisfying the eligibility criteria according to the requirements of the relative advertisement, my candidature/appointment is liable to be cancelled / terminated.

Place:

(Signature of the Candidate)

Date:

Annexure - A

(in the case of Govt. employees)

Certificate to be furnished by the Employer / Forwarding Authority:

Certified that:

- (i) The particulars furnished by Shri/Smt. _____ are correct.
- (ii) There is no vigilance / disciplinary case either pending or contemplated against him / her.
- (iii) Integrity of the applicant is certified.
- (iv) Photocopies of the up-to-date ACRs, attested by an officer not below the Rank of an Under Secretary to the Govt. of India are enclosed.
- (v) In the event of his/her selection, there is no objection to relieve/spare him/her within the time specified in the office appointment.

Date:

(Signature of the Head of the Department / Forwarding Authority)

Department / Office with seal / T el. Ph .No.: _____

FORM OF CASTE CERTIFICATE FOR SC/ST

This is to certify that Shri*/Shrimati/Kumari _____ Son/Daughter of
_____ Village/Town _____ /District/Division*
_____ of the _____ State/Union Territory belongs to the
_____ Caste*/Tribe which is recognised as a Scheduled Caste/Tribe under :

*The Constitution Scheduled Castes Order, 1950.

*The Constitution Scheduled Tribes Order, 1950.

*The Constitution (Scheduled Castes) (Union Territories) (Part C States) Order, 1951;

*The Constitution (Scheduled Tribes) (Union Territories) (Part C States) Order, 1951;

[As amended by the Scheduled Castes and Scheduled Tribes List (Modification Order, 1956, the Bombay Reorganisation Act, 1960, the Punjab Reorganisation Act, 1966, the State of Himachal Pradesh Act, 1970, the North Eastern Areas (Reorganisation) Act, 1971 and the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976.]

The Constitution (Jammu and Kashmir) Scheduled Castes Orders, 1956.

The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959, as amended by the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976

The Constitution (Dadra and Nagar Haveli) Scheduled Castes Order, 1962.

The Constitution (Dadra and Nagar Haveli) Scheduled Tribes Order, 1962.

*The Constitution (Pondicherry) Scheduled Castes Order, 1964.

*The Constitution (Uttar Pradesh) Scheduled Tribes Order, 1967.

*The Constitution (Goa, Daman and Diu) Scheduled Castes Order, 1968.

*The Constitution (Goa, Daman and Diu) Scheduled Tribes Order, 1968.

*The Constitution (Nagaland) Scheduled Tribes Order, 1970.

*The Constitution (Sikkim) Scheduled Castes Order, 1978

*The Constitution (Sikkim) Scheduled Tribes Order, 1978

*The Constitution (Jammu & Kashmir) Scheduled Tribes Order, 1989.

*The Constitution (SC) Orders (Amendment) Act, 1990.

*The Constitution (ST) Orders (Amendment) Ordinance Act, 1991.

*The Constitution (ST) Orders (Amendment) Ordinance Act, 1996.

*The Constitution (Scheduled Castes) Orders (Amendment) Act, 2002.

*The Constitution (Scheduled Castes) Orders (Second Amendment) Act, 2002.

*The Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 2002.

2. Applicable in the case of Scheduled Castes/Scheduled Tribes persons who have migrated from one State/Union Territory Administration.

This certificate is issued on the basis of the Scheduled Castes/Scheduled Tribes Certificate issued to Shri/Shrimati* _____ father/mother* _____ of Shri/Shrimati/Kumari _____ of Village/Town* _____ in /District/Division* _____ of the State/Union Territory* _____ who belongs to the _____ Caste*/Tribe which is recognised as a Scheduled Caste/Scheduled Tribe in the Station/Union Territory* issued by the _____ dated _____.

3. Shri/Shrimati/Kumari* and /or* his/her* family ordinarily reside(s) in Village/Town* _____ District/Division* of the State/Union Territory * of _____.

Place _____

Date _____

Signature _____

Designation _____

(with seal of Office)

State/Union Territory _____

* Please delete the words, which are not applicable.

@ Please quote specific Presidential Order

% Delete the Paragraph, which is not applicable

Note : (a) The term 'ordinarily reside'(s) used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.

The following Officers are authorised to issue caste certificates :

1. District Magistrate/Additional District Magistrate/Collector/Deputy Commissioner/Additional Deputy Commissioner/Deputy Collector/1st Class Stipendary Magistrate/Sub Divisional Magistrate/Taluka Magistrate/Executive Magistrate/Extra Assistant Commissioner.
2. Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
3. Revenue Officer not below the rank of Tehsildar.
4. Sub-Divisional Officer of the area where the candidate and/or his family normally resides.
5. Certificates issued by Gazetted Officers of the Central or of a State Government countersigned by the District Magistrate concerned.
6. Administrator/Secretary to Administrator (Laccadive, Minicoy and Amindivi Islands).

**FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES
APPLYING FOR APPOINTMENT TO POSTS UNDER THE GOVERNMENT OF INDIA**

This is to certify that Shri/Smt./Kumari _____ son/daughter of
_____ of village/town _____
in District/Division _____ in the State/Union Territory
_____ belongs to the _____ community
which is recognised as a backward class under the Government of India, Ministry of Social
Justice and Empowerment's Resolution No. _____ dated
_____. * Shri/Smt./Kumari _____ and/or his/her family
ordinarily reside(s) in the _____ District/Division of the
_____ State/Union Territory. This is also to certify that he/she does
not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the
Government of India, Department of Personnel & Training O.M. No. 36012/22/93 – Estt.(SCT)
dated 8.9.1993**.

District Magistrate
Deputy Commissioner etc.

Dated:

Seal

*- The authority issuing the certificate may have to mention the details of Resolution of
Government of India, in which the caste of the candidate is mentioned as OBC.

**-. As amended from time to time.

Note:- The term "Ordinarily" used here will have the same meaning as in Section 20 of the
Representation of the People Act, 1950.

Government of
(Name & Address of the authority issuing the certificate)

INCOME & ASSETS CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS

Certificate No. _____

Date: _____

VALID FOR THE YEAR _____

This is to certify that Shri/Smt./Kumari _____ son/daughter/wife of _____ permanent resident of _____, Village/Street _____ Post Office _____ District _____ in the State/Union Territory _____ Pin Code _____ whose photograph is attested below belongs to Economically Weaker Sections, since the gross annual income* of his/her 'family'** is below Rs. 8 lakh (Rupees Eight Lakh only) for the financial year _____. His/her family does not own or possess any of the following assets***:

- I. 5 acres of agricultural land and above;
- II. Residential flat of 1000 sq. ft. and above;
- III. Residential plot of 100 sq. yards and above in notified municipalities;
- IV. Residential plot of 200 sq. yards and above in areas other than the notified municipalities.

2. Shri/Smt./Kumari _____ belongs to the _____ caste which is not recognized as a Scheduled Caste, Scheduled Tribe and Other Backward Classes (Central List)

Signature with seal of Office _____

Name _____

Designation _____

Recent Passport size
attested photograph of
the applicant

*Note1: Income covered all sources i.e. salary, agriculture, business, profession, etc.

**Note 2: The term "Family" for this purpose include the person, who seeks benefit of reservation, his/her parents and siblings below the age of 18 years as also his/her spouse and children below the age of 18 years

***Note 3: The property held by a "Family" in different locations or different places/cities have been clubbed while applying the land or property holding test to determine EWS status.

**General Syllabus for Entry-Level post of
Category-II Technical Assistant pay level 5 of 7th CPC Pay Matrix**

To be used against General Awareness & Reasoning, General English & General Science and Arithmetic of framework elaborated at Para 2.2 of Appendix - XI of ICFRE TSR - 2013 for all functional Groups viz. Field/Lab Research, Maintenance, Workshop, General Service and Para Medical)

A. General Awareness & Reasoning (20 MCQ):

i) General Awareness:-

Questions in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected from an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to history, culture, geography, economic scene, general policy and scientific research etc. These questions will be such that they do not require a special study of any discipline.

ii) Reasoning:-

Questions of reasoning would include questions of both verbal and non-verbal type. This component will include questions of analogies, similarities and differences, spatial visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetic reasoning, verbal and figure classification, arithmetical number series, non-verbal series, coding and decoding statement, conclusion, syllogistic reasoning etc.

B. General English & General Science (20 MCQ)

i) General English:-

Questions in this component will be designed to test the candidate's understanding and knowledge of english language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting misspelled words, idioms & phrases, One word substitution, improvement of sentences, Active/Passive Voice of Verbs, conversion into direct/indirect narration, comprehension Passage etc.

ii) General Science:-

Basic understanding of science expected of a high school student

C. Arithmetic (20 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, mensuration time and distance ratio and time etc.

ANNEXURE-II

**Subject Wise Syllabus for Entry-Level post of
Category - II (Technical Assistant - Field/Lab Research)
pay level 5 of 7th CPC Pay Matrix**

To be used against 'Relevant Subject (40 MCQ)' of framework elaborated at Para 2.2 of Appendix - XI of ICFRE TSR - 2013 for both sub-functional Groups viz. Life Sciences and Physical Sciences

The questions in part D will be of a level commensurate with the essential qualification viz. Graduation Standard for Category-II Technical Assistant (Field/Lab Research) pay level 5 of 7th CPC Pay Matrix

1. *The subject shall be dependent on the relevant field / trade in which the recruitment is intended to be made.*
2. *The Functional Group (Field/Lab Research) in this Category shall broadly have two sub-functional Groups viz. Life Sciences and Physical Sciences. The Director of the institute may choose to include one or more of the following subjects in above functional groups as per requirement of respective institute.*
 - *Physics*
 - *Chemistry*
 - *Botany*
 - *Zoology and*
 - *Mathematics*
3. *Syllabus of the above subjects is hereunder.*
4. *Director of the Institute may also include any additional subject apart from above. The syllabus may accordingly be proposed by the Director.*

CHEMISTRY

INORGANIC

Atomic structure (review of Bohr's theory and its limitations, dual behaviour of matter and radiation, de Broglie's relation, Heisenberg uncertainty principle, hydrogen atom spectra etc.), Chemical Bonding and Molecular Structure (Ionic bonding, Covalent bonding, Molecular Orbital (MO) Approach), Transition Elements 3d series (General group trends with special reference to electronic configuration, variable valency colour, lanthanoids and actinoids etc.), Coordination Chemistry (Valence bond theory, drawbacks of VBT etc.), Crystal Field Theory

ORGANIC

Fundamentals of Organic Chemistry (Physical Effects, Electronic Displacements etc., Structure, Shape and Reactivity of Organic Molecules, Reactive Intermediates, Strength of Organic Acids and Bases etc.), Stereochemistry (conformation with respect to ethane, butane, cyclohexane, Newman, Sawhorse and Fischer representations, geometrical and optical isomerism, enantiomerism etc.), Aliphatic Hydrocarbons (preparation and reactions of Alkanes, Alkenes, Alkynes- upto 5 carbons), Reactions - Formation of metal acetylides, addition of bromine and alkaline KMnO_4 ozonolysis and oxidation with hot alkaline KMnO_4 .

Functional group approach for the following reactions - preparation & reactions - Aromatic hydrocarbons (case benzene), Alkyl Halides (upto 5 carbons), Aryl Halides (preparation: from phenol, Sandmeyer & Gattermann reactions, Reactions-Chlorobenzene), Alcohols, Phenols and Ethers (Upto 5 Carbons), Aldehydes, Ketones and Carboxylic acids and their derivatives (aliphatic and aromatic), Carboxylic acid derivatives (aliphatic upto 5 carbons), Amines (Aliphatic and Aromatic upto 5 Carbons) and Diazonium Salts, Amino Acids, Peptides and Proteins, Carbohydrates

PHYSICAL

Chemical Energetics (review of thermodynamics and the laws of thermodynamics), Chemical Equilibrium, Ionic Equilibria, Solutions, Phase Equilibrium, Conductance, Electrochemistry, Kinetic Theory of Gases, Liquids, Solids, Chemical Kinetics

NOVEL INORGANIC SOLIDS

Synthesis and modification of inorganic solids, Inorganic solids of technological importance, Nanomaterials, Introduction to engineering materials for mechanical construction, Composite materials, Specialty polymers.

POLYMER CHEMISTRY

Introduction and history of polymeric materials, Functionality and its importance, Kinetics of polymerization, Crystallization and Crystallinity, nature and structure of polymers, Determination of molecular weight of polymers, Glass transition temperature (T_g) and determination of (T_g),

Polymer Solution, Properties of Polymers (Physical, thermal, flow & mechanical properties)

RESEARCH METHODOLOGY FOR CHEMISTRY

Literature Survey (Print, Digital, Information Technology and Library Resources, methods of Scientific Research and Writing Scientific Papers, Chemical Safety and Ethical Handling of Chemicals, Data Analysis, Electronics)

GREEN CHEMISTRY

Introduction to Green chemistry (What is Green Chemistry? Need for Green Chemistry, Goals of Green Chemistry, Limitations/Obstacles in the pursuit of the goals of Green Chemistry)

Principles of Green Chemistry and Designing a Chemical synthesis (Twelve principles of Green Chemistry with their explanations and examples), Examples of Green Synthesis/Reactions and some real world cases, Future Trends in Green Chemistry.

INDUSTRIAL CHEMICALS AND ENVIRONMENT

Industrial Gases and Inorganic Chemicals, Industrial Metallurgy, General Principles of Metallurgy, Environment and its segments (Ecosystems, Biogeochemical cycles of carbon, nitrogen and sulphur, Air Pollution, Water pollution), Energy & Environment (Sources of energy:- coal, petrol and natural gas, Nuclear fusion/Fission, Solar Energy, Hydrogen, Geothermal, tidal and hydel etc., Nuclear pollution), Biocatalysis (Introduction to biocatalysis: Importance in " Green Chemistry and Chemical Industry)

QUANTUM CHEMISTRY, SPECTROSCOPY & PHOTOCHEMISTRY

Quantum Chemistry (Postulates of quantum mechanics, Schrodinger equation and its application to free particle, Heisenberg Uncertainty principle, wavefunctions etc., Angular Momentum, Chemical bonding etc.), Molecular Spectroscopy (Interaction of electromagnetic radiation with molecules and various types of spectra, Rotation spectroscopy, Vibrational Spectroscopy, Raman spectroscopy, Electronic Spectroscopy, Nuclear Magnetic Resonance (NMR) Spectroscopy, Electron spin Resonance (ESR) Spectroscopy), Photochemistry (Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, laws of photochemistry, actinometry, photostationary states, chemiluminescence)

ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY

Inorganic Chemistry:- Chemistry of 3d metals, Organometallic Compounds, Bio-Inorganic Chemistry

Organic Chemistry:- Polynuclear and heteronuclear aromatic compounds (Properties of the following compounds with reference to electrophilic and nucleophilic substitution: Naphthalene, Anthracene, Furan, Pyrrole, thiophene, and Pyridine), Active methylene compounds (Preparation and

Reactions upto 6 carbon), application of spectroscopy to Simple Organic Molecules.

MOLECULES OF LIFE

Carbohydrates, Amino acids, Peptides and Proteins, Enzymes and correlation with drug action, Nucleic acids, Lipids, Concept of energy in biosystems.

**Syllabus for Entry-Level post of
Category-I: Technician (Maintenance, Workshop, General Services)
Pay Level 2 of 7th CPC Pay Matrix**

The questions in parts A,B,C,D & E will be of a level commensurate with the essential qualification viz. 10th Standard for Technician (Maintenance, Workshop, General Services) Pay Level 2 of 7th CPC Pay Matrix.

A. General Awareness (20 MCQ):

Questions will be designed to test the ability of the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to Sports, History, Culture, Geography, Economic scene, General Polity including Indian Constitution, and Scientific Research etc.

B. Mental Ability and Reasoning (20 MCQ)

It would include questions of non-verbal type. The test will include questions on similarities and differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discriminating observation, relationship concepts, figure classification, arithmetical number series, non-verbal series etc. The test will also include questions designed to test the candidate's abilities to deal with abstract ideas and symbols and their relationship, arithmetical computation and other analytical functions.

C. General English (20 MCQ)

Candidates' understanding of the Basics of English Language, its vocabulary, grammar, sentence structure, synonyms, antonyms and its correct usage, etc. and writing ability would be tested.

D. Arithmetic (20 MCQ)

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The part will include questions on problems relating to number system, computation of whole numbers, decimals and fractions, relationships between numbers, fundamental arithmetical operations, percentage, ratio and proportion, average, interest, profit and loss, discount, use of tables and graphs, menstruation time and distance ratio and time etc.

E. Basic Science (20 MCQ):-

Matter-its nature and behavior (Nature of matter, Particle nature, Basic units, Structure of atoms), Organization in the Living world (Cell-basic unit of life, Tissues, Organs, Organ system, Organism, Biological diversity, Health and

Diseases), Motion, Force and Work (Motion, Force and Newton's Laws, Gravitation, Floatation, Work, Energy and Power, Sound), Our Environment (Physical resources, Bio-geo chemical cycles in nature), Food Production.

Chemical substances-Nature and behavior (Chemical reactions, Acids, Bases and Salts, Metals and Non-metals, Carbon compounds, Periodic classification of elements), World of living (Life processes, Control and co-ordination in animals and plants, Reproduction, Heredity and evolution), Natural phenomena (Laws of reflection, Laws of refraction, Functioning of human eye, Lens etc.), Effects of current (Electric current, Potential difference and electric current, Ohm's law, Resistance, Resistivity etc.), Magnetic effects of current (Magnetic field, field lines, Fleming's LHS, RHS etc.), Natural resources (Sources of energy, Our environment, Management of natural resources)

Trade Test

Over and above the written test based on the aforementioned syllabus, this category of candidate shall also have to undergo a trade test based on their respective trade as may be decided by the respective Directors of the Institute.

