



सी.एस.आई.आर.-हिमालय जैवसंपदा प्रौद्योगिकी संस्थान
CSIR-INSTITUTE OF HIMALAYAN BIORESOURCE TECHNOLOGY
पालमपुर-176 061 (हिमाचल प्रदेश)/PALAMPUR (H.P.)-176 061



सं०: आई.एच.बी.टी.2-7/407/2018-भर्ती

दिनांक/Date : 27.02.2025

Reference: Advt. No. 18/2018

In continuation of Screening Result displayed on CSIR-IHBT, website on 01.06.2023, the Trade Test followed by written competitive examination (Paper-I, Paper-II and Paper-III) for selection of suitable candidates for the following posts will be conducted at this Institute as per schedule detailed below:-

Sr. No.	Post Code Nos.	Name of the Post(s)	Date of Trade Test followed by written competitive examination (Paper-I, Paper-II and Paper-III)	Day & Time
1.	1807	Technician (1) in the area of Fitter (01-Post-UR)	21.03.2025	Friday 8:00 A.M.

Venue: CSIR-Institute of Himalayan Bioresource Technology, Palampur, Distt.: Kangra (H.P.)-176 061

- Note: 1. The candidates who qualify the trade test will be allowed to appear in the written competitive examination (Paper-I, Paper-II & Paper-III). Paper-II & Paper-III will be evaluated only for those candidates who secure the minimum threshold marks to be determined by the Selection Committee in the Paper-I. The final merit list will be prepared only on the basis of the marks obtained by the candidates in Paper-II & Paper-III.
2. The description of the mode of examination for the aforementioned post is attached at Annexure -I & syllabus for Paper-III is attached at Annexure -II.
3. The Call letters have already been issued to all the candidates (Annexure-III) who have been found eligible to be called for Trade Tests followed by written competitive examination by registered post.
4. In case any candidate did not receive his/her call letter by **10-03-2025**, he/she may contact the undersigned over the Telephone No. 01894-233339, Ext. 323 or on e-mail ID: sorecruitment@ihbt.res.in.

(संजीत कुमार गुप्ता)

अनुभाग अधिकारी / Section Officer(R&A)
टेलीफोन / Telefax: 01894-230428

ई.मेल / E-mail ID : sorecruitment@ihbt.res.in

प्रतिलिपि / Copy to :

1. The Head, PPME, for placement the Trade Test/written test Schedule on the CSIR-IHBT, website-for general information of all concerned.

Mode of Examination for Technical Posts in CSIR**Group II (Technician)**

Mode of Examination	OMR Based or Computer Based Objective Type Multiple Choice Examination
Medium of Questions	The questions will be set both in English and Hindi except the questions on English Language.
Standard of exam	SSC + ITI / XIIth Standard
Total No. of Questions	150
Total Time Allotted	2 hours 30 minutes

Paper-I (Time Allotted – 1 hour)

Subject	No. of questions	Maximum Marks	Negative Marks
Mental Ability Test*	50	100 (two marks for every correct answer)	<u>There will be no negative marks in this paper.</u>


*Mental Ability Test will be so devised so as to include General Intelligence, Quantitative Aptitude, Reasoning, Problem Solving, Situational Judgement, etc.

Paper-II (Time Allotted – 30 minutes)

Subject	No. of questions	Maximum Marks	Negative Marks
General Awareness	25	75 (three marks for every correct answer)	One negative mark for every wrong answer
English Language	25	75 (three marks for every correct answer)	One negative mark for every wrong answer

Paper-III (Time Allotted – 1 hour)

Subject	No. of questions	Maximum Marks	Negative Marks
Concerned Subject	50	150 (three marks for every correct answer)	One negative mark for every wrong answer


 MANUEL THOMAS
 Sr. Dir. Boundary
 9 APR 2018

Syllabus for Paper-III (Concerned subject – Fitter)

Syllabus For the post of Technician in the area of Fitter:-

1. Linear measurements – its units, dividers, calipers hermaphrodite, centre punch, dot punch, prick punch their description and uses of different types of hammers. Description, use and care of 'V' Blocks, marking off table. Measuring standards (English, Metric Units), angular measurements.
2. Bench vice construction, types, uses, care & maintenance, vice clamps, hacksaw frames and blades, specification, description, types and their uses, method of using hacksaws. Files-specifications, description, materials, grades, cuts, file elements, uses. Types of files, care and maintenance of files. Measuring standards (English, Metric Units), angular measurements.
3. Marking off and layout tools, dividers, scribing block, description, classification, material, care & maintenance. Try square, ordinary depth gauge, protractor- description, uses and cares. Uses, care & maintenance of cold chisels-materials, types, cutting angles.
4. Marking media, marking blue, prussian blue, red lead, chalk and their special application, description. Use, care and maintenance of scribing block. Surface plate and auxiliary marking equipment, 'V' block, angle plates, parallel block, description, types, uses, accuracy, care and maintenance.
5. Physical properties of engineering metal : colour, weight, structure, and conductivity, magnetic, fusibility, specific gravity. Mechanical properties: ductility, malleability hardness, brittleness, toughness, tenacity, and elasticity.
6. Power saw, band saw, circular saw machines used for metal cutting.
7. Micrometer- outside and inside – principle, constructional features, parts graduation, reading, use and care. Micrometer depth gauge, parts, graduation, reading, use and care. Digital micrometer.
8. Vernier calipers, principle, construction, graduations, reading, use and care. Vernier bevel protractor, construction, graduations, reading, use and care, dial Vernier Caliper, Digital Vernier caliper. Vernier height gauge: material construction, parts, graduations (English & Metric) uses, care and maintenance.

9. Drilling processes: common type (bench type, pillar type, radial type), gang and multiple drilling machine. Determination of tap drill size.
10. Safety precautions to be observed in a sheet metal workshop, sheet and sizes, Commercial sizes and various types of metal sheets, coated sheets and their uses as per BIS specifications. Shearing machine- description, parts and uses.
11. Marking and measuring tools, wing compass, tin man's square tools, snips, types and uses. Tin man's hammers and mallets type-sheet metal tools, types, specifications uses, Trammel- description, parts, uses. Hand grooves- specifications and uses. Sheets and wire gauge.
12. Stakes-bench types, parts, their uses. Various types of metal joints, their selection and application, tolerance for various joints, their selection & application. Wired edges.
13. Solder and soldering: Introduction-types of solder and flux. Composition of various types of solders and their heating media of soldering iron. Method of soldering, selection and application- joints. Hard solder Introduction, types and method of brazing.
14. Various rivets shape and form of heads, importance of correct head size. Rivets-Tin man's rivets types, sizes and selection for various works. Riveting tools, dolly snips description and uses. Method of riveting. The spacing of rivets. Flash riveting. Use of correct tools, compare hot and cold riveting.
15. Safety-importance of safety and general precautions observed in a welding shop. Precautions in electric and gas welding. (Before, during, after) Introduction to safety equipment and their uses. Machines and accessories, welding transformer, welding generators.
16. Welding hand tools: Hammers, welding description, types and uses. Description, principle, method of operating, carbon dioxide welding. H.P. welding equipment: description, principle, method of operating L.P. welding equipment: description, principle, method of operating. Types of joints-Butt and fillet as per BIS SP: 46-1988 specifications. Gases and gas cylinder description, kinds, main difference and uses.
17. Setting up parameters for ARC welding machines-selection of Welding electrodes. Care to be taken in keeping electrode.

18. Oxygen acetylene cutting machine description, parts, uses method of handling, cutting torch-description, parts, function and uses.
19. Drill – material, types, (Taper shank, straight shank) parts and sizes. Drill angle- cutting angle for different materials, cutting speed feed. R.P.M. for defferent materials. Drill holding devices – material, construction and their uses.
20. Counter sink, counter bore and spot facing-tools and nomenclature, Reamer material, types (Hand and machine reamer), kinds, parts and their uses, determining hole size (or reaming), Reaming procedure. Screw threads: Terminology, parts, types and their uses. Screw pitch gauge: material parts and uses. Taps British standard (B.S.W., B.S.F., B.A. & B.S.P.) and metric/BIS (coarse and fine) material, parts (shank body, flute, cutting edge).
21. Drill troubles : causes and remedy. Equality of lips, correct clearance, dead centre, length of lips. Drill kinds: Fraction, metric, letters and numbers, grinding of drill.
22. Grinding wheel: Abrasive, grade structures, bond, specification, use, mounting and dressing. Selection of grinding wheels. Bench grinder parts and use.
23. Gauges – Introduction, necessity, types. Limit gauge: Ring gauge, snap gauge, plug gauge, description and uses. Description and uses of gauge-types (feeler, screw , pitch, radius, wire gauge).
24. Interchange ability: Necessity in Engg., field definition, BIS. Definition, types of limit, terminology of limits and fits – basic size actual size, deviation, high and low limit, zero line, tolerance zone. Different standard systems of fits and limits. British standard system, BIS system.
25. Pig Iron: types of pig iron, properties and uses. Cast iron: types, properties and uses Wroughtiron:properties and uses. Steel: plain carbon steel, types, properties and uses. Non-ferrous metals (copper,aluminium,tin, lead,zinc) properties and uses.
26. Vernier micrometer, material parts, graduation, use, care and maintenance. Calibration of measureing instruments. Introduction to mechanical fasteners and its uses. Screw thread micrometer: Construction, graduation and use.

27. Safely precautions to be observed while working on a lathe, Lathe specifications, and constructional features. Lathe main parts descriptions- bed, head stock, carriage, tail stock, feeding and thread cutting mechanisms. Holding of job between centres, works with catch plate, dog, simple description of a facing and roughing tool and their applications.
28. Lathe cutting tools- Nomenclature of single point & multipoint cutting tools, Tool selection based on different requirements and necessity of correct grinding, solid and tipped, throw away type tools, cutting speed and feed and comparison fo H.S.S. carbide tools. Use of coolants and lubricants.
29. Screws: material, designation, specifications, property classes (e.g. 9.8 on screw head) , Tools for tightening/loosing of screw or bolts, Torque wrench, screw joint calculation uses. Power tools: Its constructional features, uses & maintenance.
30. Locking device: Nuts-types (lock nut castle nut , slotted nuts, swam nut, grooved nut) Discription and use. Various types of keys, allowable clearances & tapers, types, uses of key pullers.
31. Special files: Types (Pillar, Dread Naught, Barrow, warding) description & their uses.
32. Pipes and pipe fitting- commonly used pipes. Pipe schedule and standard sizes. Pipe bending methods . Use of bending fixture, pipe threads- Std. Pipe threads Die and Tap, pipe vices.
33. Use of tools such as pipe cutters, pipe wrenches, pipe dies, and tap, pipe bending machine etc.
34. Standard pipefitting Methods of fitting or replacing the above fitting , repairs and erection on rainwater drainage pipes and household taps and pipe work.- Inspection & Quality control- Basic SPC –Visual Inspection.
35. Drilling jig- constuctional features, types and uses. Fixtures- Constructional features, types and uses.
36. Power transmission elements. The object of belts,their sizes and specifications, materials of which the belts are made, selection of type of belts

with the consideration of weather, load and Tension method of joining leather belts.

37. Fluid power, Pneumatics, Hydraulics, and their comparison Overview of a pneumatic system, Boyle's law. Overview if an industrial hydraulic system, Applications, Pascal's Law.
38. Pneumatic valves :- Classification , Symbols of pneumatic components , 3/2-way valves (NO & NC types) (manually -actuated & pneumatically - actuated) & 5/2 way valves, Check valves, Flow control valves, One-way flow control valve Pneumatic valves: Roller valve, shuttle valve,t wo pressure valve Electro- pneumatics: Introduction, 3/2-way single solenoid valve, 5/2-way single solenoid valve, 5/2-way double solenoid valve, Control components- pushbuttons (NO&NC type) and electromagnetic relay unit,Logic controls.
39. Importance of Technical English terms used in indudtry-(in simple definition only) Technical forms , process charts , activity logs , in required formats of industry , estimation , cycle time , productivity reports , job cards.
40. Lubrication and lubricants – purpose of using different types, description and uses of each type . Method of lubrication . A good lubricant , viscosity of the lubricant , Main property of lubricant . How a film of oil is formed in journal Bearings.

Maintenance

- Total productive maintenance
- Autonomous maintenance
- Routine maintenance
- Maintenance schedule
- Retrieval of data from machine manuals, Preventive maintenance-objective and function of Preventive maintenance, section inspection. Visual and detailed, lubrication survey, system of symbol and colour coding. Revision, Simple estimation of materials, use of handbooks and reference table. Possible causes for assembly failures and remedies. Installation, maintenance and overhaul of machinery and engineering equipment.

Engineering Drawing:

- Introduction to Engineering Drawing and Drawing Instruments-
- Conventions
- Sizes and Layout of drawing sheets

- Title Block, its position and content
- Drawing Instrument
- Lines- Types and applications in drawing Free hand drawing of-
- Geometrical figures and blocks with dimension.
- Transferring measurement from the given object to the freehand sketches.
- Free hand drawing of hand tools and measuring tools.
- Drawing of Geometrical figures:
- Angle, Triangle, Circle, Rectangle, Square, Parallelogram.
- Lettering and numbering- Single Stroke.
- Dimensioning
- Types of Arrowhead
- Leader Line with text
- Position of dimensioning (Unidirectional, Aligned).
- Symbolic representation-
- Different symbols used in the related trades.
- Concept and reading of Drawing in
- Concept of axes plane and quadrant
- concept of Orthographic and Isometric projections
- Method of first angle and third angle projections (definition and difference).
- Reading of Job drawing of related trades.
- Reading of drawing of nuts , bolt , screw thread , different type of locking devices e.g., double nut , Castle nut , Pin ,etc.
- Reading of foundation drawing
- Reading of Rivets and Rivetted joints , welded joints.
- Reading of drawing of pipes and pipe joints.
- Reading of job Drawing , Sectional View & Assembly view.

WORKSHOP CALCULATION & SCIENCE:

Friction

Friction – advantages and disadvantages, Laws of friction , coefficient of friction , angle of friction , simple problems related to friction.

Friction – Lubrication

Friction – Coefficient of friction , application and effects of friction in workshop practice.

Centre of Gravity

Centre of gravity – Centre of gravity and its practical application

Area of cut out regular surfaces and area of irregular surfaces

Area of cut out regular surfaces – circle, segment and sector of circle.
Related problems of area of cut out regular surfaces - circle, segment and sector of circle.

Area of irregular surface and application related to shop problems.

Elasticity

Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus.

Elasticity – Ultimate stress and working stress.

Heat Treatment

Heat treatment and advantages

Heat treatment- different heat treatment process-Hardening, tempering, annealing, normalising and case hardening.

Estimation and costing

Estimation and costing – Simple estimation of the requirement of material etc. , as applicable to the trade.

Estimation and costing – Problems on estimation and costing.

List of candidates to be called for Trade Test and written competitive examination (Paper-I, Paper-II and Paper-III) for the post of Technician (1) in the area of Fitter (01-Post UR), advertised vide Advt. No.18/2018 is scheduled to be held on 21.03.2025 at CSIR-IHBT, Palampur (H.P)

Sr. No.	Roll No.	Name of the Candidates
1.	1807001	श्री शवीर भट्ट / Sh. Shaveer Bhatt S/O Sh. Hari Ram,
2.	1807002	श्री अजय कुमार / Sh. Ajay Kumar S/O Sh. Sanjay Kumar,
3.	1807003	श्री अभिलाष कुमार / Sh. Abhilash Kumar S/O Sh. Ram Kumar,
4.	1807004	श्री तरुण पठानिया / Sh. Tarun Pathania S/O Sh. Inderjeet Singh,
5.	1807005	श्री राघव / Sh. Raghav S/O Sh. Ajeet Kumar,
6.	1807006	श्री अनित कुमार / Sh. Anit Kumar S/O Sh. Subhash Chand,
7.	1807007	श्री गुलशन / Sh. Gulshan S/O Sh. Saroop Chand,
8.	1807008	श्री मनीष कुमार / Sh. Manish Kumar S/O Sh. Mahinder Singh,
9.	1807009	श्री राकेश कुमार / Sh. Rakesh Kumar S/O Sh. Prem Chand,
10.	1807010	श्री कमलेश दत्त / Sh. Kamlesh Dutt S/O Late Sh. Shighru Ram,
11.	1807011	श्री राकेश कुमार / Sh. Rakesh Kumar S/O Sh. Onkar Sharma,
12.	1807012	श्री आशीष कुमार / Sh. Aashish Kumar S/O Sh. Trilok Nath,
13.	1807013	श्री रजत धीमान / Sh. Rajat Dhiman S/O Sh. Kulwant Singh,