

सीएसआईआर – केन्द्रीय कांच एवं सिरामिक अनुसंधान संस्थान
196, राजा एस.सी.मल्लिक रोड, कोलकाता – 700 032
CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
196, RAJA S C MULLICK ROAD, KOLKATA-700032

मिसिल सं./File No. A-1 (4)/2022/TA_Tech-R&A

दिनांक/Date: 30.11.2022

अधिसूचना/NOTICE

इस संस्थान के दिनांक 28.11.2022 समसंख्यक अधिसूचना के अनुसार ट्रेड टेस्ट के लिए योग्य पाए गए अभ्यर्थियों कि सूची अधिसूचित कि गई थी, के अनुसरण में निम्नांकित पोस्ट कोड का पाठ्यक्रम सभी अभ्यर्थियों को सूचना हेतु अधिसूचित किया जा रहा है।

In continuation of this Institute's Notification of even no. dated 28.11.2022 wherein lists of shortlisted candidates who have been found eligible for Trade Test for specific Post Codes, the syllabus for Trade/Written Test in the specialized subject for the following Posts Codes are being notified for information of all concerned.

1.	T-03	Chemical Plant
2.	T-07	Information Technology/Computer Hardware & Network Maintenance
3.	T-09	Computer Operations and Programming or Office Management
4.	T-12	BBBT/Production & Manufacturing/Plastic Processing/Chemical Plant
5.	TA-05	Ceramic Engg. Or Technology
6.	TA-06	Computer Science & Engg.
7.	TA-07	Chemical Science/Chemical Engg.
8.	TA-08	
9.	TA-09	Library & Information Science
10.	TA-10	Computer

अन्य विवरण यथा दिनांक, समय, स्थान आदि संबंधित सूचना संस्थान के वेबसाइट पर उपलब्ध होगी एवं अभ्यर्थियों से अनुरोध है कि कृपया संस्थान के वेबसाइट अद्यतन सूचना हेतु देखते रहें।

The other details i.e. date, time, venue etc. of Trade Test will be made available in the website of this Institute and candidates are advised to check the website regularly.

(सिद्धार्थ दे/Siddhartha Dey)

प्रशासनिक अधिकारी/Administrative Officer

Copy to:

1. Head, IITD with a request to host this notice in the Instt. website.

SYLLABUS & PATTERN OF WRITTEN EXAMINATION

A. MODE OF SELECTION FOR TECHNICIAN(I):

The candidates as recommended by the Screening Committee have been invited for Trade Test. Those who qualify in the Trade Test will be invited for a competitive written examination. There will be three papers (Paper-I, Paper-II and Paper-III). Paper-II and Paper-III will be evaluated only for those candidates who secure the minimum threshold marks (to be determined by the Selection Committee) in 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.

Mode of examination:

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 questions on English Language

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)	There will be no negative marks in this paper.

*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

B. MODE OF SELECTION FOR TECHNICAL ASSISTANT:

The candidates as recommended by the Screening Committee will be invited for Trade Test. Those who qualify in the Trade Test will be invited for a competitive written examination. There will be three papers (Paper-I, Paper-II and Paper-III). Paper-II and Paper-III will be evaluated only for those candidates who secure the minimum threshold marks (to be determined by the Selection Committee) in 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.

Mode of examination:

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 questions on English Language

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)	There will be no negative marks in this paper.

*Mental Ability Test will be so devised so as to include General Intelligence, Quantitative Aptitude, Reasoning, Problem Solving, Situational Judgment 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 30 minutes)

Subject	No. of questions	Maximum Marks	Negative Marks
Concerned Subject	100	300 (three marks for every correct answer)	One negative mark for every wrong answer

Advt. No. 01/2022: Syllabus for Post Code: T-03

Post: Technician (1)

Area: Chemical Plant

Syllabus for Trade Test:

1. Common equipments used for Laboratory safety and Personal Protective equipments.
2. Identification of Common gas cylinders used in laboratory
3. Demonstration/identification of hand tools, machine tools and workshop equipment
4. Handling knowledge about common acid and base
5. Identification of laboratory routine glass wares used in chemical Laboratory
6. Basic knowledge about Different types of tube joints (metallic and PTFE) such as Straight connectors, bends or elbows, tees, screwed fittings, coupling, flanges, plug, & stop cock. Tools for fitting and Gasket materials such as asbestos, copper, PTFE, Rubber graphite for particular applications.
7. Common equipments used to measure the pressure, temperature, gas flow(s) and their unit conversion.

Syllabus for Written Test (Paper-III): 8th to 10th Class Physical & Chemical Science Text Book- CBSE Board.

Advt. No. 01/2022: Syllabus for Post Code: T-07

Post: Technician (1)

Area: Information Technology/Computer Hardware & Network Maintenance

Syllabus for Trade Test & Written Test (Paper-III):

1. Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)
2. Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)
3. Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves)
Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)
4. Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)
Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP
Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Mark up Language (XML), domain names, URL, website, web browser, web servers, web hosting

Advt. No. 01/2022: Syllabus for Post Code: T-09

Post: Technician (1)

Area: Computer Operations and Programming or Office Management

Syllabus for Trade Test & Written Test (Paper-III):

1. Assemble a computer Install and configure Windows OS. Install the printer and other peripheral devices. Install application software.
2. Troubleshoot the PC. Execute DOS and LINUX commands. Customize Windows and LINUX OS settings.
3. Create, format and edit document using word processing application software. Create your resume using editing/formatting options in a document. Create purchase order using tables and images. Create magazine using columns page borders, header footers. Create an invitation letter using mail merge for n invitees.
4. Create, format, edit and develop a workbook by using spreadsheet application software. Identify Excel tools in the Ribbon. Create mark sheet using a spreadsheet with data validation.
5. Create a chart for the mark sheet. Create Pay slip using functions and formulae with sharing two different sheets/files. Create a table and Perform Sorting; filtering, Subtotal, validation, and goal seek on a table.
6. Prepare a pivot table on any existing table with data. Create a table and Perform Sorting; filtering, Subtotal, validation, and goal seek on a table. Prepare a pivot table on any existing table with data.
7. Create and customize slides for presentation. Create simple presentations Create presentations with tables, images & graphic elements Create presentations with audio & video elements with transitions.
8. Creating presentations using PPT
9. Writing simple programs in C/PYTHON/C++ to implement
 - a. Numeric calculation
 - b. String processing and
 - c. Array processing

Advt. No. 01/2022: Syllabus for Post Code: T-12

Post: Technician (1)

Area: BBT/Production & Manufacturing/Plastic Processing/Chemical Plant

Syllabus for Trade Test:

1. Common equipments used for Laboratory safety and Personal Protective equipments.
2. Identification of Common gas cylinders used in laboratory
3. Demonstration/identification of hand tools, machine tools and workshop equipment
4. Handling knowledge about common acid and base
5. Identification of laboratory routine glass wares used in chemical Laboratory
6. i) Identification of Manufacturing Processes. ii) Identification of processes for different materials (Metal Plastic/Ceramic)
7. Common equipments used to measure the pressure, temperature, gas flow(s) and their unit conversion.

Syllabus for Written Test (Paper-III): 10th Class Physical & Chemical Science Text Book- CBSE Board and relevant ITI trade/subject.

Advt. No. 01/2022: Syllabus for Post Code: TA-05

Post: Technical Assistant

Area: Ceramic Engg. Or Technology

Syllabus for Trade Test:

1. Determination of moisture content
2. Determination of Atterberg's plasticity of clay
3. Measurement of drying/firing shrinkage
4. Determination of bulk density, porosity and water absorption of a fired sample
5. Determination of specific gravity
6. Determination of grit content of the given sample by wet method
7. Determination of cold crushing strength
8. Determination of flexural strength
9. Slip casting: solid/ hollow casting
10. Preparation of plaster of Paris moulds
11. Preparation of sample by uniaxial pressing method

Written Test (Paper-III)

1. Ceramic raw materials and processing

Natural raw materials: Availability, chemical composition, physical properties
Clay minerals: Classification, Kaolin, Fireclay, Ball clay, China clay, Bentonite, Pyrophyllite; Soda and Potash Feldspar, Nepheline syenite. Silica minerals, Silicate minerals: Kyanite, Sillimanite, Andalusite; Alumina minerals: Bauxite, Gibbsite, Diaspore, Boehmite; Limestone, Dolomite, Magnesite, Gypsum, Zircon
Synthetic raw materials and their processing: mullite, alumina, spinel, zirconia
By-products: Fly ash, Bone ash, and Blast furnace slag.

2. Whiteware and Clayware

Pottery, Heavy clayware products, Terracotta, Earthenware, Stoneware, Porcelain, Bone china, Tiles.

Tri-axial bodies:- Raw materials; Processing: Primary and Secondary crushers, Milling, Batching, Mixing: Types of mixers. Plungers, agitators, Magnetic separation, Screening, Gravity settling. Fabrication methods: Slip casting, Extrusion, Hand moulding, Injection moulding, Pressing, Jiggering and Jollying. Drying, Mechanism of drying, Critical moisture content, Glazing, Types of glazes, Glaze application, firing, fuels, types of kiln and furnace, physico-chemical changes during firing, Sintering and vitrification of the body; polymorphic phase transformation,

Properties: Plasticity, Workability and Rheology, Shrinkage, Drying defects and remedies, Glaze defects and remedies; Firing defects and remedies; Testing: Loss on ignition, plasticity, strength, porosity, Abrasion resistance.

3. Refractories

Definition and classification of Refractories: Shaped, Unshaped, Acidic, Basic, Neutral, Insulation, Dense. Silica refractories, Fireclay refractories, Alumina refractories, Magnesia refractories, Dolomite refractories, Mag-chrome, and Chrome-mag refractories – Raw materials, Binders, Manufacturing methods, Details of the application. Carbon refractories – Binders, carbon sources. Special refractories – Silicon carbide, Zirconia, fused cast. Properties of refractories – AP, BD, CCS, RUL, Hot MoR, PCE, thermal shock.

4. Glass

Glass, Types of glass, Raw materials, Glass formers, Intermediates, Network modifiers, Cullet, Frit. Different glass manufacturing processes - Float glass, Sheet glass, Plate glass, Patterned glass, Hollowware, bottles.

Advt. No. 01/2022: Syllabus for Post Code: TA-06

Post: Technical Assistant

Area: Computer Science & Engg.

Syllabus for Trade Test & Written Test (Paper-III):

1. Install and setup operating system and related software in a computer following safety precautions.
2. Identify basic first aid and use them under different circumstances. Identify different fire extinguisher and use the same as per requirement.
3. Assemble a computer Install and configure Windows OS. Install the printer and other peripheral devices. Install application software.
4. Troubleshoot the PC. Execute DOS and LINUX commands. Customize Windows and LINUX OS settings.
5. Create simple database on Relational Database in MySQL using data validation, filters, sorting, query. Import, Export, Link, Backup and Retrieve database in MySQL. Create query with functions, joins, sub-query.
6. Computer Operator and Programming Assistant 6. Install, setup/configure, troubleshoot and secure computer network including Internet.
7. Identify different cables and connectors used in networking. Assign Computer Name and workgroup to a computer Prepare UTP cross cable & connect computers.
8. Share a printer with Network. Share Internet using Windows Tools. Check Network connectivity. Configure HUB & Switch. Configure DHCP and firewall. Secure Network with various tools.
9. Create E Mail ID and sending / receiving mails Perform text chat and video chat using social network sites Configure Outlook Express.
10. Develop web pages using HTML, CSS. Create Text, Lists, Tables, and Frames with HTML. Create Hyperlinks, Images and Multimedia Working with Forms and controls. Create Lists and Tables with CSS. Create Box Model by using borders, Padding, and Margin with CSS. Create CSS document by Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute selector.
11. Create simple static Web Pages using Develop web pages using Java Script.
12. Design a dynamic Web Page in JavaScript using various operators. Design a dynamic Web Page in JavaScript using various control statements and looping structures. Design a dynamic Web Page in JavaScript using strings and functions. Design a dynamic Web Page in JavaScript using Arrays and objects. Design a dynamic Web Page in JavaScript using Web Forms and images.
13. Create workbooks with advanced formulas, macros, charts, pivot tables and demonstrate ability to use Power tools. Create workbooks with advanced

functionalities in Excel. Create advanced charts & Pivot Tables. Create output files using specific Power tool. 10. Browse, select and transact using Ecommerce websites. Place order for products from E commerce websites for purchase. Upload a product in E Commerce site for sale. Identify security issues in E-commerce and payment operations.

Advt. No. 01/2022: Syllabus for Post Code: TA-07 & TA-08

Post: Technical Assistant

Area: Chemical Science/Chemical Engg.

Syllabus for Trade Test:

1. Identification of Laboratory Glass wares.
2. Setting-up of Distillation, Separation apparatus.
3. Volumetric Titration.
4. Liquid-liquid extraction.
5. Determination of Melting Point of Organic compound.

Syllabus for Written Test (Paper-III):

1. Acids and Bases
 2. Chemical Bonding
 3. Coordination Chemistry
 4. Name Reaction
 5. Organic Spectroscopy (UV, IR and NMR)
 6. Phase Equilibrium
 7. Solutions and Colligative properties
 8. Chemical Kinetics
 9. Thermodynamics
 10. Separation Techniques
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Advt. No. 01/2022: Syllabus for Post Code: TA-09

**Post: Technical Assistant
Area: Library & Information Science**

Syllabus for Trade Test & Written Test (Paper-III):

I. Library and Society

Laws of Library Sciences; Types Libraries; Library Associations, Systems and Programmes; Library Movement and Library Legislation in India; Organizations and Institutions involved in the development of Library and information Services- UNESCO, IFLA, FID,INIS, NISSAT, etc.;

II. Library Management

Collection development – Types of Documents and Selection Principles, Acquisition Procedure, Acquisition of Journals and Periodicals, Preparation of Documents for use; Library Personnel and Library Committee Library Rules and Regulations; Library Finance and Budget; Principles of Library Management, Library Organisation and Structure; Use and Maintenance of the Library- Circulation, Shelving, Stock Verification, Binding and Preservation, Weeding out, etc.

III. Library Classification Theory and Practice

Canons and Principles, Library Classification Schemes- DDC, CC, UDC

IV. Library Cataloguing Theory and Practice

Canons and Principles; Library Cataloguing Codes CCC and AACR

V. Reference and Information Sources

Bibliography and Reference Sources- Types of Bibliography; Reference Sources- Dictionaries, Encyclopaedias, Ready Reference Sources, ETC.; Sources of Information- Primary, Secondary, Tertiary, Documentary; E-Resources, E- Books, E-Journals, etc.

VI. Information Services

Concept and need for Information; Types of Documents; Nature and organization of Information Services, Abstracting and Indexing Services; Computer-based Information Services- CAS,SDI

VII. Information Technology

Basics Introduction to Computers; Use of computers in Library housekeeping, Library Automation; Software and software packages; Networks- DELNET, NICNET, etc.; National and International Information Systems- NISSAT, NASSDOC, INSDOC, DESIDOC, etc.

Advt. No. 01/2022: Syllabus for Post Code: TA-10

Post: Technical Assistant

Area: Computer

Syllabus for Trade Test & Written Test (Paper-III):

1. Create, format and edit document using word processing application software.
2. Create your resume using editing/formatting options in a document. Create purchase order using tables and images. Create magazine using columns page borders, header footers. Create an invitation letter using mail merge for n invitees.
3. Create, format, edit and develop a workbook by using spreadsheet application software. Identify Excel tools in the Ribbon. Create mark sheet using a spreadsheet with data validation. Create a chart for the mark sheet.
4. Create Pay slip using functions and formulae with sharing two different sheets/files. Create a table and Perform Sorting; filtering, Subtotal, validation, and goal seek on a table. Prepare a pivot table on any existing table with data. Create a table and Perform Sorting; filtering, Subtotal, validation, and goal seek on a table. Prepare a pivot table on any existing table
5. Create and customize slides for presentation. Create simple presentations Create presentations with tables, images & graphic elements Create presentations with audio & video elements with transitions.
6. Create and manage database file by using MySQL. Create simple database on Relational Database in MySQL using data validation, filters, sorting, query. Import, Export, Link, Backup and Retrieve database in MySQL. Create query with functions, joins, sub-query. network sites Configure Outlook Express.
7. Develop web pages using HTML, CSS.
