

**DETAILED SYLLABUS FOR THE POST OF JUNIOR ASSISTANT (ACCOUNTS) IN
TRAVANCORE COCHIN CHEMICALS LIMITED (SR FOR ST ONLY)**

(Cat. No. : 213/2019)

(Total Marks - 100)

I. GENERAL KNOWLEDGE

(i) HISTORY (5 Marks)

- **KERALA** - Arrival of Europeans-Contributions of Europeans- History of Travancore from Marthanda Varma to Sree Chithirathirunnal- Social and Religious Reform movement- National movement in Kerala- Literary Sources of Kerala History- United Kerala Movement- Political and Social History of Kerala after 1956.
- **INDIA** – Political History- Establishment of the British- First War of Independence – Formation of INC- Swadeshi Movement- Social Reform movement- Newspapers - Literature and Arts during the freedom struggle – Independence Movement & Mahathma Gandhi - India's independent – Post independent period - State reorganization – Development in Science, Education, and Technology – Foreign policy.
- **WORLD** – Great Revolution in England- American War of Independence – French Revolution- Russian Revolution – Chinese Revolution- Political History after Second World War- UNO and other International Organizations

Current Affairs (2 Marks)

ii) GEOGRAPHY (5 Marks)

Basics of Geography – Earth Structure – Atmosphere, Rocks, Landforms, Pressure Belt and Winds, Temperature and Seasons, Global Issues- Global Warming- Various forms of Pollution, Maps- Topographic Maps and Signs, Remote Sensing – Geographic Information System, Oceans and its various movements – Continents, – Nations and their specific features.

INDIA – Physiography- States and its features, Northern Mountain Region, Rivers, Northern Great Plain, Peninsular Plateau, Coastal Plain, Climate – Natural Vegetation - Agriculture – Minerals and Industries- Energy Sources, Transport system – Road- Water- Railways- Air.

Kerala – Physiography- Districts and its features - Rivers- Climate – Natural Vegetation - Wild life - Agriculture and research centers – Minerals and Industries - Energy Sources - Transport system – Road - Water- Railway- Air

Current Affairs (2 Marks)

(iii) ECONOMICS (5 Marks)

India : Economy, Five Year Plans, New Economic Reforms, Planning Commission and Niti Aayog, Financial Institutions, Agriculture – Major Crops, Green Revolution, Minerals. Direct and indirect taxes in India, GST in India- rationale and structure of GST, benefits of GST.

Current Affairs (2 Marks)

(iv) INDIAN CONSTITUTION (5 Marks)

Constituent Assembly-Preamble-Citizenship- Fundamental Rights, Writs -Habeas Corpus, Mandamus, Prohibition, Certiorari and Quo warranto. Directive Principles of State Policy- Fundamental Duties- Structure of Governments- Union Executive, Parliament and Judiciary- State Executive, Legislature and Judiciary- Local Self Government Institutions (LSGIs)- Important Constitutional Amendments (42, 44, 52, 73, 74, 86, 91, 97, 101, 102, 103, 104)- Constitutional Authorities and their functions - Comptroller and Auditor General, Attorney General, Advocate General, Election Commission of India, State Election Commission, Union Public Service Commission, State Public Service Commission- Finance Commission- State Finance Commission- GST Council- Distribution of legislative powers- Union List- State List- Concurrent List- Services under the Union and the States- Tribunals-National Commission for Scheduled Castes- National Commission for Scheduled Tribes- National Commission for Backward Classes- Official Language-Regional Languages-Language of the Supreme Court, High Courts, etc-Special directives relating to languages

Current Affairs (2 Marks)

(v) Kerala Governance and System of Administration – (10 Marks)

Kerala State Civil Service- Quasi-judicial bodies, various Commissions, Basic facts of socio-economic development- Planning Board-Commercial Planning and Policies- Disaster Management- Watershed Management- Employment and Labour-National Rural Employment Programmes- Land Reforms- Social Welfare and Security- Protection of Women, Children and Senior Citizens- Population, Literacy, E-governance, Delegated Legislation and its controls- Legislative and Judicial controls- Constitutional law remedies against

Administrative Arbitrariness- Administrative Discretion and its Controls-
Administrative Adjudication-Principles of Natural Justice.

Current Affairs (2 Marks)

(vi) Life Science and Public Health (6 Marks)

1. Basic facts of Human Body
2. Vitamins and Minerals and their Deficiency Diseases
3. Communicable Diseases and Causative Organisms, Preventive and Remedial Measures
4. Kerala – Welfare activities in Health Sector
5. Lifestyle Diseases.
6. Basic Health Facts
7. Environment and Environmental Hazards

Current Affairs (1 Marks)

(vii) Physics (3 Marks)

- 1) Branches of Physics –Matter - Units, Measurements - Physical Quantities.
- 2) Motion - Newton's Laws of Motion - Third law – Momentum - Projectile Motion - Uses of Third Law - Achievements in space missions in India- ISRO.
- 3) Light- Lens, Mirrors - Problems based on $r = 2f$ - Different phenomena of Light - Rainbow - Colours of different materials - Electromagnetic Spectrum – IR rays- UV rays - X rays - Photoelectric Effect.
- 4) Sound - Different types of Waves - Velocity of Sound in different media - Resonance – Reverberation.
- 5) Force - Different types of Forces – Friction - Advantages and disadvantages of Friction - Liquid Pressure - Buoyant Force – Archimedes Principle - Pascal's law – Density - Relative density- Adhesive Cohesive forces- Capillarity - Viscous force - Surface tension.

- 6) Gravitation - Centripetal Force - Centrifugal Force - Escape Velocity, Satellites - Escape Velocity - Weight Mass - value of 'g' - 'g' in different places.
- 7) Heat - Temperature - Different types of thermometers – Humidity - Relative Humidity.
- 8) Work - Energy - Power - Simple problems relating to Work, Energy, Power, Levers - Different types of Levers.

Current Affairs (1 Marks)

(viii) Chemistry (3 Marks)

1. Atom – Molecule - States of Matter – Allotropy - Gas laws - Aqua regia.
2. Elements - Periodic Table-Metals & Non metals-Chemical Physical changes- Chemical reactions-Solutions, Mixtures, Compounds.
3. Metals-Non metals – Alloys – Acids, Bases - pH value – Alkaloids.

Current Affairs (1 Marks)

(ix) Arts, Sports, Literature and Culture (5 Marks)

Arts

1. Important Audio Visual Art Forms of Kerala- Famous Places, Institutions, Personalities, Artistes and Writers related to origin, development, extension, and practice of these Art Forms.

Sports

1. Famous Sports personalities of Kerala, India and World – their Sports Events, achievements and awards.
2. Important Awards – Corresponding Fields , Winners
3. Famous Trophies – Related Events and Sports Items.
4. Number of Players in Important Sports Items.
5. Important Terms associated with various Sports and Games.

6. Olympics - Basic Facts, Venues / Countries, Famous Performances and Personalities- India in Olympics-Winter Olympics & Para Olympics.
7. Asian Games, Afro-Asian Games, Commonwealth Games, SAF Games – Venues, Countries, Performance of India, other facts.
8. National Games.
9. Games - Events, Players, Achievements.
10. National Sports / Games , Events of various Countries

Literature

1. Malayalam - Important Literary Movements – Icons and their first works.
2. Main works of Literature related to each movement and their authors.
3. Writers – Pen name and Nick name.
4. Famous Works and Characters.
5. Famous Quotes – Books and Authors.
6. Beginning of Journalism in Kerala – Pioneers, Journals and Publications.
7. Famous Awards/ Honours – Writers and their works.
8. Malayalam Writers who won the Jnanpith Award and related facts.
9. Malayalam Cinema - Origin, Development, Milestones, Pioneers, National Awards.

Culture

1. Kerala - Important Celebrations -Places associated with such Celebrations, Important Festivals.
2. Kerala – Cultural Centres, Worship Places, Cultural Leaders and their Contributions.

Current Affairs (2 Marks)

(x) Basics of Computer (3 Marks)

1. Hardware

- Input Devices (Names and uses)
- Output Devices (Names and uses/features)
- Memory devices - Primary and Secondary (Examples, Features)

2. Software

- Classification – System software and Application software
- Operating System – Functions and examples
- Popular Application software packages – Word processors, Spreadsheets, Database packages, Presentation, Image editors (Uses, features and fundamental concepts of each)
- Basics of programming – Types of instructions (Input, Output, Store, Control, Transfer) (*Languages need not be considered*)

3. Computer Networks

- Types of networks – LAN, WAN, MAN (Features and application area)
- Network Devices – Media, Switch, Hub, Router, Bridge, Gateway (Uses of each)

4. Internet

- Services – WWW, E-mail, Search engines (Examples and purposes)
- Social Media (Examples and features)
- Web Designing – Browser, HTML (Basics only)

5. Cyber Wrongs (Awareness Level)

- Types of Cyber Wrongs (Awareness level)
- Information Technology Act, 2000 (Awareness level)

(xi) Important Acts (5 Marks)

1. Right to information: Right to Information Act, 2005- information exempted- third party information- constitution of Information Commissions-powers and functions
2. Right to public services: The Kerala State Right to Service Act, 2012

3. Protection of consumers: Consumer Protection Act, 2019- rights of consumers
4. Protection of vulnerable sections: Protection of Civil Rights Act, 1955- SC & ST (Prevention of Atrocities) Act, 1989- The Kerala State Commission for the Scheduled Castes and the Scheduled Tribes Act, 2007- Kerala State SC/ST Commission- Protection of Human Rights Act, 1993- National Human Rights Commission and State Human Rights Commission- Maintenance and Welfare of Parents and Senior Citizens Act, 2007- The Rights of Persons with Disabilities Act, 2016- The Transgender Persons (Protection of Rights) Act, 2019
5. Protection and Safeguarding of Women: Offences against women under IPC, 1860 - Offences affecting public decency and morality under IPC–Dowry Prohibition Act, 1961- National Commission for Women Act, 1990- Kerala Women's Commission Act, 1991- National and State Commission for Women- Protection of Women from Domestic Violence Act, 2005- The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013
6. Protection and Safeguarding of Children- Offences against children under IPC- Protection of Children from Sexual Offences Act, 2012 (POCSO)- Juvenile Justice (Care and Protection of Children) Act, 2015
7. Prevention of corruption and mal-administration- The Prevention of Corruption Act, 1988- The Central Vigilance Commission Act, 2003- The Lokpal and Lokayuktas Act, 2013- The Kerala Lok Ayukta Act, 1999
8. Public servant: Definition under IPC- Offences by/against public servants under IPC
9. The Administrative Tribunals Act, 1985- Central Administrative Tribunal- Kerala Administrative Tribunal – Composition- Powers

II. GENERAL ENGLISH

(10 Marks)

i. English Grammar (5 Marks)

- Types of Sentences and Interchange of Sentences.
- Different Parts of Speech.
- Agreement of Subject and Verb.
- Articles - Definite and Indefinite Articles.
- Uses of Primary and Modal Auxiliary Verbs
- Question Tags
- Infinitive and Gerunds
- Tenses
- Tenses in Conditional Sentences
- Prepositions
- The Use of Correlatives
- Direct and Indirect Speech
- Active and Passive voice
- Correction of Sentences
- Degrees of Comparison

ii Vocabulary (5 Marks)

Singular & Plural, Change of Gender, Collective Nouns
Word formation from other words and use of prefix or suffix
Compound words
Synonyms
Antonyms
Phrasal Verbs
Foreign Words and Phrases
One Word Substitutes
Words often confused

Spelling Test

Idioms and their Meanings

Expansion and meaning of Common Abbreviations

III COMPUTER APPLICATIONS (20 Marks)

MODULE 1- COMPUTER FUNDAMENTALS & INFORMATICS

1.1 Components of a Computer system

1.1.1 Hardware components- Hardware-Definition, Components - Control unit, ALU,I/O devices, Memory, Motherboard-functions of each. Types of PCs – Desktop, Laptop, Note book, PDA, Special Purpose computers, Super computers – Characteristics and area of use. Memory – Comparison- Primary vs Secondary memory. RAM and ROM variations, Various Magnetic and Optical Storage Devices –examples. Input Devices – Keyboard, Mouse, trackball, joystick, scanners, Digital camera, OCR, OMR, MICR, Light pen, bar code readers, QR code, Voice recognition and touch screen-Characteristics. Output Devices - Monitors, Printers, Plotter, Sound cards and speakers-Characteristics.

(3 marks)

1.1.2 Software Concepts - Types of software-system software and application software. System software-definition and examples. Functions of OS, Application software – definition and examples. Number systems – decimal, octal, hexadecimal and binary –Representation concepts only. Computer coding systems- EBCDIC, ASCII and Unicode-definitions.

(2 marks)

MODULE 2 - OFFICE AUTOMATION

2.1 Introduction to MS-Office

2.1.1 Introduction to MS –WORD

Introduction to Word Processing, Introduction to MS Word: features, Creating, Saving and Opening documents in Word, Interface, Toolbars, Ruler, Different Menus, Keyboard Shortcut. Editing a Document. Opening Multi document windows, Editing Text – Selecting, Inserting, deleting, moving text, Previewing documents, Printing documents. Formatting Documents: Paragraph formats, Aligning Text and Paragraph, Borders and Shading, Headers and Footers, Multiple Columns.

(2 marks)

2.1.2 Introduction to MS-Excel

Worksheet basics- Creating worksheet, Definition of cell, columns and rows.. Saving & protecting worksheet. Opening and moving around in an existing worksheet. Toolbars and Menus-Functions, keyboard shortcuts. Cell formatting, changing alignment, character styles, column width, date format, borders & colors. Working with formulas & cell referencing. Functions .Previewing & Printing worksheet – Page setting, Print titles,

Adjusting margins, Page break, headers and footers.

(2 marks)

2.1.3 Introduction to MS-PowerPoint

Purpose of PowerPoint. Working with different views and menus of power point. Working with slides – Make new slide, move, copy, delete, duplicate, designing and lay outing of slide. Editing and formatting text, Printing presentation – Print slides, notes, handouts and outlines. Inserting Objects – Drawing and inserting objects using Clip Art's pictures and charts. Adding graphics, multimedia and special effects. Custom Animation – slide transition effects and other animation effects.

(1 mark)

MODULE 3 - PROGRAMMING LANGUAGES

3.1 OOP Concepts

3.1.1 Principles of Object-oriented Programming: Object-Oriented Programming Paradigm, Basic Concepts of Object Oriented Programming, Benefits of OOPs, Object-Oriented Languages, Essentials of OOP(Objects, Class, Encapsulation, Data Abstraction, Inheritance, Reusability, Polymorphism, Delegation, Message Communication), Structure of C++ Program, Creating the Source File, Compiling and Linking.

(1 mark)

3.1.2 C++ Basics - Preprocessors, comments, Data types, Operators, Expressions, Identifiers, Key words, Symbolic constants, Variable declaration and dynamic initialization, C++ statements, Control structures, Arrays and string handling, Specifying a Class, Defining Member Functions, its scope

(1 mark)

3.2 Visual Basic.Net

3.2.1 Introduction to .NET- .NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to Visual studio, Project basics, types of project in . Net, IDE of VB.NET-Menu bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser. Visual development & event driven Programming -Methods and events.

(1 mark)

3.2.2 The VB.NET Language- Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Collections, Subroutines, Functions, Passing variable, Number of Argument, Optional Argument, Returning value from function. Control flow statements: conditional statement, loop statement. GUI programming with Windows Forms, MsgBox & Inputbox, TextBox, Label, Button, Listbox, Combobox, Checkbox, Radio button etc

(1 mark)

MODULE 4 - DATABASE MANAGEMENT SYSTEMS

4.1 Introduction to Database concepts

Need of database, Flat database, Database Management Systems, Characteristics of DBMS, Relational Database, Entity and Referential Integrity, Primary key, Foreign key, Database elements-Tables, records, Query, Form, Report, Client-server paradigm (1 mark)

4.2 Database Query commands

Different DDL, DML, DCL commands, Creating, deleting, updating and manipulating tables using SQL commands, Applying constraints on tables, filtering using WHERE, LIKE etc. Joining tables, grouping data using Group By. Data aggregation functions

(2 marks)

MODULE 5 - WEB DESIGNING

5.1 Word Wide Web (www) - History, Working, Web Browsers- functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Servers, Web Protocols. HTML, Design tools, HTML editors , Image editors. (1 mark)

5.2 HTML - Concepts Of Hypertext, Versions of HTML, Elements of HTML, Syntax, Head & Body Sections, Building HTML Documents. Inserting Texts, Images, Hyperlinks, Backgrounds And Color Controls, Different HTML Tags, Table Layout and Presentation, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in Web Pages. (1 mark)

5.3 JavaScript Overview, syntax & conventions. Variables, Expressions, Branching & Looping statements, Functions, Arrays Objects, Events & Document Object Model - onClick, onMouseOver, on Submit, on Focus, on Change, onBlur. onLoad, onUnload. Alerts, Prompts & Confirms. (1 mark)

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.