**FURTHER DETAILS REGARDING MAIN TOPICS OF PROGRAMME NO. 06/2013  (Item No. 13)**
# LECTURER IN COMPUTER APPLICATIONS & BUSINESS MANAGEMENT
**TECHNICAL EDUCATION (POLYTECHNICS)**
**(CATEGORY NO. 369/2012)**

## Part.I.  COMPUTER APPLICATIONS

### 1.Programming
C – Statements – functions – files, structures, pointers
C++ and Java – class, objects, inheritance, polymorphism, constructors, exception handling, files.
Java – packages and interfaces, multi threading,  applets

### 2.  (a)Data Structures
Stack, array, queue, dequeue, linked lists, tree, graph, sorting, searching, file structures, algorithms and time complexity

### (b) Digital Systems and Computer Organization

Number Systems, conversion from one number system to another, BCD, floating point number, binary arithmetic, Boolean algebra, design of combinatorial circuits, shift registers.  Functional units of digital computer, addressing modes, virtual memory – cache memory, processing unit, control unit.

### 3.Operating System

File System, directory structure, CPU scheduling, process states, threads, semaphores, memory management, device management.

### 4. Database Management System

Database users, comparison with file system, ER diagram, attributes, keys, relational database, relational algebra, SQL, triggers, integrity constraints, normalization, indexing, hashing,  transaction, concurrency control, database recovery.

## 5. Internet and Web Applications

Computer Network, IP address, internet, world wide web, HTML, XML, HTTP, multimedia, streaming, videoconferencing, voice, video over IP, data compression, cryptography, network security

## 6.Software Engineering

Software Engineering Processes, methods and tools, software process models, phases in software development, design phases,risk management, testing, maintenance, dependability.

# Part.II. MANAGEMENT

## 1.Financial Management

Journal, Ledger, Trial Balance, Profit & Loss Account, Balance Sheet

## 2.Operations Management

Productivity, Lay out planning and types of lay out, Inventory Control – EOQ Model, Selection Inventory Control, Work Measurement

## 3. (a) Human Resources Management :-

Recruitment and Selection, Job Analysis, Job Rating, Performance Rating, Communication

## (b) Marketing Management:-

Internal and External Environment of Business –Marketing Mix –Market Segmentisation – Product Life Cycle – Promotion Mix

## 4. Quantitative Techniques:-

Mean, Median, Mode, Regression Analysis, Correlation Analysis, Normal Distribution.

## 5. Operations Research:-

Linear Programming – Graphical and Simplex methods - Transportation Problem, Assignment Problem, Game Theory, CPM/PERT

## Part.III.  Facts about India

Geography of India- Physical Features- Climate-Soils- Rivers- Famous Sites – Etc
Demography- Economic and Social Development-Poverty Alleviation-Economy and Planning-Etc
History of India- Period from 1857 to 1947- National Movement- Etc.


## Part.IV.  Facts about Kerala

Geographical Facts- Physical Features- Climate-Soils- Rivers- Famous Sites – Etc
**Renaissance of Kerala**
Important Events/ Movements/Leaders
Brahmananda Swami Sivayogi, Chattampi Swami, Sree Narayana Guru, Vagbhatananda, Thycaud Ayya, Ayya Vaikundar, Poikayil Yohannan (Kumara Guru), Ayyankali, Pandit Karuppan, Mannathu Padmanabhan, V.T.Bhattathirippad, Dr. Palpu, Kumaranasan, Vakkom Moulavi, Blessed Kuriakose Elias Chavara, Etc



*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.*