

STUDY MATERIAL
Intermediate (IPC) Course

PAPER : 7A

INFORMATION TECHNOLOGY
(REVISED SYLLABUS)

[Relevant from November, 2014 Examination onwards]

VOLUME – I



BOARD OF STUDIES
THE INSTITUTE OF CHARTERED ACCOUNTANTS OF INDIA

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A WORD ABOUT STUDY MATERIAL

The emergence of Information Technology (IT) has very significant impact on all activities related to Accounting Profession. An accountant who does not comprehend computer-based accounting system, is likely to be left high and dry in the profession. Recognizing the importance of IT, Chartered Accountancy course has included it as a part of the course curriculum both at IPCC and Final levels. A paper on 'Information Technology' forming the part of curriculum at Intermediate (IPC) level of the Chartered Accountancy course is to provide the understanding of the fundamental concepts of how Business Process Management and Information Systems are closely interfaced with IT to provide the required Business Process Automation for enterprises.

In this prompt shifting world of Information and Communication Technologies, the Institute felt an urgent need to revisit the syllabus of IT related papers separately and hence, the syllabus of 'Information Technology' paper has been revised with a view to rationalize the same in the light of recent technological developments by making necessary additions/deletions and modifications therein.

This paper enables students to understand how business processes are automated and explains the business implications, considerations and imperatives for practical deployment of IT in enterprises. The topics covered are closely linked with the topics covered in other papers viz. "Strategic Management" and "Audit and Assurance", which will facilitate students to understand the conceptual framework of business processes and information systems and thus assist better understanding of topics covered in the curriculum. The topics covered in this paper elucidate how business processes and information systems are inter-linked and how these can be automated using different IT components.

Students may note that the CA course is not just about understanding of theory but provides a platform for practical application of the knowledge gained, through their work as articles in the area of compliance, assurance or advisory services. The study material covered both concepts and practical aspects and hence, students are advised to read the study material not only from examination point of view but also from practical perspective of how this is relevant and can be applied to their work environment.

The overall learning objective of this paper *"To develop understanding of Information technology as a key enabler and facilitator of implementing Information systems in enterprises and their impact on business processes and controls"* has been kept in mind while developing the material. The learning objectives are translated into a set of task statements, which outline what the students should learn "to do". The task statements are linked to a set of knowledge statements, which outline what they should "know" to be able to perform the tasks. All these together have been used to develop the topics, which provide the detailed contents with a logical flow. Chapter-wise coverage of various topics in the study material is given as follows:

Chapter 1 introduces the concept of Business Process Management (BPM) and Business Process Re-Engineering (BPR) in bringing about integration and significant improvement in business processes. Impact of IT on business processes, its risks and benefits are also discussed in this chapter. Further, it provides an insight to the different mapping systems like Entity Diagrams, DFDs, Decision Trees and some more.

Chapter 2 includes the discussion on the relevance of auditing in Business Processes, the phases of System Development Life Cycle (SDLC) and overview of Information Systems layers. Overview of latest technological devices and popular computing models and architectures are also focused here.

Chapter 3 deals with the topics on fundamentals, components and functioning of Telecommunication systems, different types of networks and their architectures. Afterwards, the chapter provides an insight on the working of internet and its different technologies.

Chapter 4 comprehensively converses in detail various types of Business Information Systems at different levels of an organization. Further, the students are also introduced with some specialized systems like Core Banking system, CRM, ERP, CBS etc. used world wide. Business reporting through IT and organization roles and importance of access controls are outlined in this chapter for the sake of clarity of students of the concept.

Chapter 5 highlights various aspects pertaining to business process automation through application software. Emerging concepts in the field of IT like virtualization, Grid computing, cloud delivery model etc. are also covered in this chapter.

In case you need any further clarification/guidance, please send your queries at bosnoida@icai.in/ sukriti.arora@icai.in.

Happy Reading and Best Wishes!

SYLLABUS (REVISED)

Paper - 7A: Information Technology (50 Marks)

Level of Knowledge: Working Knowledge

Objective: "To develop understanding of Information Technology as a key enabler and facilitator of implementing Information Systems in enterprises and their impact on business processes and controls".

Contents

1. **Business Process Management & IT:** Introduction to various Business processes – Accounting, Finances, Sale, Purchase etc. Business Process Automation – Benefits & Risks, Approach to mapping systems: Entity Diagrams, Data Flow Diagrams, Systems Flow diagrams, Decision Trees/tables, Accounting systems vs. Value chain automation. Information as a business asset, Impact of IT on business processes. Business Risks of failure of IT, Business Process Re-engineering
2. **Information Systems and IT Fundamentals:** Understand importance of IT in business and relevance to Audit with case studies. Understand working of computers and networks in business process automation from business information perspective. Concepts of Computing (Definition provided by ACM/IEEE and overview of related terminologies). Overview of IS Layers – Applications, DBMS, systems software, hardware, networks & links and people. Overview of Information Systems life cycle and key phases. Computing Technologies & Hardware – Servers, end points, popular computing architectures, emerging computing architectures & delivery models – example: SaaS, Cloud Computing, Mobile computing, etc., Example: Overview of latest devices/technologies – i5, Bluetooth, Tablet, Wi-Fi, Android, Touchpad, iPad, iPod, Laptop, Notebook, Smartphone, Ultra-Mobile PC etc.
3. **Telecommunication and Networks:** Fundamentals of telecommunication, Components and functions of Telecommunication Systems. Data networks – types of architecture, LAN, WAN, Wireless, private and public networks etc., Overview of computing architectures – centralized, de-centralized, mainframe, client-server, thin-thick client etc. Network Fundamentals – Components, Standards and protocols, Network risks & controls – VPN, Encryption, Secure protocols. Network administration and management – concepts and issues. How information systems are facilitated through telecommunications. How Internet works, Internet architecture, key concepts, risks and controls, e-Commerce and M-commerce technologies

4. **Business Information Systems** : Information Systems and their role in businesses, IT as a business enabler & driver – ERP, Core Banking System, CRM, SCM, HRMS, Payment Mechanisms. The relationship between organizations, information systems and business processes, Accounting Information Systems and linkages to Operational systems, Business Reporting, MIS & IT. Organization Roles & responsibilities and table or authorities, importance of access controls, privilege controls. Specialized systems - MIS, DSS, Business Intelligence, Expert Systems, Artificial Intelligence, Knowledge Management systems etc.

5. **Business process automation through Application software**: Business Applications – overview and types, Business Process Automation, relevant controls and information systems. Information Processing & Delivery channels and their role in Information Systems. Key types of Application Controls and their need. Emerging concepts – Virtualization, Grid Computing, Cloud delivery model.

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