SC E-Learning

CAF-3 Data, Systems and Risks

ICAP Syllabus Grid

Syllabus Ref.	Grid	Teaching hours	Weightage
A	Data	40-45	35-45
B	Systems	40-45	30-40
C	Risks	30-40	20-30
	Total	110-140	100

Grid-wise Topics and Marks

Syllabus Ref.	Grid	Topics	Marks
A	Data	• Types, sources and collection of data • Data governance, classification and management • Stages of data analytics • Big Data • Database management, warehousing and ETL • RDBMS, NoSQL, Object and Graph Databases	35-45
B	Systems	• IT architecture: hardware, software and networks • IT system components and organizational efficiency • ICT for organizational systems • Systems, processes and controls for data • ERP systems • Cloud computing • IT governance and management frameworks • Emerging technologies: AI, blockchain, fintech and IoT • AI techniques in analytics • Digital disruption and technology developments	30-40
C	Risks	• IT environment risks • Cyber and information security risks • IT General Controls • ICT support in risk identification, reporting and management	20-30

Key Examinable Technical Competencies

Syllabus Ref.	No.	Learning Outcomes	Proficiency levels	Testing levels
A	**Data**			
	1	Identify different types of data, their sources, and collection of data.	P1	T1
	2	Discuss data governance, classification, and management practices, including data storage, integrity, security, and ethical considerations.	P2	T2
	3	Understand the stages of data analytics (descriptive, diagnostic, predictive, and prescriptive) and their applications and implications.	P2	T1
	4	Discuss Big Data, its characteristics, implications, and methods of collection and application.	P2	T2
	5	Discuss database management, including database normalization, data warehousing, and the concepts of ETL (Extract, Transform, Load)	P2	T2
	6	Understand various database management systems, including Relational Database Management Systems (RDBMS), NoSQL, Object Databases, and Graph Databases.	P1	T1
B	**Systems**			
	1	Describe the fundamental architecture of IT systems within an organization, including hardware, software, and networks.	P2	T2
	2	Explain the roles and interactions of various IT system components and their impact on organizational efficiency and effectiveness.	P2	T2
	3	Apply Information and Communication Technologies (ICT) to enhance the efficiency and effectiveness of an organization's systems.	P2	T2
	4	Analyze the adequacy of systems, processes and controls for collecting, generating, storing, accessing, using, sharing, or reporting data and information.	P2	T2
	5	Specify core features and components of ERP systems.	P1	T1
	6	Specify the features, types and uses of cloud computing including cloud computing models.	P1	T1
	7	Describe the frameworks and best practices for IT governance and management. Recommend on adequacy and improvement of ICT processes and controls including Return on Investment (ROI).	P2	T2
	8	Understand emerging technologies including, artificial intelligence, blockchain technology, fintech and Internet of Things and their potential impact on business systems.	P1	T1
	9	Understand how AI techniques, such as machine learning and deep learning enhance data analytics and decision-making.	P1	T1
	10	Identify the effect of digital disruption and technology developments on the accountancy profession and business.	P1	T1
C	**Risks**			
	1	Discuss risks associated with IT environments including both physical and digital computing technologies.	P2	T1
	2	Discuss cyber and information security risks.	P2	T2
	3	Describe the IT General Controls for managing risks related to confidentiality, integrity and availability.	P2	T2
	4	Explains how ICT supports the identification, reporting and management of risk in organization.	P2	T1

Key Examinable Professional Skills

1	Evaluate data and information from a variety of sources and perspectives through research, collaboration, integration and analysis.
2	Apply critical thinking skills to solve problems, form judgements, make informed decisions and reach well-reasoned conclusions.
3	Communicate clearly and concisely with a range of stakeholders.
4	Evaluate changing facts and circumstances to solve problems, form judgments, make informed decisions, and reach well-reasoned conclusions.
5	Anticipate challenges and plan potential solutions.
6	Demonstrate intellectual curiosity to emerging ideas and practices.

Key Examinable Professional Values, Ethics and Attitude

1	Apply an inquiring mind when collecting and assessing data and information.
2	Apply critical thinking when identifying and evaluating alternatives to determine an appropriate course of action.

Specific Examinable Knowledge Reference

1	IT Frameworks: COBIT
2	IT Risk: ISO 27005
3	Information and Cyber Security: ISO 27001 and 27002
4	State Bank of Pakistan: Enterprise Technology Governance and Risk Management Framework Security Exchange Commission of Pakistan: Guidelines for Cyber Security Prevention of Electronic Crimes Act, 2016 Cyber security policy of Pakistan Electronic Transaction Ordinance, 2002