Latest Trends and Technologies – Syllabus

SECTION-A

Telecommunication Networks: Evolution, Architecture, components and applications. Mobile Networks: 1G, 2G, 3G, 4G, 5G and 6G, basic network performance metrics.
Internet of Things (IoT): Understanding IoT fundamentals, IoT Architecture and protocols, Various Platforms for IoT, Real-time Examples of IoT, Overview of IoT components and IoT Communication Technologies, sensors & Actuators, Challenges in IoT, electronics platforms /devices like Arduino, Raspberry Pi.

Augmented reality (AR) and Virtual Reality (VR): Introduction to the AR functionality, taking the next steps with ARCore, bringing ARCore to life,

VR-hardware and history, applications, the psychology of VR: The three illusions, challenges in VR.

SECTION-B

Cloud Computing: Introduction to Cloud Computing, NIST Definition of Cloud Computing, Essential Characteristics, Applications, Issues and Challenges, Virtualization; Hypervisors;

Service Models: IaaS, PaaS, SaaS; Deployment Models: Private, Community, Public, Hybrid; Cloud Computing Reference Architecture: Consumer, Provider, Auditor, Broker, Carrier; Basic Features of Amazon Web Services (AWS), Google Cloud Platform (GCP) and Microsoft Azure.

Artificial Intelligence, Machine Learning and Data Science: Introduction to Artificial Intelligence, Data Mining, Machine Learning, Deep Learning, Data Science and how they relate to each other; Benefits, challenges, application areas and use-cases; Basic machine learning process and familiarization with key steps; Tools for developing intelligent applications.

Cybersecurity and Blockchain: Introduction to Information Security, Cyber Crime, Computer Ethics and Security Policies, Blockchain and its working, key features, attributes and applications.