SYMBIOSIS INTERNAITONAL (DEEMED UNIVERSITY)
Ph D ENTRANCE TEST

The Syllabus of Computer Science

Operating System: Multiprogramming, multiprocessing, and multitasking, Virtual memory, paging, fragmentation, Mutual exclusion. Critical regions, lock and unlock, CPU scheduling, I/O scheduling, Resource scheduling, Deadlock and scheduling algorithms. Unix System, Windows System.

Database Concepts: Basic concepts, Database Modeling, The Relational Data Model, SQL, Integrity and Security, Relational Database Design, Object-Oriented Databases, Distributed and Cloud, Databases, Big Data.

Computer Networks: The OSI model, TCP/IP model, Local area Networks (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN), Wireless Networks, Switch/Hub, Bridge, router, Gateways, Concatenated virtual circuits, Tunnelling, Fragmentation, Firewalls, Cryptography - public key, secret key. Domain Name System (DNS) - Electronic mail and World Wide Web (WWW). The DNS, Resource Records, Name Servers. E-mail architecture and Servers.

Data Warehouse: Environment, Dimensional Modeling, Extract Transform and Load (ETL), Online Analytical Processing (OLAP), Business Intelligence (BI)
Data mining: Knowledge Representation, Data preprocessing, Association rules, Classification, Clustering.