

## SBTE Bihar – Semester-1 FULL IMPORTANT QUESTIONS (HIGH CHANCE)

### UNIT 1 – Basics of Computer System

1. Define computer system. Explain its components.
2. Explain generation of computers with examples.
3. What is motherboard? Describe its major components.
4. Explain input and output devices with examples.
5. What are peripherals? Give examples.
6. Difference between front-end and back-end of system unit.
7. Define primary and secondary storage with examples.
8. Explain registers, CU, ALU in CPU.
9. What is bus? Explain address, data and control bus.
10. What is search engine? Explain search query.
11. Explain Digital India platforms: BHIM, DigiLocker, mParivahan, NPTEL.

### UNIT 2 – Digital Logic and Number System

1. Explain different number systems (Binary, Octal, Decimal, Hexadecimal).
2. Convert:  $(100110)_{10}$  to decimal,  $(345)_{10}$  to binary,  $(2F1)_{16}$  to decimal.
3. Explain BCD with example.
4. Draw logic symbols of AND, OR, NOT, XOR, NAND, NOR.
5. Write truth tables of all basic logic gates.
6. Explain universal gates. Why NAND & NOR are universal?
7. Implement AND using NAND gate.
8. Implement OR using NOR gate.

### UNIT 3 – Computer Software and Operating System

1. Define computer software. Explain its types.
2. Distinguish between system software & application software.
3. Explain features of operating system.
4. Functions of operating system – explain any six.
5. Explain batch operating system.
6. Explain time sharing OS.
7. Real time OS with examples.
8. Distributed OS benefits.
9. Network OS features.
10. Mobile OS examples.
11. Explain Windows OS history and features.

12. Explain Linux architecture with diagram.
13. Kernel mode vs user mode.

#### UNIT 4 – Computer Network & Internet Tools

1. Define computer network. Explain its advantages.
2. Explain LAN, MAN, WAN.
3. Explain bus, ring, star, mesh topology with diagram.
4. Networking devices: Hub, Switch, Router, Bridge, Modem, Repeater, Gateway, Access Point, NIC.
5. Define transmission modes (Simplex, Half Duplex, Full Duplex).
6. What is modulation? Explain analog & digital modulation.
7. Wired media: Twisted pair, Coaxial, Fiber optics.
8. Wireless media: Infrared, Radio, Satellite.
9. Explain Internet & Intranet with differences.
10. What is URL? Explain with example.
11. Explain IPv4 addressing scheme.
12. Define netid, hostid, subnet mask.
13. Need of IPv6.

#### UNIT 5 – Information Security

1. What is information security? Why is it needed?
2. Explain CIA triad: Confidentiality, Integrity, Availability.
3. Define Cybersecurity terms: vulnerability, threat, attack.
4. Explain cryptography with example.
5. Explain encryption & decryption.
6. Cyberattacks: Malware, MITM, DoS, SQL Injection, Phishing, Password cracking.
7. What is firewall? Explain its uses.
8. Explain cyber laws under IT Act 2008 (Section 66 & 67).