

Tribhuvan University  
Institute of Science and Technology  
2074



Bachelor Level / First Year/ First Semester/ Science  
**Computer Science and Information Technology (CSc. 109)**  
(Introduction to Information Technology)

Full Marks: 60  
Pass Marks: 24  
Time: 3 hours.

*Candidates are required to give their answers in their own words as far as practicable.  
The figures in the margin indicate full marks.*

**Attempt any two questions:**

(2×10=20)

1. What is communication protocol? Discuss the OSI model with its layers. (2+8)
2. What is the objective of using operating system? How operating system performs process, memory and file management activities? (3+7)
3. What is data model? How ER-Model can be used to create conceptual data model? Explain with example. (3+7)

**Attempt any eight questions:**

(8×5=40)

4. What is computer system? Discuss components of computer system. (1+4)
5. Why bus is used in computer? How control bus differs from data bus? (2+3)
6. How many numbers of bits are equivalent 1 Kilobyte? Discuss the working mechanism of magnetic tape. (2+3)
7. Mention the use of plotter. How quality of printer is determined? (2.5+2.5)
8. What do you mean by Internet of Things (IoT)? As an IT expert, mention the possible applications of IoT that you have observed in Nepal. (2+3)
9. Define each of the terms confidentiality, integrity, and authentication. (5)
10. What is multimedia? Discuss the applications of multimedia. (1+4)
11. What is BigData? How centralized database is different than the distributed database? (1+4)
12. Convert  $(10.4)_{10}$  to binary. Add  $(10111)_2$  with  $(01111)_2$ . (2+3)