

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2023

B.Sc-I Semester

COURSE CODE (CREDITS): 22BS1CI112

MAX. MARKS: 35

COURSE NAME: Fundamentals of computer hardware and networking

COURSE INSTRUCTORS: Dr. Nishant Sharma

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. Explain the importance of memory interfacing in a computer system. Provide a detailed overview of the key considerations and challenges involved in interfacing processors with memory. Additionally, discuss how advancements in memory technologies have influenced the design and performance of modern computer systems. Provide real-world examples to illustrate your points. [CO-1] [5 marks]

Q2. Explain working of a processor by drawing a comprehensive block diagram of a Central Processing Unit (CPU) and explain the functions of each major block in detail. [CO-1] [5 marks]

Q3. Explain the key differences between IDE and SATA devices, focusing on Hard Disk Drives (HDDs) and CD/DVD Drives. Discuss the advantages of SATA over IDE in terms of data transfer rates, cable management, and overall performance. Provide examples of scenarios where each interface is commonly used and explain the factors influencing the choice between IDE and SATA devices in modern computer systems. [CO-3] [5 marks]

Q4. Write short notes on:

1. Solid State Drives.
2. VGA and SVGA cards
3. Laser printer
4. BIOS
5. CRT, LCD and LED display

[CO-2] [CO-3] [2*5=10 marks]

Q5. Explain the concepts of physical and logical topologies in network design. Discuss the Bus, Star, Ring, and Mesh topologies, highlighting their advantages and disadvantages. Provide insights into how the choice of topology can impact network performance, scalability, and fault tolerance. [CO-4] [CO-6] [7 marks]

Q6. Detail the advantages of Fiber optic cables over traditional copper-based cables such as STP, UTP, and Coaxial by highlighting the key features of Fiber optic cables. Provide examples of situations where Fiber optic cables are preferred for data transmission. [CO-6] [3 marks]

LUT TEST 3 EXAMINATION DEC-2023