TOPIC 1: Processors & Architecture (İşlemciler ve Mimari)

Q1: What is the main difference between "Monolithic" and "Chiplet" design?

(Monolitik ve Chiplet tasarımı arasındaki temel fark nedir?)

- **Answer:** Monolithic design uses one single large chip. Chiplet design connects multiple smaller chips together. Chiplets are cheaper to produce and more flexible.

Q2: Why is RISC-V architecture important for the future?

(RISC-V mimarisi gelecek için neden önemlidir?)

- **Answer:** RISC-V is an open-source architecture. It is free to use and does not require a license fee. This allows companies to design custom processors easily.

TOPIC 2: AI Accelerators (Yapay Zeka Hızlandırıcıları)

Q3: What is an NPU and what is its primary function?

(NPU nedir ve birincil görevi nedir?)

- **Answer:** NPU stands for Neural Processing Unit. It is a specialized processor designed for Artificial Intelligence (AI) tasks. It is more energy-efficient than a CPU for AI operations.

Q4: Compare GPU and TPU briefly.

(GPU ve TPU'yu kısaca karşılaştırın.)

- **Answer:** GPU is designed for graphics and general parallel processing. TPU (Tensor Processing Unit) is designed by Google specifically for machine learning and deep learning tasks.

TOPIC 3: Memory & Storage (Bellek ve Depolama)

Q5: Why is HBM (High Bandwidth Memory) faster than DDR5?

(HBM neden DDR5'ten daha hızlıdır?)

- **Answer:** HBM stacks memory chips vertically (3D stacking) and places them very close to the GPU. This short distance allows massive data transfer speed.

Q6: What is the advantage of NVMe SSD over SATA SSD?

(NVMe SSD'nin SATA SSD'ye göre avantajı nedir?)

- **Answer:** NVMe uses the PCIe bus directly, which connects straight to the CPU. This provides much lower latency and higher speed compared to the old SATA interface.

TOPIC 4: Connectivity (Bağlantı ve Veri Yolları)

Q7: What is "PAM4" signaling in PCIe 6.0?

(PCIe 6.0'daki "PAM4" sinyalizasyonu nedir?)

- **Answer:** PAM4 is a signaling technology used in PCIe 6.0. It sends 2 bits of data per cycle instead of 1 bit. This doubles the bandwidth.

Q8: What is the main benefit of Thunderbolt 5?

(Thunderbolt 5'in ana faydası nedir?)

- **Answer:** Thunderbolt 5 offers very high bandwidth (up to 120 Gbps). It can transfer data, video, and power through a single cable efficiently.

TOPIC 5: Power & Cooling (Güç ve Soğutma)

Q9: What is TDP (Thermal Design Power)?

(TDP nedir?)

- **Answer:** TDP represents the maximum amount of heat a computer chip generates. It tells you how powerful your cooling system needs to be.

Q10: Why is Liquid Cooling better than Air Cooling?

(Sıvı Soğutma neden Hava Soğutmadan daha iyidir?)

- **Answer:** Liquid (water) absorbs and moves heat much faster than air. It is necessary for high-performance processors to prevent overheating.

Q11: What is the advantage of GaN (Gallium Nitride) chargers?

(GaN şarj aletlerinin avantajı nedir?)

- **Answer:** GaN chargers are smaller, lighter, and more efficient than traditional silicon chargers. They waste less energy as heat.

TOPIC 6: Future Tech (Gelecek Teknolojileri)

Q12: What is a "Qubit" in Quantum Computing?

(Kuantum Hesaplamada "Qubit" nedir?)

- **Answer:** A Qubit is the basic unit of information in a quantum computer. Unlike a classical bit (0 or 1), a Qubit can be in a state of "Superposition" (both 0 and 1 at the same time).

TOPIC 7: Sustainability (Sürdürülebilirlik)

Q13: What is "Sustainable Hardware Design"?

(Sürdürülebilir Donanım Tasarımı nedir?)

- **Answer:** It means designing electronics that consume less energy and are easy to recycle. The goal is to reduce e-waste (electronic waste).