**A-Rated Questions/Answers By Examiner**

**Q1: How many bytes are in 1 MiB (Mebibyte)?**

**Answer:**  
1 MiB = **1,048,576 bytes (1,024 × 1,024 bytes)**.

**Q2: What is the difference between 1 GB (Gigabyte) and 1 GiB (Gibibyte)?**

**Answer:**

* **1 GB (Gigabyte)** = 1,000,000,000 bytes (decimal).
* **1 GiB (Gibibyte)** = 1,073,741,824 bytes (binary).

**Q3: A file is 3 MB in size. How many bytes does it contain? (Use decimal notation)**

**Answer:**

3MB = 3×1,000,000 = 3,000,000 bytes

**Q4: Why do manufacturers use decimal (denary) memory sizes instead of binary?**

**Answer:**

* Decimal values (**1 KB = 1,000 bytes**) are **simpler for marketing**.
* Most operating systems use **binary values**, leading to confusion.

**Q5: A hard drive is labeled as "500 GB", but your computer shows less storage. Why?**

**Answer:**  
The manufacturer uses **decimal (500 GB = 500,000,000,000 bytes)**, but the computer converts it to **binary (GiB)**, showing a smaller value (around **465 GiB**).

### Write your Answers on your Notebook and Verify it on Next Screen

**Q6: How many bytes are in 2 GiB (Gibibytes)?**

**Q7: Why do files on a computer sometimes take up more space than their actual size?**

**Q8: How much storage space is required for a 100-page document if each page takes 50 KB?**

**Q9: What are the advantages of SSDs over HDDs in terms of data storage?**

**Q10: A 10-minute uncompressed audio file has a bit rate of 1,411 kbps. How much storage space does it need?**

**6. Answer:**

* **Formula:**  
  **1 GiB = 1,073,741,824 bytes**  
  **2 GiB = 2 × 1,073,741,824**  
  **= 2,147,483,648 bytes**

**Answer:** **2 GiB = 2,147,483,648 bytes**.

**7. Answer:**

* Files are stored in **blocks or clusters**, and the storage device has a **minimum allocation unit**.
* Even a small file (e.g., 10 bytes) may occupy **an entire block** (e.g., 4 KB).
* **Fragmentation** can also lead to wasted space.

**Answer:** Files take up more space due to **storage block sizes** and **fragmentation**.

**8. Answer:**

* **Formula:**  
  **Total size = Number of pages × Size per page**  
  **= 100 × 50 KB**  
  **= 5000 KB**  
  **= 5 MB**

**Answer:** **A 100-page document at 50 KB per page requires 5 MB of storage**.

**9. Answer:**

* **Faster read/write speeds** → SSDs have no moving parts, making them much quicker.
* **More durable** → No mechanical parts = less risk of damage.
* **Energy-efficient** → SSDs consume less power than HDDs.
* **Quieter operation** → No spinning disks or moving heads.

**Answer:** SSDs are **faster, more durable, energy-efficient, and quieter** compared to HDDs.

**10. Answer:**

* **Formula:**  
  **Storage = Bit rate × Time**  
  **= 1,411 kbps × (10 × 60) seconds**  
  **= 1,411 × 600**  
  **= 846,600 kb (kilobits)**
  + Convert to bytes: **846,600 ÷ 8 = 105,825 KB**
  + Convert to MB: **105,825 ÷ 1,024 ≈ 103.4 MB**

**Answer:** **A 10-minute uncompressed audio file at 1,411 kbps requires approximately 103.4 MB of storage**.