

- 1) What is Locality of Reference with respect to cache memory?
- 2) What is the importance of Cache Memory in a Computer?
- 3) Explain hierarchical memory structure with a neat and labelled block diagram?
- 4) Explain in detail the three mapping procedures related to cache memory?
- 5) Define hit ratio and explain its significance?
- 6) Find the Average Access time for a machine with a cache hit rate of 90% where the cache access time is 10ns and the memory access time is 100 ns
- 7) 2 Million Word main memory and 4K word Cache Memory are partitioned into 256 word blocks. The word addressable memory has 32-bit words-
  - i) What is the size of the main memory and cache memory?
  - ii) How many bits are required to address physical Memory?
  - iii) How many blocks are present in cache memory and main memory?
- 8) A cache memory unit with capacity of N words and block size of B words is to be designed. If it is designed as direct mapped cache, the length of the TAG field is 10 bits. If the cache unit is now designed as a 16-way set-associative cache, the length of the TAG field is \_\_\_\_\_ bits.