

Con. 2916-09.

BB-5812

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining questions.(3) Make assumptions, if any, **clearly**.

1. (a) Explain the burst cycles of Pentium. What is the difference between the burst cycle of Pentium and PCI bus. 10
- (b) Explain the interrupt subsystem on the Intel Pentium Processor with details. 10
2. (a) Explain the Branch Prediction logic of the Pentium Processor. Explain the need and operation of the BTB. 10
- (b) Write a detailed note on the Floating point operations in the Pentium. Explain what is meant by Floating point error handling. 10
3. (a) Explain the cache operation with reference to MESI states. How does it modify for Code Cache. 10
- (b) Draw the block diagram of a Pentium system using the PCI Bus. Explain each component with its functionality and configuration as applicable. 10
4. (a) Calculate the transfer rate for Read and Write transactions on the PCI Bus. Assume data if required. 10
- (b) Explain the need and working of SMM in Pentium with associated memory map. 10
5. (a) Explain the features offered by a typical RTOs. 6
- (b) Explain the Network interface as supported by QNX. 7
- (c) Explain the features offered by PCI for supporting plug and play device design. 7
6. (a) How are central resources used in PCI compliant devices ? Explain additive and subtractive decoding in case of PCI devices. 10
- (b) While explaining the terms host, function and hub pertaining to USB protocol, clearly list and clarify the various transfer types in USB. 10
7. Write short notes on the following :- 20
 - (a) System management mode in the Pentium
 - (b) "Green Nature" of the PCI Bus
 - (c) Pairing Rules of U and V pipelines
 - (d) Data cache of the Pentium processor.