

M.Tech.-Computer Science and Engineering (Old) / (CBCS) (New) Sem I  
**906 - PCSS11 : Advanced Computer Architecture**

P. Pages : 1

Time : Three Hours



**GUG/S/18/3815**

Max. Marks : 70

- Notes :
1. All questions carry equal marks.
  2. Illustrate your answers wherever necessary with the help of neat sketches.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.

1. a) What is cache performance optimization and discuss first and second optimization. **8**  
b) Explain hardware based speculation. **6**
2. a) What is dynamic scheduling ? How does it help to avoid data Hazards. **9**  
b) How the pipeline is implemented. **5**
3. a) Explain in detail the impact of virtual machines on virtual memory and I/O. **9**  
b) Discuss flash memory. **5**
4. Write a detail note on compilers and its structure ? How does compilers helps to optimize the performance of programming. **14**
5. a) Explain the concept of software parallelism and hardware parallelism. **8**  
b) Write a note on vector super computers. **6**
6. What are different addressing modes and explain each one with suitable example. Also discuss displacement addressing mode. **14**
7. a) Discuss hardware based speculations and compare it with software based speculation. **10**  
b) What is memory consistency. **4**
8. a) Discuss multiprocessor Architecture & its issues and approaches. **8**  
b) Write a note on flash memory. **6**

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