**Presentation-1**

**1. ANSI-SPARC three-level architecture of DBS**

1. **Describe the ANSI-SPARC three-level architecture of DBS**
2. **What are the advantages of this architecture ？**
3. **What is Data Independence?**
4. **What are Logical Data Independence and Physical Data Independence respectively?**

**2. Data model**

**(5) What is Data model ?**

**(6) what is Conceptual model?**

**(7) Write the function and components of Data model.**

**(8) Why can DBS provide Data Independence？**

**(9)Tell the association and difference (Connection) between Conceptual Schema and Conceptual Model**

3．In the following items, Which belong to conceptual schema change, internal schema change, external schema change, respectively?

(A) Index, Hash->B+ tree

(B) add/remove an attribute

(C) Add a new relation

(D) Remove a field in user’s view

(E) Name char[10]-> varchar[15]