**United College of Engineering and Research, Prayagraj**

**Database Management System (KCS-501)**

**Assignment-5**

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| **Q. No.** | **Question** | **CO** | **Bloom’s level** |
|  | Discuss about deadlock prevention schemes. | CO5 | L2 |
|  | What is deadlock? What are necessary conditions for it? How it can be detected and recovered? | CO5 | L4 |
|  | Write the salient features of graph based locking protocol with suitable example. | CO5 | L2 |
|  | What do you mean by multiple granularity? How the concurrency is maintained in this case. Write the concurrent transactions for the following graph.  • T1 wants to access Item C in read mode  • T2 wants to access item D in Exclusive mode  • T3 wants to read all the children of item B  • T4 wants to access all items in read mode | CO5 | L3 |
|  | What are multi version schemes of concurrency control? Describe with the help of an example. Discuss the various Time stamping protocols for concurrency control also. | CO5 | L4 |
|  | What are the pitfalls of lock-based protocol? | CO5 | L2 |
|  | Describe major problems associated with concurrent processing with examples. What is the role of locks in avoiding these Problems. | CO5 | L2 |
|  | Explain the phantom phenomenon. Devise a time stamp based protocol that avoids the phantom phenomenon. | CO5 | L2 |
|  | Define Exclusive Lock. | CO5 | L1 |
|  | What is Two phase Locking (2PL)? Describe with the help of example. | CO5 | L3 |