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

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

**Assignment-3**

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| **Q. No.** | **Question** | **CO** | **Bloom’s level** |
|  | Why do we normalize database? | CO3 | L1 |
|  | What are the different types of anomalies associated with database? | CO3 | L2 |
|  | Define partial functional dependency. Consider the following two sets of  functional dependencies F= {A ->C, AC ->D, E ->AD, E ->H} and  G = {A ->CD, E ->AH}.  Check whether or not they are equivalent. | CO3 | L3 |
|  | Define Minimal Cover. Suppose a relation R (A,B,C) has FD set  F ={A→B, B→C, A→C, AB→B, AB→C, AC→B} convert this FD set into minimal cover. | CO3 | L3 |
|  | Write the difference between 3NF and BCNF. Find normal form of relation  R(A,B,C,D,E) having FD set F={ A->B,BC->E,ED->A}. | CO3 | L3 |
|  | Write difference between BCNF and 3 NF. | CO3 | L2 |
|  | Short Notes of the Following   1. MVD or JD ( ii) Normalization with advantages | CO3 | L1 |
|  | Consider the universal relational schema R (A, B, C, D, E, F, G, H, I, J) and a set of following functional dependencies.  *F* ={ *AB*🡪*C*, *A*🡪*DE*, *B*🡪*F*,*F* 🡪*GH*,*D*🡪*IJ* }  Determine the keys for R? Decompose R into 2ndNormal Form. | CO3 | L4 |
|  | Consider R = (A, B, C, D, E, F, G, H) and  F= { AB 🡪 C, BC 🡪 D, E 🡪 F, G 🡪 F, H 🡪 A, FG 🡪 H }  Is the decomposition of R into R1(A, B, C, D), R2(A, B, C, E, F), R3(A, D, F, G, H) lossless? Is it dependency preserving? | CO3 | L4 |
|  | Consider R = (A, B, C, D, E) and  F= { A 🡪 B, BC 🡪 E, ED 🡪 A }  (a) List all the candidate keys for R.  (b) Is R in third normal form?  (c) Is R in BCNF? | CO3 | L4 |