National University of Computer and Emerging Sciences, Lahore Campus

	Course:	**Database Systems**	**Course Code:**	**CS2005**
	Program:	**BS (Computer Science)**	**Semester:**	**Spring 2023**
	Date:	**Mon 3-Apr-2023**	**Total Marks:**	**10**
	Quiz	**3**	**Max. Time:**	**10 min.**
	Section	**BCS-4H**		

Q. Consider the relation schema R (A, B, C, D, E, F, G), with FDs *F= {A→ BC, B → D, E → FG, G → A}*. Identify the best normal form that R satisfies (1NF, 2NF, 3NF, or BCNF). Justify your answer. If R is not in BCNF, decompose it into a set of BCNF relations and show your steps. Indicate which dependencies if any are not preserved by the BCNF decomposition.

Ans:

Key is E. HNF= 2NF, as FD1,2,4 violate 3NF.

BCNF Schema is R1(E F G), R2(A B C), R3(B D), R4(G A).