Time: 30 minutes   **3 Marks**

Set B

Consider the following relational schemes for a library database:

Book (Title, Author, Catalog_no, Publisher, Year, Price)

Collection (Title, Author, Catalog_no)

with the following functional dependencies:

I. { Title, Author } --> Catalog_no

II. Catalog_no --> Title, Author, Publisher, Year

III. { Publisher, Year } --> Price

Assume {Author, Title} is the key for both schemes.

a) Identify candidate keys in relation "Book"?   **(0.5 Marks)**

b) Is the relation "Book" in 2NF? Justify.   **(0.5 Marks)**

c) Is the relation "Book" in 3NF or not? Justify your answer.   **(0.5 + 0.5 marks)**

d) Is the relation "Collection" in BCNF? Justify.   **(0.5 + 0.5 Marks)**

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