

19/69/005
MOHSOUD ABIOLA POLYTECHNIC, ABEOKUTA
SCHOOL OF SCIENCE & TECHNOLOGY
COMPUTER SCIENCE DEPARTMENT
1ST SEMESTER 2023/2024 EXAMINATION

COURSE CODE: COM 312 COURSE TITLE: DATABASE DESIGN I
COURSE UNIT: 3 TIME ALLOWED: 3HRS
CLASSES WRITING PAPER: HND I COMPUTER SCIENCE (FT & PT)

INSTRUCTION: WRITE ONLY YOUR MATRIC. NUMBER ON THIS PAPER AND NOTHING ELSE.

SECTION A: ATTEMPT QUESTION 5 WITH ANY OTHER THREE (3) QUESTIONS

1a. File-based approach in managing large amount of data in Computer is less efficient compared to Databased approach. As a Computer Scientist, defend this statement with any five (5) cogent reasons to support your claim. (10 marks)

b. Define a Database and explain any four (4) of its properties. (10 marks)

2a. Describe the following in reference to the concept of Database: (i) Record (ii) Table (iii) Domain
(iv) Cardinality (v) Entity Integrity (vi) Referential Integrity (12 marks)

b. Highlight any five (5) properties of a Table. (5 marks)

c. State three (3) Relationship types. (3 marks)

3a(i). What are Attributes? (2 marks)

(ii) Describe any four (4) types of attributes with examples. (8 marks)

b(i). What is a Key? (2 marks)

(ii). Describe any four (4) types of Keys with examples. (8 marks).

4. Develop the Conceptual, Logical and Physical Models for the business scenario below:

✓ A job agency offers to find jobs for clients looking for employment. A Database System is used to record the Clients' personal and resume details. Personal details include name, address, date of birth, sex and phone number. The resume details include a history of employment and a set of qualifications. Each client is assigned to one job consultant within the agency, who negotiates with the client and endeavors to locate suitable employment for them. (20 marks)

5a. Write the SQL to create the table shown below with the name Employee and EMP_NUM as the Primary key.

Personal
resume
Agency
consultant

ATTRIBUTE (FIELD) NAME	DATA DECLARATION
EMP_NUM	CHAR(3)
EMP_LNAME	VARCHAR(15)
EMP_FNAME	VARCHAR(15)
EMP_INITIAL	CHAR(1)
EMP_HIREDATE	DATE
JOB_CODE	CHAR(3)

b. Having created the table structure in (a) above, write the SQL code to enter the rows for the table. (5 marks)

c. Use the Employee Table below to answer these questions (2 marks each):

	EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
►	01	Newns	John	G	08-Nov-00	502
	102	Senior	David	H	12-Jul-89	501
	103	Arbough	June	E	01-Dec-96	500
	104	Ramoras	Anne	K	15-Nov-87	501
	105	Johnson	Alice	K	01-Feb-93	502
	106	Smithfield	William		22-Jun-04	500
	107	Alonzo	Maria	D	10-Oct-93	500
	108	Washington	Ralph	B	22-Aug-91	501
	109	Smith	Larry	W	18-Jul-97	501

- (i) Write the SQL code to change the job code to 501 for the person whose personnel number is 107.
- (ii) Assuming that the data shown in the Employee table have been entered, write the SQL code that lists all attributes for a job code of 502.
- (iii) Write the SQL code to delete the row for the person named William Smithfield, who was hired on June 22, 2004, and whose job code classification is 500. (Hint: Use logical operators to include all the information given in this problem.)
- (iv) Add the attributes EMP_PCT and PROJ_NUM to the Employee table. The EMP_PCT is the bonus percentage to be paid to each employee.
- (v). Using a single command, write the SQL code that will enter the project number (PROJ_NUM) = 18 for all employees whose job classification (JOB_CODE) is 500.

SECTION B (Alternative to Practical): Attempt only ONE question from this section

Question One

Salesman_id	Name	City	Commission
0001	Oribogunje Ope	Abuja	0.08
0003	Ada Iku	Sagamu	0.12
0005	Femi Shakojiya	Ikeja	0.13
0004	Davis Tolu	Ede	0.11
0002	Sanni Doyi	Kano	0.15

Hint Table Name = Salesman