NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91 Cadastral Zone Nnamdi Azikiwe Express Way, Jabi-Abuja
FACULTY OF MANAGEMENT SCIENCES
DEPARTMENT OF FINANCIAL STUDIES
2025_2 EXAMINATIONS

Course Code: BFN728 **Credit Unit: 2**
Course Title: QUANTITATIVE TECHNIQUES FOR FINANCIAL DECISIONS
TIME ALLOWED: 2 Hours
INSTRUCTIONS: 1. Attempt question Number one (1) and any other two (2).
2. Question number 1 is compulsory and carries 30 marks, while the other questions carry 20 marks each
3. Present all your points in coherent and orderly manner

1. The following information relate to the occupancy rate recorded for each quarter in the past 5 years of a hotel in Lagos.

	Year				
Quarter	2010	2011	2012	2013	2014
1	0.561	0.575	0.594	0.622	0.665
2	0.702	0.738	0.738	0.708	0.835
3	0.800	0.868	0.729	0.806	0.873
4	0.568	0.605	0.600	0.632	0.670

a. Use the least-square method to calculate the regression equation **20 Marks**
b. Use the regression equation to measure the seasonal variation by computing the seasonal indexes. **10 Marks**

Note: Use a comprehensive table to show the calculations step by step for simplicity.

2a. A transportation company operates two types of Trains for commercial activities nationwide, the LOC105 and the BAC110. The LOC105 is capable of carrying 40 passengers and 30 tons of cargo, whereas the BAC110 is capable of carrying 60 passengers and 15 tons of cargo. The company is contracted to carry at least 480 passengers and 180 tons of cargo each day. If the cost per journey is N500 for a LOC105 and N600 for a BAC110.

a. Formulate the problem mathematically **5 Marks**
b. How many trips of the two trains will minimize cost? **8 Marks**

2b. Suppose Fiyin deposits ₦500, ₦1000, ₦1200, ₦1500 and ₦2000 at the beginning of very consecutive years in his savings account earning 10% interest compounded annually, how much will he save at the end of 5 years? **7 Marks**

3. The probability of a business man hitting a particular set target is 1/3. If he attempts 3 times, what is the probability of

(a) meeting all targets **3 Marks**

(b) missing all the targets **3 Marks**

(c) meeting one only **5 Marks**

(d) meeting two only and **5 Marks**

(e) meeting at least one targets only? **4 Marks**

4. A study was carried out on 200 students who offered different courses at FHN College. 85 offered Actuarial Science, 85 offered Supply Chain Management and 80 Project Management. 30 of these students offered Actuarial Science and Supply Chain Management. Those that offered Supply Chain Management and Project Management are 35, 25 offered Actuarial Science and Project Management. However, it was discovered that 30 students did not offer any of the listed courses.

You are required to find:

a. The number of students that offered all three courses.
b. The number of students that offered Actuarial Science and Project Management.
c. The number that offered two courses only.
d. The number that offered one course only

20 Marks