NATIONAL OPEN UNIVERSITY OF NIGERIA
UNIVERSITY VILLAGE, JABI- ABUJA
FACULTY OF MANAGEMENT SCIENCES
JANUARY 2018 EXAMINATIONS

COURSE CODE: MBF 839   **CREDIT UNIT: 3**
COURSE TITLE: Quantitative Technique for Banking & Finance
TIME ALLOWED: 3 Hours
Instructions:
1.   **Attempt question number one (1) and any other three (3).**
2.   **Question number 1 is compulsory and carries 25 marks while the other 3**
 questions carry 15 marks each. Present all your points in coherent and orderly manner.

1(a) Mention 9 (nine) reasons for holding stocks?   **(9 marks)**

1(b) A manufacturer produces three types of plastic fixtures. The time required for moulding, trimming and packaging is given in the table below. Time are given in hours per dozen fixtures

Process	Type A	Type B	Type C	Total time available
Moulding	1	2	3/2	12,000
Trimming	2/3	2/3	1	4,600
Packaging	½	1/3	1/2	2,400
Profit	₦11	₦16	₦15	-

Using simplex method, how many dozen of each type of fixture should be produced to obtain a maximum profit?   **(16 marks)**

2(i) Slot Nigeria Limited has an annual demand of 1,400 units for a brand of phone. The cost of a typical phone to Slot is ₦400. Carrying cost is estimated to be 20% of the unit cost, and the ordering cost is ₦25 per order. If Slot order in quantities of 300 units or more, it can get a 5% discount on the cost of the phones. Should Slot take the quantity discount? **(7 marks)**

2(ii) Define EOQ and state its basic assumptions?   **(8 marks)**

3(i) Define annuity with examples?   **(5 marks)**

(ii) A 10% irredeemable bond, denominated in naira, pays interest every six months. The interest yield required by investors in the bonds is 8% per annum. What is the market value of these bonds? **(5 marks)**

(iii) Suppose that a 10 percent ₦I,000 bond will pay ₦100 annual interest into perpetuity? What will be the value of the bond if the market yield or interest rate were 15 percent? **(5 marks)**

(4a) Mention six advantages of quantitative skills for managers? **(6 marks)**

(4b) You have just graduated with a Master of Business Administration from a prestigious university in Nigeria. On the basis of your academic performance and years of work experience, XYZ Consulting Limited offered you an appointment as a Senior Consultant. After a year experience on the job, your Line Manager approached you to lead a meeting with a client, ABC Hotel. During the meeting, the MD of ABC Hotel informed you that room registration in the hotel have been recorded for the past nine years. Management would like to determine the trend of guest registration in order to project future occupancy. This estimate would help the hotel determine whether a future expansion will be needed.

Given the following time-series data, develop a regression equation relating registration to time. Then forecast year 11's registrations. Room registrations are in thousands.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
17	16	16	21	20	20	23	25	24

(9 marks)

(5a) TD Nigeria Limited wants to invest in equipment and the company has two options. The first option is to invest in equipment **A** costing ₦3, 500 with an expected life of 5 years and cash flow of ₦550 a year. The second option is to invest in equipment **B** costing ₦4, 200 with an expected life of 5 years and cash flow of ₦750 a year. The rate of return expected from capital is 10% for both options. As the General Manager of this company, kindly advise if the investment is valuable and which option is best for TD Nigeria Limited? **(10 marks)**

(5b) Assuming you placed ₦3, 500 in a savings account of a bank at 7% interest rate. What will be the value at the end of the eleventh year? **(5 marks)**

6(a) Given that $(x - 4)(x + 5) = x(x - 1)$, solve for x? **(3 marks)**
6(b) Find the sum of the 50th term of the sequence 1, 3, 5, 7, 9, …… **(4 marks)**
6(c) Find the sum of the geometric series $2 + 6 + 18 + 54 + ……$ **(4 marks)**
6(d) How many terms are there in the geometric progression 2, 4, 8, …, 128? **(4 marks)**