NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA
FACULTY OF MANAGEMENT SCIENCES
2024_1 EXAMINATION

COURSE CODE: **MBF839** **CREDIT UNIT: 2**
COURSE TITLE: **QUANTITATIVE TECHNIQUES FOR BANKING AND FINANCE**
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

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1. JKB International plc manufactures and sells a range of machine tool accessories. The company is considering an investment of N13.0 million in new production plant and machinery for the product. The new facility is to be operational from 1 January 2022. It will have a life of five years and at the end of its life it will have a residual value of N1.0 million. It is expected that the facility will have significant benefits. Firstly, it will increase JKBs' production output of diamond milling tools by 10%. Total contribution from new sales is expected to be N2,865,000 in 2022 increasing annually by 5% per annum until 2026. Secondly, it will reduce the product's direct labour and direct material costs by 20% per unit which will result in savings of N1,680,000 on existing production in 2022. Having made these cost savings, the company expect costs to remain constant to 2026 due to continual efficiency improvements. JKB pays corporation tax at the rate of 20% on its taxable profits which is paid one year in arrears. (Assume that net cash flow is the same as taxable profit).

   a. Given a cost of capital equal to 11.3%, Use the NPV approach to prepare a report on the viability of the project and
   b. Advise the company appropriately. **(30 marks)**