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

Course Code: Business Mathematics
Course Title: BUS729
Credit Unit: 2
Instructions: 1. Indicate your Matriculation Number clearly
2. Attempt Question 1 and any other two (2) questions
3. Question 1 is compulsory and carries 30 marks while the other 2 questions carry 20marks each
4. Present all your points in coherent and orderly manner
Time Allowed: 2 Hours

1. In a group of 70 students in a science school, 37 students like reading in the Science library, 52 students like reading in the Art library and each student likes at least one of the two libraries. How many students like reading in both Science and Art library? 20 Marks

1b. Let A and B be any two-multiplication conformable/compatible matrices such that AB = 0. Is AB zero matrix as stated? 10 Marks

2. Let f (x) = X^2 – 5x + 6. Find f (A), if A = $\begin{matrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{matrix}$ 20 Marks

3. Given A = $\begin{matrix} 1 & 3+a & 2b+a \\ 1+b & a & 5 \\ b^2 & 1 & a \end{matrix}$ 20 Marks

B = $\begin{bmatrix} 0 & -1 & c \\ 4 & a-1 & 5 \\ b^2 & 1 & a-1 \end{bmatrix}$

and I (the 3 x 3 identity matrix). Find the values of the constants a, b, c respectively, such that A = B + I

4a. Find the number of ways the letters of the MISSISSIPPI can be arranges 10 Marks

4b. Let B = $\begin{matrix} 0 & -1 & n \\ ¼ & 7 & ½ \\ -3 & 2 & 1 \end{matrix}$

The minor of entry B23 of the matrix B above is? 10 Marks