UNIVERSITY OF NORTH BENGAL
B.Com. Major 2nd Semester Examination, 2025

ACFIMAJ203/BMNGMAJ203-COMMERCE

BUSINESS MATHEMATICS-I

Time Allotted: 2 Hours 30 Minutes

Full Marks: 60

The figures in the margin indicate full marks.

GROUP-A

1. Answer any *four* questions: $3×4 = 12$

   (a) If the 2nd term of a GP series is 24 and the 5th term is 81, find the series. 3

   (b) If the roots of the equation $ax^2 + bx + c = 0$ be in the ratio 2:3, show that $6b^2 = 25ac$. 3

   (c) Find the equation of the straight line passing through (−1, 2) and having slope $−2/5$. 3

   (d) Find the middle term in the expansion of $(x^2 + 1/x)^9$. 3

   (e) Monthly income of two persons are in the ratio 4:5 and their monthly expenses are in the ratio 7:9, if each saves Rs 50 per month, find their monthly incomes. 3

   (f) Show that $\log_3 \log_3 27 = 1$. 3

GROUP-B

2. Answer any *four* questions: $6×4 = 24$

   (a) Find the sum upto *n* terms of the series $2 + 22 + 222 + \dots + n^{th}$ term. 6

   (b) If $a^x = b^y = c^z$ and $b^2 = ac$, show that $\dfrac{1}{x} + \dfrac{1}{z} = \dfrac{2}{y}$. 6

   (c) In how many years will a sum of money treble itself at 5% per annum compound interest. 6

   Given $\log 2 = 0.3010$; $\log 3 = 0.4772$; $\log 7 = 0.8451$.

   (d) The expenses of a hostel are partly fixed and partly vary with the number of boarders. When there are 60 and 80 boarders respectively, the expenses per boarder are Rs 280 and Rs 250 respectively. Find out the expenses per boarder when there are 120 boarders. 6

   (e) In how many ways can the letters of the word "EXAMPLE" be arranged so that 6

   (i) the two E's will be always together

   (ii) the two E's will never come together.

1

(f) The three terms of a series are in GP, show that the logarithm of these three terms are in A.P.　　　6

GROUP-C

Answer any *two* questions　　　　　　　$12 \times 2 = 24$

3. (a) Find the term independent of x in the expansion of $(9x - 1/3x)^{12}$.　　　6

   (b) Show that $\dfrac{1}{1 + x^{a-b} + x^{a-c}} + \dfrac{1}{1 + x^{b-c} + x^{b-a}} + \dfrac{1}{1 + x^{c-a} + x^{c-b}} = 1$.　　　6

4. (a) Find the equation of the straight line passing through the point of intersection of the lines $2x + y - 5 = 0$ and $4x - 9y + 1 = 0$ and is perpendicular to the line $6x - 7y + 8 = 0$.　　　6

   (b) If one root of $ax^2 + bx + c = 0$ be square of the other, show that $b^3 + ac^2 + a^2c = 3abc$.　　　6

5. (a) Three terms of a series are in G.P. and their product is 216. If 4 is added to the 1st term and 6 to the 2nd term, the resulting numbers are in A.P. Find the numbers in GP.　　　6

   (b) Mr. X borrows Rs 20,000 at 4% Compound Interest and agrees to pay both the principal and the interest in ten equal instalments at the end of each year. Find the amount of these instalments.　　　6

6. (a) There are two groups, each containing 5 questions in a paper of Mathematics. In how many ways can you select 6 questions, taking atleast 2 questions from each group?　　　6

   (b) If $\dfrac{\log x}{b-c} = \dfrac{\log y}{c-a} = \dfrac{\log z}{a-b}$, show that $x^a \cdot y^b \cdot z^c = 1$.　　　6

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UNIVERSITY OF NORTH BENGAL
B.Com. Major 2nd Semester Examination, 2025

ACFIMAJ204/BMNGMAJ204-COMMERCE
COMPANY LAW

Time Allotted: 2 Hours 30 Minutes   Full Marks: 60

The figures in the margin indicate full marks.

GROUP-A

1.	Answer any *four* questions:	3×4 = 12
	(a) Define Audit Committee.	3
	(b) What is Red Herring Prospectus?	3
	(c) Define the term "Whistle-Blowing".	3
	(d) Differentiate between a Managing Director and a Manager.	3
	(e) What do you mean by Director Identity Number (DIN) under the Companies Act, 2013?	3
	(f) Define the term "Dematerialization" of securities.	3

GROUP-B

2.	Answer any *four* questions:	6×4 = 24
	(a) List the essential characteristics of a company incorporated under the Companies Act, 2013.	6
	(b) Differentiate between Ordinary Resolution and Special Resolution.	6
	(c) Discuss the legal provisions aimed at preventing insider trading under the Companies Act, 2013.	6
	(d) Discuss the procedure for appointment of Women Directors.	6
	(e) Discuss the different modes of appointment of Directors in a Company.	6
	(f) Outline the objectives and key provisions related to Corporate Social Responsibility (CSR) committee under The Companies Act, 2013.	6

GROUP-C

Answer any *two* questions   12×2 = 24

3. (a) Distinguish between Memorandum of Association (MOA) and Articles of Association (AOA).   6+6
   (b) Discuss the concept of "Lifting of Corporate Veil".

4. Define 'Winding Up' of a Company. Discuss the different modes of winding up of a Company under the Companies Act, 2013 (Winding Up by the Tribunal and Winding up by the Members).   4+(4+4)

5. (a) Distinguish between a One Person Company (OPC), a Private company and a Public limited company.   6+6
   (b) Discuss briefly the process for online registration of a company.

6. (a) Discuss briefly the legal position of a director in relation to their acts as trustees and agents of the company.   6+6
   (b) What are the requisites of a valid meeting?

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