

Federal State Autonomous Educational Institution of Higher Education

**NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS**

Graduate School of Business

Preparation programme for the interdisciplinary admission exam to the
master's degree programme

"International Management"
38.04.02 Management

Discipline:
"Management and Business Communications"
GMAT-based
(English)

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MASTER'S DEGREE PROGRAMME "International Management"

Interdisciplinary Exam "Management and Business Communications" (GMAT-based) (Intake 2023)

1. General Information

The admission exam gauges the level of applicants' competencies in the field of management, English Language skills, as well as general logical and analytical skills and abilities, including the skills of quantitative data analysis and work with graphical information, received by applicants during the previous studies that are necessary for applicants to complete successfully their master's studies in Master in International Management programme.

This is a written exam in the English language and includes test (closed) questions. Each section of the test 1 and 2 contains a multiple choice of 5 answers. One correct answer is required. One astronomical hour (60 minutes) is allotted to perform all tasks of each section. The total duration of the exam is **120 minutes**.

The use of reference books, dictionaries, computer equipment and other auxiliary materials is not permitted.

The Interdisciplinary Exam "Management and Business Communications" consists of the following sections:

Format of the interdisciplinary exam "Management and business communications"			GMAT compliance
Test part		Score	
1.	Quantitative section (30 tasks, 1.67 points each)	50	GMAT Math (Quantitative section)
2.	Verbal section (30 tasks, 1.67 points each)	50	GMAT Verbal section
	TOTAL	100	

2. Contents of the sections of the exam

2.1. Quantitative Section

Quantitative section measures applicant's ability to reason quantitatively, solve quantitative problems, and interpret graphic data. Two types of questions are used in the Quantitative section:

- Problem solving - 15 questions;
- Data Sufficiency - 15 questions.

To answer the questions in the section "Problem Solving", an applicant must demonstrate:

- mastery of basic mathematical skills;
- understanding of basic mathematical concepts;
- the ability to reason quantitatively and solve quantitative problems.

In order to answer the questions in the section "Data sufficiency", an applicant must be able to:

- analyze quantitative problems;
- determine what information is needed to make the right decision;
- determine the amount of sufficient information needed to solve the problem.

Each Data sufficiency problem consists of a question and two statements, labeled (1) and (2). The applicant must decide whether the data given are sufficient for answering the question. The applicant should indicate one of the following answer choices:

- Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient;
- Statement (2) ALONE is, but statement (1) alone is not sufficient;
- BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient;
- EACH statement ALONE is sufficient;
- Statements (1) and (2) TOGETHER are not sufficient.

The tasks of the quantitative section cover the following key topics:

2.1.1. Arithmetic and algebra

- Sets – basic terms. Set operation. A Venn diagram.
- Number axis. Positive, negative numbers. Absolute value and its geometric sense.
- Natural numbers (N). Prime and composite number. Divisor, multiple. Greatest common divisor and lowest common multiple.
- Criterion for divisibility for 2, 3, 5, 9, 10. Division with a remainder.
- Integer numbers (Z). rational quantities (Q), addition, subtraction, multiplication and division.
- Proportions.
- Decimal and ordinary fraction, its transformation one to the other. Round-up with prescribed accuracy.
- Power with natural, integer and rational value. Arithmetical root. Operations with powers. Logarithm.
- Percent calculation. Bank interest, simple and compound interest.
- Function, function domain and range. Function assignment (table, graph). Function increasing and decreasing, periodicity, parity, oddity. The maximum and minimum values of a function. Graph of a function. Linear, quadratic, exponential, power, logarithmic functions.
- Polynomial with one variable. Root of polynomial. Properties and graph of quadratic polynomial. Formula for quadratic polynomial roots. Vieta's theorem.
- Numerical expression. Expression with variables. Identity and equity. Algebraic manipulation, formulas for short multiplication.
- Equation. The root of an equation. Equivalent equations.
- Two combined linear equations with two variables and its properties.
- Inequalities. Properties of numerical inequalities. Solving inequality with a variable. Equivalent inequalities.
- Arithmetic and geometric series.
- The method of coordinates on a plane (foundations).

2.1.2. Combinatorial calculus, probability theory and statistics.

- Permutations, arrangements, combinations.
- Arithmetic mean, median, mode.
- Mean square deviation.

2.1.3. Geometry

- Line, ray, segment, broken line; segment length. Angle, the measure of angle. Vertical and contiguous angles. Parallel lines, angles with parallel lines.
- Triangle. Median, bisector, altitude. Criteria for equivalence of triangles. The interior

angles of a triangle and its sum. Types of Triangles. Properties of isosceles and equilateral triangles.

- Right-angled triangle. Pythagorean theorem, Pythagorean triangle.
- Quadrangle: parallelogram, rectangle, rhomb, square, trapezium.
- Circumference and circle. Center of circle chord, diameter, radius. Tangent and secant of a circle.
- Circuit.
- Arc of circle, arc distance. Sector, segment. Central and inscribed angle, their properties. Regular polygon.
- Area of triangle, parallelogram, rectangle, trapezium.
- Similarity. Criteria for similarity of triangles. Relations between linear elements and areas of similar triangles.
- Formula for surface area and volume of prism.
- Formula for surface area and volume of pyramid.
- Formula for surface area and volume of cylinder.
- Formula for surface area and volume of cone.
- Formula for volume of sphere.

2.1.4. Logic

- Necessary and sufficient condition.

2.2. Verbal Section

Verbal Section consists of 30 questions of three types:

- Reading Comprehension - 10 questions;
- Critical Reasoning - 10 questions;
- Sentence Correction - 10 questions.

Verbal Section evaluates the ability of applicants to understand the text, assess the quality of statements, find errors in the sentence that do not meet the generally accepted standards of the official business style of written English. Applicants must demonstrate the ability to:

- *understand words and statements in the text*: Questions of this type test the understanding of the text as a whole and the individual terms used in it.
- *understand the logical relationship between basic thoughts and concepts in the text*: Questions of this type require identifying the strengths and weaknesses of an argument or assessing the significance of an argument in the text.
- *draw conclusions from the facts and statements in the text*: Questions of this type test the ability to examine factual statements or information and, based on this information, draw a general conclusion.
- *understand and analyze the quantitative information presented in the text*: Questions of this type test applicants' ability to interpret numerical data or use simple arithmetic to draw conclusions about the information presented in the text.

The applicant is expected to be able to understand lexical units typical for scientific and formal English language styles (Wall Street Journal, New York Times, various scientific publications, etc.).

2.2.1. Reading Comprehension Questions

Reading comprehension questions consist of written passages of the scientific text up to 350 words long. The questions are compiled in such a way that to answer any of them applicants need to understand the basis of what is stated or implied in the information gathered from the reading and be able to interpret the passage correctly.

The following types of questions are used in this section:

- a question on understanding the main idea of a passage,
- a question on understanding the specific content of a passage,
- a question requiring a conclusion from a passage.

To prepare for the entrance exam in this section, students are recommended to cover the following topics:

- Reading strategies: detailed reading and skimming.
- Text structure: paragraph structure.

2.2.2. Critical Reasoning Questions

Critical reasoning questions consist of an argument, a question and five choices of answers. The questions in this section are designed to test applicants' reasoning skills involved in an argument construction and evaluation of its validity. The materials on which questions are based are drawn from a variety of sources and answering the questions requires no specialized knowledge of any particular field. In order to give the correct answer, it is necessary to understand the following basic areas:

- *Argument construction*: Questions in this category require an understanding of the logical structure of an argument, underlying assumptions, well-supported explanatory hypotheses, and parallels between structurally similar arguments, as well as principles of properly drawn conclusions.
- *Argument evaluation*: These questions may ask you to analyze a given argument and to recognize such things as factors that would strengthen or weaken the given argument; reasoning errors committed in making that argument; and aspects of the method by which the argument proceeds.

To prepare for the entrance exam in this section, students are recommended to cover the following topics:

- Reasoning logic analysis: proofs, conclusion, assumption.
- The skill of making logical conclusion of what you have read and understanding what the statement is based on. Methods of forward and backward reasoning. Induction. Comparison and analogy. Cause-and-effect relationship. Deduction.
- Search for additional validation and contradiction.

2.2.3. Sentence Correction

In the sentence correction questions, an applicant should choose one of the five ways of phrasing the underlined part of the original sentence and select the answer that produces the best sentence. In order to answer the questions in this section, it is important to follow the requirements of standard written English, paying attention to stylistics and grammar. Applicants should also demonstrate their ability to make the sentence clear, and free of grammatical and stylistic errors.

In order to choose the right answer, applicants must demonstrate the following skills:

- *choose a grammatically correct expression*: The correct sentence must comply with all the rules of written English, e.g., subject/predicate coordination, the correctly chosen verb tenses, the pronoun case. The correct sentence must not contain incorrectly used adverbial phrases, incorrectly used idioms, errors in parallel structures.
- *Ability to choose stylistically correct expression*: Stylistically correct sentence expresses the idea clearly and briefly. This does not mean that a sentence with the least number of words and the simplest words will be the correct answer. It means that in the right sentence there are no words that do not carry any semantic load, making it difficult to understand complex constructions. In addition, the right sentence uses words in the right meaning and in the right context.

To prepare for the entrance exam in this section, students are recommended to cover the following topics:

- Rules of grammar and command of formal business English;
- Tenses;
- Subject/predicate coordination;
- Adverbial phrases;
- Pronoun;

- Comparative structures;
- Parallel structures;
- Prepositions and idioms.

3. Recommended literature for the admission test preparation

Main Literature:

1. The Official Guide for GMAT Review, 2009. – New York: John Wiley & Sons, 12th ed.
2. GMAC (Graduate Management Admission Council) 2019. GMAT Official Guide 2020 Bundle: 3 Books + Online Question Bank. – New York: John Wiley & Sons, 1 ed.
3. MacKenzie Ian. 2010. English for Business Studies. – Cambridge University Press, 3rd ed.

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