UNIVERSITY OF BELGRADE
FACULTY OF MATHEMATICS
ENGLISH LANGUAGE MIDTERM TEST
Preliminary Version

Date:
Duration: ____3 hours_____
Student: _____
Index Number: _____

GENERAL INSTRUCTIONS

1. Read all instructions carefully before beginning the test.
2. All answers must be written clearly and legibly.
3. Dictionaries, electronic devices, and unauthorized materials are not permitted unless explicitly approved.
4. The test consists of five assignments. Additional assignments and instructions may be added subsequently.
5. Pay close attention to precision of terminology, grammatical correctness, and clarity of expression.
6. In translation assignments, both accuracy and stylistic adequacy will be evaluated.
7. In essay-related assignments, logical structure and correspondence between thesis statement, burdens of proof, and examples will be strictly assessed.

ASSIGNMENT I
Translation of a Technical Mathematical Text
(English → Serbian)

Translate the following passage into Serbian. Particular attention should be paid to:

- mathematical terminology,
- syntactic precision,
- consistency of notation,
- preservation of logical relations within the proof,
- accurate rendering of definitions and symbolic expressions.

Change of Basis

The matrix of an operator T ∈ L(V) depends on a choice of basis of V. Two different bases of V may give different matrices of T. This section explains how these matrices are related, which will later help in finding formulas for the trace and determinant of T.

With respect to any basis of V, the identity operator I ∈ L(V) has a diagonal matrix

I = [1 0 ... 0
0 1 ... 0
. . . .
0 0 ... 1]

This matrix is called the identity matrix and is denoted I. The symbol I can denote either the identity operator or the identity matrix, depending on the context. For example:

M(I) = I

where the left I is the identity operator and the right I is the identity matrix.

If A is a square matrix of the same size as I, then

AI = IA = A

A square matrix A is called invertible if there exists a square matrix B of the same size such that

AB = BA = I

We call B the inverse of A. The inverse is unique: if B and B' are both inverses of A, then

B = BI = B(AB') = (BA)B' = IB' = B'

so B = B'. We denote the inverse of A by A^-1, which satisfies

AA^-1 = A^-1A = I

Points: _____ / _____20_____

ASSIGNMENT II
Translation of a Literary-Technical Text
(English → Serbian)

Translate the following passage into Serbian. Particular attention should be paid to:

- stylistic consistency,
- conversational tone,
- accurate rendering of technical vocabulary,
- preservation of narrative atmosphere,

- natural Serbian syntax and punctuation

“Peter’s a real flake. He’s trying to see certain directions.”

“I know,” Lauren said, sighing.

“I’m going home now,” Pal said. “I’ll be back, though… if it’s all right with you. Peter invited me.”

“I’m sure that it will be fine,” Lauren replied dubiously.

“He’s going to let me learn the Tronclavier.”

With that, Pal smiled radiantly and exited through the kitchen door.

When she retrieved the tray, she found Peter leaning back in his chair, eyes closed. The figures on the screen patiently folded and unfolded, cubes continuously passing through one another.

“What about Hockrum’s work?” she asked.

“I’m on it,” Peter replied, eyes still closed.

Lauren called Pal’s adoptive mother on the second day to report his location. The woman said it was fine.

“Sometimes he’s a little pest. Send him home if he causes trouble—but not right away! Give me a rest,” she said, then laughed nervously.

Lauren thanked her and hung up.

Peter and the boy sat in the kitchen, filling paper with line drawings.

“Peter’s teaching me how to use his program,” Pal said.

“Did you know,” Tuthy said in his most professorial tone, “that a cube, intersecting a flat plane, can produce a number of geometrically different cross sections?”

Pal looked at the sketch.

“Sure,” he said.

“If a cube is pushed through a plane, it can appear to a two-dimensional creature living there—let’s call him a Flatlander—to be a triangle, rectangle, trapezoid, rhombus, or square. As”

Points: _____ / ____20_____

ASSIGNMENT III. **Instructions**

Answer all questions carefully. Use only the grammatical principles illustrated in the provided material and examples.

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1. Infinitive + “have got”

Explain the difference in acceptability:

- He seems to have got plenty of time.
- He must have got plenty of money.
- He must have plenty of money.

---

2. Future modal restriction

Explain why the following is incorrect:

- He will have got any sense.

Compare with:

- You never did have any sense, you never will have any sense.

---

3. Imperative form

Explain correctness:

- Have got anything to do with him.
- Don't have anything to do with him.

---

4. Perfect vs pluperfect (no "got")

Transform:

- I've got no time.
- I'd got no time.

---

5. "Got" with no object

Explain correctness:

- I've got nothing yet.
- I've got.

---

6. Sense-unit restriction

Explain why "got" is impossible:

- Have a look.
- Have got a look.

---

7. Inclusive present meaning

Explain the temporal structure:

- I have lived here for three years.
- I lived here for three years.

---

8. Inclusive future meaning

Explain:

- I shall have been married thirty years.

---

9. Since + tense structure

Explain:

- Since I last wrote to you, I have seen the ruins of Rome.

---

10. Historical tense variation with “since”

Correct and explain:

- Since death of my mother it did not speak.
- Since death of my mother it has not spoken.

---

11. Preterit with “ever/never”

Explain:

- I never prospered since I forswore myself.

---

12. Sequence of past events

Explain difference:

- I saw him before he saw me.
- I had seen him before he saw me.

---

13. After + tense choice

Explain variation:

- After that he lodge had complained.
- After that he lodged he complained.

---

14. Pluperfect in subordinate clause

Explain:

- When they had been little, they had watched each other.

---

15. “First” and beginning of state

Explain difference:

- When I first knew him.
- When I knew him first.

---

16. Modal “may” – meaning contrast

Explain:

- He may recover yet.
- He may be here already.

---

17. “May” in subordinate clauses

Explain:

- I hope that you may arrive safely.

---

18. Perfect infinitive inference

Explain meaning difference:

- He must have heard me.
- He may have heard me.

---

19. Perfect infinitive vs simple past

Rewrite equivalently:

- I suppose I must have meant that.
- I suppose I did mean that.

---

20. Mixed tense analysis

Correct or explain the errors:

- Since I have been gone, I had seen him before he saw me, and I must have got no time, though I have lived here for three years.

Points: _____ / ____20_____

ATHEMATICAL FICTION TEXTS (20 QUESTIONS)

I. VOCABULARY (7 QUESTIONS)

1. (Isaac Asimov – "1 to 999")
In the story *1 to 999*, what does the expression **"old fraud"** (used for Griswold) mean in context?

2. (Norman Kagan – "Four Brands of Impossible")
In *Four Brands of Impossible*, what does the phrase **"paper barrier"** refer to in job applications?

3. (Greg Bear – "Tangents")
In *Tangents*, what does the metaphor **"still cold broth"** suggest about the state of Peter Tuthy's theoretical work?

4. (Rudy Rucker – "A New Golden Age")
In *A New Golden Age*, what does the phrase **"eccentric notation"** suggest about Lord Vickers' mathematical system?

5. (Anatoly Dnieprov – "The Maxwell Equations")
In *The Maxwell Equations*, what does **"neurocybernetics"** refer to in relation to human cognition?

6. (Greg Bear – "Tangents")
In *Tangents*, what does the expression **"mind's eye"** imply in Tuthy's attempt to visualize higher-dimensional objects?

7. (Anatoly Dnieprov – "The Maxwell Equations")
In *The Maxwell Equations*, what does the phrase **"crackpots"** reveal about the narrator's initial perception of the inmates?

II. PLOT / COMPREHENSION (13 QUESTIONS)

8. (Isaac Asimov – "1 to 999")
In *1 to 999*, what transformation is applied to the numbers 1–999 in Griswold's reasoning about the successor problem?

9. (Isaac Asimov – "1 to 999")
In *1 to 999*, what linguistic property of number names leads Griswold to his final conclusion?

10. (Norman Kagan – "Four Brands of Impossible")
In *Four Brands of Impossible*, how does the story distinguish between **technically impossible**, **scientifically impossible**, and **logically impossible**?

11. (Norman Kagan – "Four Brands of Impossible")
In *Four Brands of Impossible*, why does the narrator feel both attracted to and uneasy about scientific work in the corporation?

12. (Greg Bear – "Tangents")
In *Tangents*, what does Peter Tuthy discover about a cube passing through a flat plane?

13. (Greg Bear – "Tangents")
In *Tangents*, what object does Pal recognize in the workshop that confirms his understanding of higher-dimensional geometry?

14. (Greg Bear – "Tangents")
In *Tangents*, what is Hockrum's reaction to Peter's completed research work?

15. (Rudy Rucker – "A New Golden Age")
In *A New Golden Age*, why does the Moddler demonstration have to be completed urgently before the Appropriations Committee vote?

16. (Rudy Rucker – "A New Golden Age")
In *A New Golden Age*, why do the committee members reject the second tape despite its mathematical sophistication?

17. (Rudy Rucker – "A New Golden Age")
In *A New Golden Age*, what does the committee value more than technical mathematical depth?

18. (Anatoly Dnieprov – "The Maxwell Equations")
In *The Maxwell Equations*, why do the inmates insist that Herr Kraftstudt is their "teacher"?

19. (Anatoly Dnieprov – "The Maxwell Equations")
In *The Maxwell Equations*, what is the significance of the narrator discovering that he has already been declared "dead" in the newspaper?

20. (Anatoly Dnieprov – "The Maxwell Equations")
In *The Maxwell Equations*, how does the combination of neurocybernetic control, identity replacement, and media fabrication establish total institutional power?

Points: _____ / ____20_____

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5. Fifth Assignment

In the fifth assignment, you are required to write an **essay plan**, not a full essay.

The essay plan must include:

- a **clearly and well-formulated thesis statement**
- **consistent and logically structured burdens of proof** that directly support the thesis statement
- **specific and relevant examples** that correspond precisely to each burden of proof

Points: _____ / ____20_____