Questionaire on

Subject of Examination (legible if possible ;))

Applications of the probabilistic Methods

☒ Oral
○ Written
○ Oral Reeximination

Date: **Mar 29**
Duration: **30min**

Examiner: **Günlü**
Programme of Study: **Electr. Eng. MSc**

Preparation

a) Continuous attendance at lectures? ☒ Yes ○ No

b) Effects of a): ☒ Positive ○ None ○ Negative

c) Amount of time spent on preparation: **7 slow days**   ☒ by yourself ☒○ group work

d) Prior knowledge from other lectures/practical experiences? **probably theory**

e) What resources did you use? (*literature, websites etc.*)

lecture videos

Mitzenmacher book → no real help

f) Can you give any advice on the preparation of this exam?

Questions are very detailed.

No. General Questions were strongly emphazised.
∴ 15 Questions: not stringently asked, more general questio to them

Exam

a) Had there been any agreements on form or contents of the exam? Were they met?

15 Questions & general other Questions.

b) Advice on behaviour during the exam:

c) Examination style: (*atmosphere, questions: clear or unclear, in depth knowledge or general questions, specific interposed questions, specific questions in case of knowledge gaps, ...?*)

Sometimes trick questions. Will help sometimes.

Other questions

a) How were you graded? (*optional of course*) **he wants to make a gauss distr. over all examiners.**

b) Do you think this grade is appropriate? ○ Yes ☒ No (*why not?*) **TU Regulations Ally StuPo**

c) Would you recommend this exam? ○ Yes (*to whom especially?*) ○ No (*why not?*)

lecture content is ithreshing but support is bad.

d) Do you have any other advice or remarks about this exam?

No second examiner in exam.

- What are 2 weaknesses of Chebyshev inequ?

- what is a moment-generating function.

- when are 2 r.v. equal $\rightarrow$ with mgf. , what values for t are allowed?

- How do you calculate Moments.

- explain vector representation of r.v.

- How are r.v. defined? classic & vector.

- what is $\langle x, y \rangle$, how can you get $|x|$?

- what is a martingale?

- what means $E(z_k / z^{k-1}) = 0$ in terms of vector repr.?

- Definition of Martingale.

$\overline{(Q5)}$ • What is $E\left[\sum_{}^{n} \mathbb{I}(A_i \text{ happens})\right]$

  • why can we take E inside the sum?

  • $X := \sum_{i=1}^{N} X_i$ $\rightarrow$ what is it.

  • what is $E(X_i X_j \mid X_i = 1)$ and why is this

    $\frac{1}{n} \cdot \frac{1}{n-1}$ and not $\frac{1}{n^2}$

You are not allowed to write on your own, he will write. He will ask random questions connected to the 15 questions in the latter part, you do not really need to solve the problem itself.

Questions & solutions appended seperately.