

JBM Kuks, MD PhD
Dept of Neurology
Dept of Medical Education
UMCG

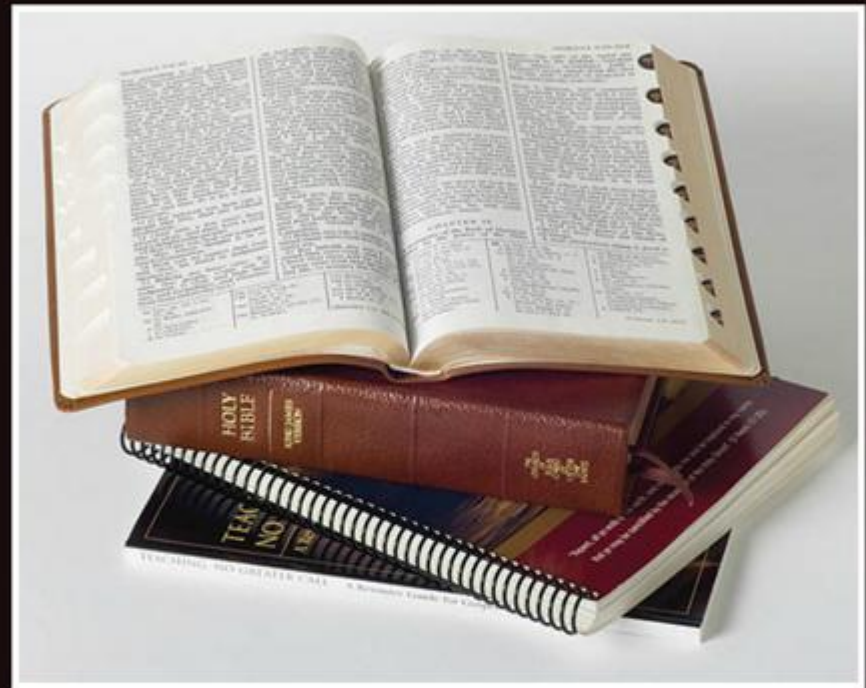
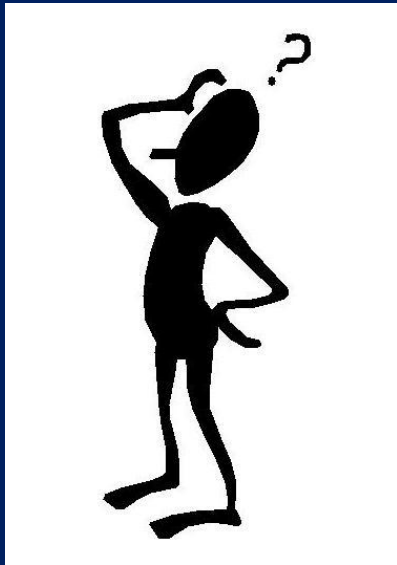


Open Book Assessment



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Open Book Assessment



Life is a test...

BUT IT'S OPEN BOOK.



Generation Y



More Superficial than deep learning



More Superficial than deep learning

PRIYA NARAYANAN

With the current IT boom and the consequent scarcity of employable talent, the question has never been more relevant. At this juncture, open book examinations can play a significant role in reforming the education system. The problem lies in the basic pattern of examinations which generally rely on the tried and tested method of setting questions and allotting students time to write down the answers, with scant emphasis on practical aspects.

While a complete makeover of the system is almost impossible, it is worth noting that a large part of the trouble lies with the questions. Very often, these questions require as answers nothing more than memorized essays. This ultimately means that students memorize so-called important questions, regurgitate these on the answer sheet and finish the job. This is merely a stopgap technique, and eventually results in students being unable to apply any of the theory that they have learnt.

The problem is entrenched in the entire education system as the students 'learn' this practice in school and follow the same as they move on to colleges and universities. This fundamental lacking becomes starkly evident when the same students begin their careers.

The solution to this problem lies in a complete revamp of the approach to examinations, on the part of the examiners, the teachers and the students. One of the best ways of taking a fresh look at the whole system is to conduct open book exams. As the name suggests, an open book exam is basically one in which the student is allowed to bring study material into the examination hall, the extent of the material ranging from a single sheet of formulas to the prescribed textbook and, at higher levels, any reference material.



UNSW
AUSTRALIA

Current Students

<https://student.unsw.edu.au/open-book-and-take-home-exams>



Why 'open book' Exams ?

Because they test for more than just rote-learning. At university, simply memorizing and repeating information is not enough to get you a good mark. Higher education is supposed to equip you with intellectual abilities and skills.

Open Book exams test your ability to quickly find relevant information and then to understand, analyze, apply knowledge and think critically.



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AUSTRALIA

| **Current Students**

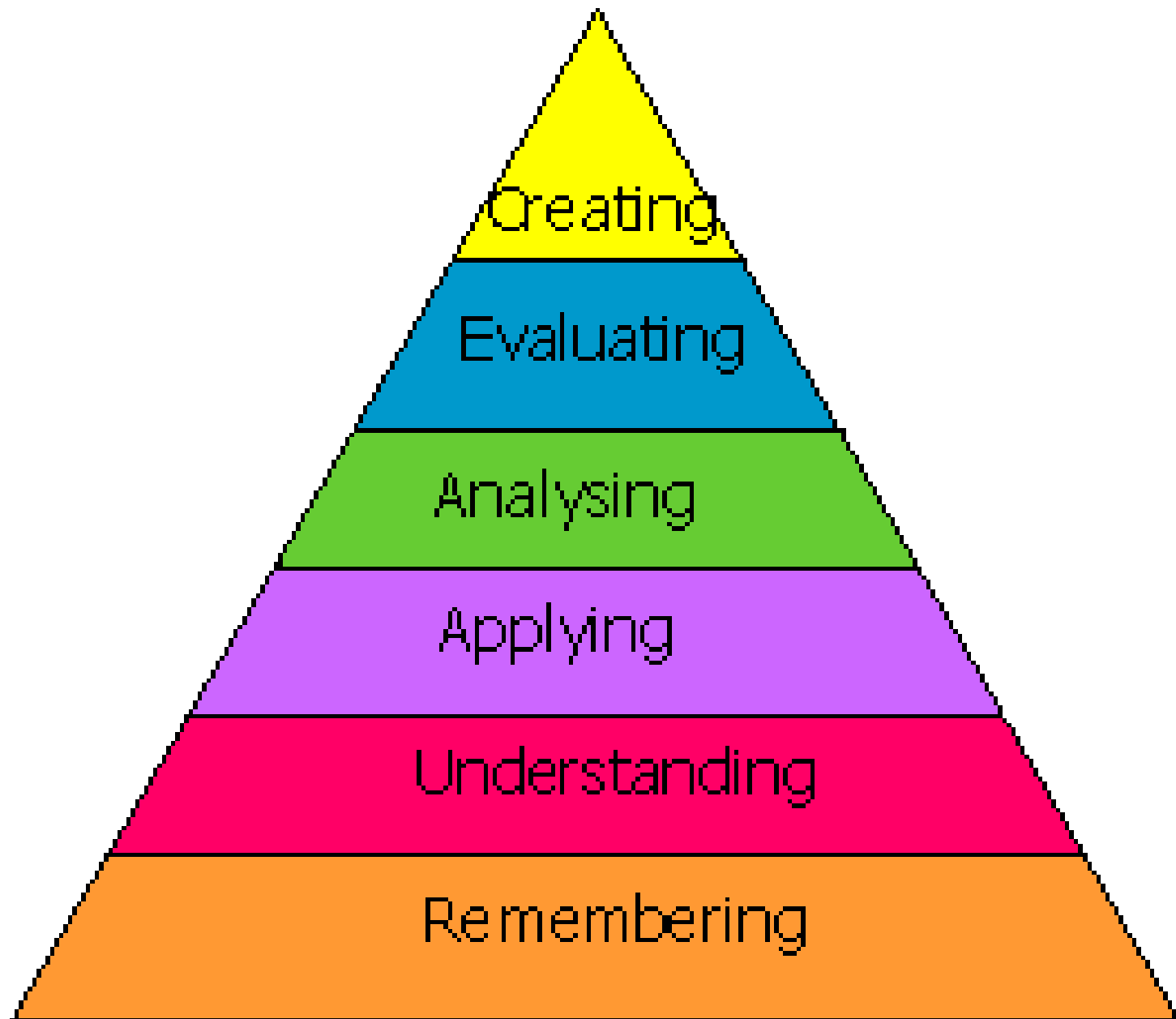
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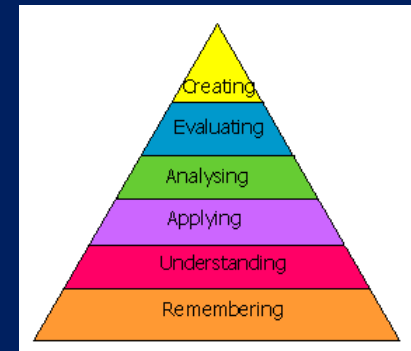
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Why 'open book' Exams in a medical curriculum?



1. To test on a higher level, to approach ,real world'
2. To prevent students from cramming and other useless activities.
3. To have the opportunity to offer more topics to study.



Open book questions



- The candidate may consult reference sources
- The questions are mostly real world based
- A higher level of complexity is required

Education is what survives when what has been learned has been forgotten.

-B.F.Skinner

Open book questions



- No decrease in psychometric quality
- Preparing for open book tests more by superficial learning

**Education is what survives when what
has been learned has been forgotten.**

-B.F.Skinner

Types of open book exams



- All references are allowed
- Only hardcopies allowed, no electronic devices
- Only books allowed
- Only fixed books allowed
- Questions (without options) are given before
- Take home your questions
-



Instruction

- Read the questions carefully
- First try to solve questions without a book
- Then use your book for the remaining questions



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Misconceptions

1) Open Book exams are a breeze

More than just copying
information straight from texts.

How to locate, apply and use
information is important.



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Misconceptions

2) You don't have to study

One doesn't have to memorize, but one still needs to apply knowledge effectively.

One must fully understand and be familiar with the content and materials.



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Current Students

<https://student.unsw.edu.au/open-book-and-take-home-exams>

Misconceptions

3) You can just copy straight from the book!

A sound Open Book fixed answer question will not make this possible.

An open-book exam should require to apply the written material to new situations.

How to design an Open-book Examination

- Set questions that require students to do things with the information available to **them**, rather than to merely locate the correct information and then summarize or rewrite it
- Arrange a bigger venue to hold the **examinations** because students may need larger desks for examinations
- Make sure there is enough time for students **taking the examination**. The length of open-book examination is usually longer than the traditional examination.

How to design an Open-book Examination

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How to design an Open-book Examination

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Usage of a clinical scenario to be solved.

A 23 years old male has fallen several times in the previous weeks. It always happened after a bike trip. There was no pain, he just felt loose on his legs. There are no walking problems. He feels somewhat exhausted and short of breath. By times there is double vision and drooping of his left eyelid. The GP made the diagnosis diabetes mellitus two weeks ago and he is treated but there is no effect as to the symptoms described.

What may be the most probable diagnosis in this case?

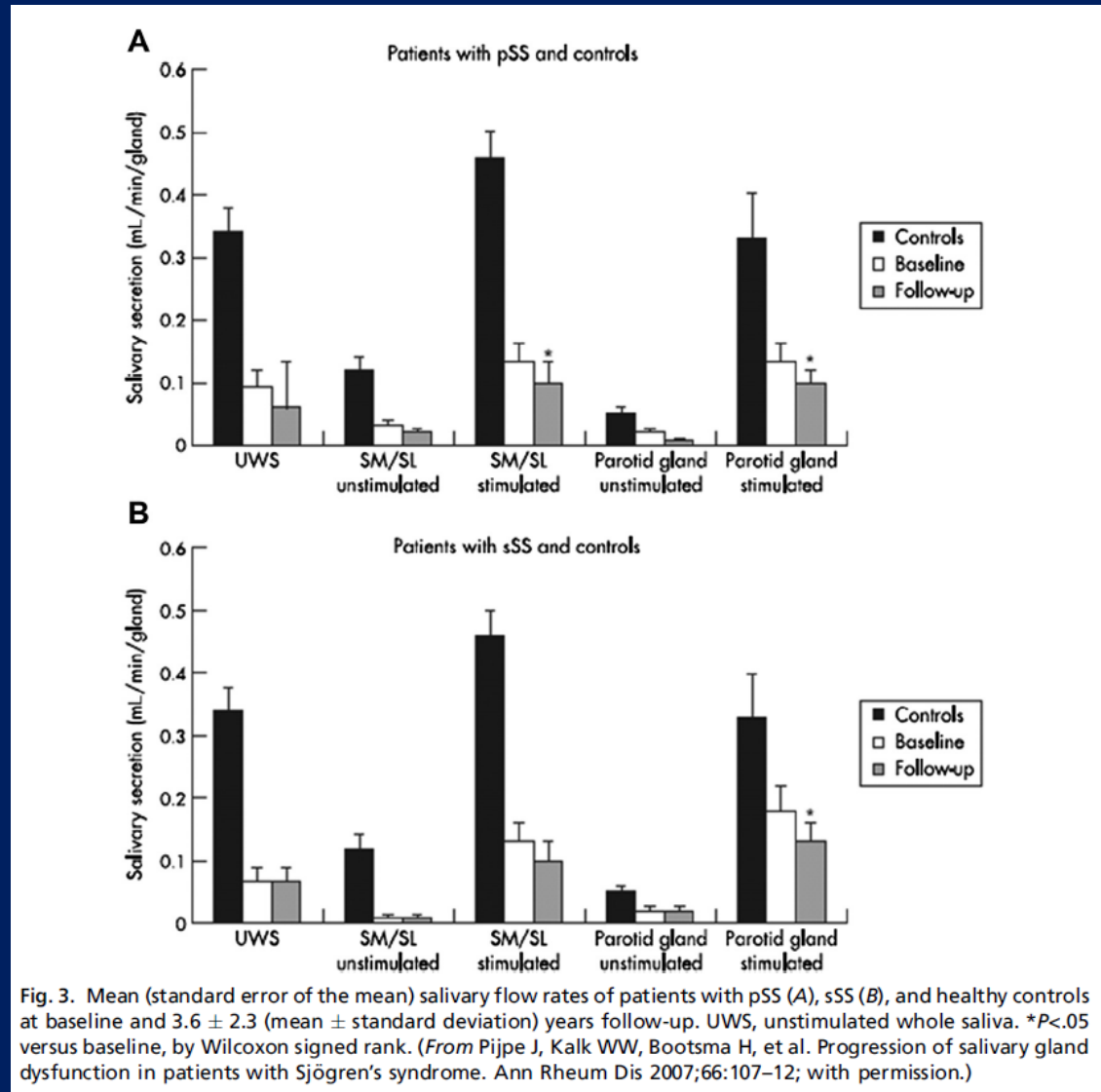
- a. problems with the spinal dorsal columns 2%
- b. diabetic myopathy. 9%
- c. distal polyneuropathy in diabetes. 16%
- d. myasthenia gravis 72%**

Interpretation of a graph

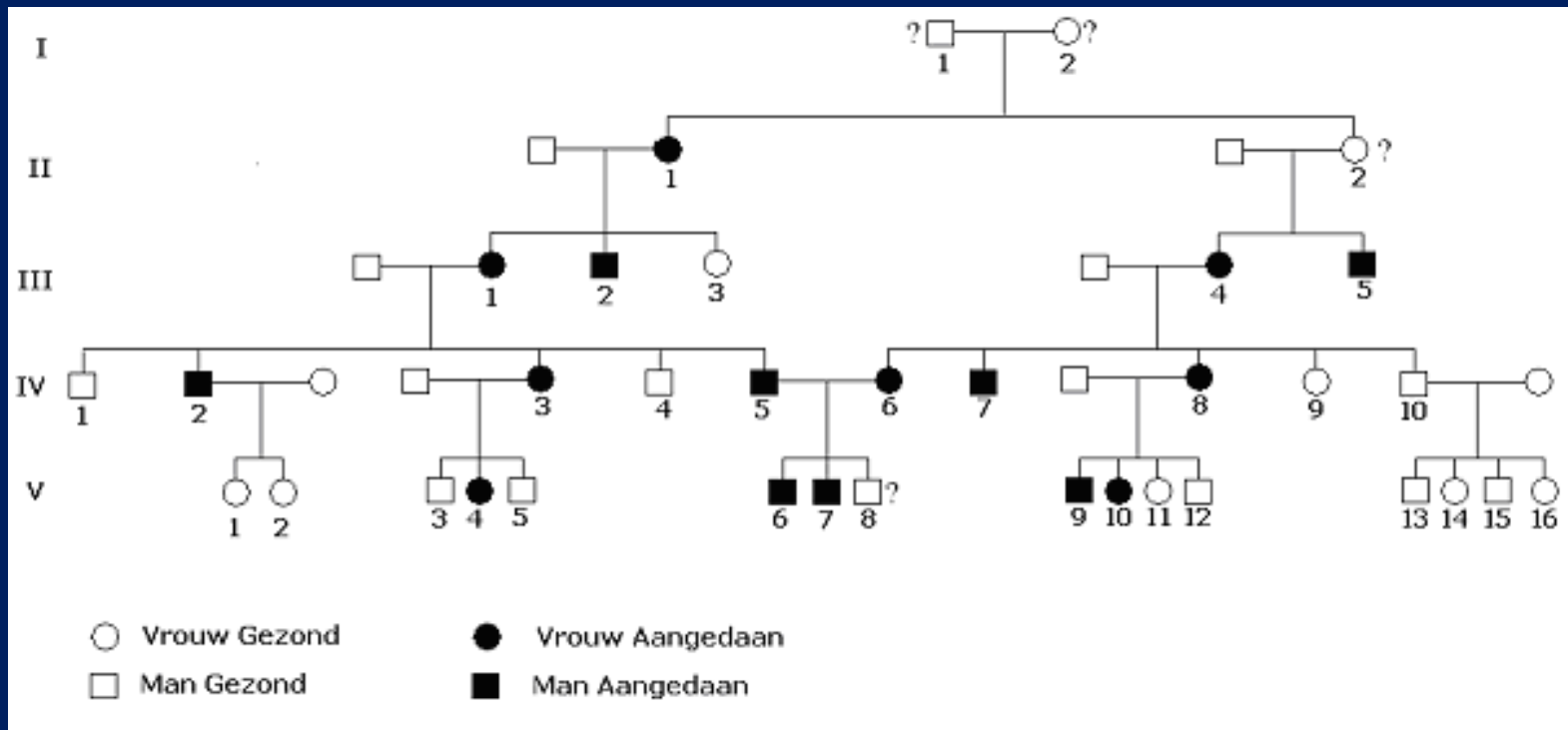
In Sjögren's syndrome the parotid salivary gland generally is less affected with regard to saliva secretion than the submandibular and sublingual glands.

- a. correct (69%)
- b. incorrect (31%)

RIT = 0.172 (n=1000)



Interpretation of a graph



This is an example of

- a. Autosomal recessive inheritance
- b. Mitochondrial inheritance**
- c. X-linked recessive inheritance
- d. X-linked dominant inheritance

Evaluation of a situation

A 40 years old male is admitted to the department of internal medicine because of a pancreatitis.

Eventually the man succeeds in refraining from alcoholics.

Unfortunately his liver appears severely damaged.

A liver transplantation would be an option.

Is it ethically justified to go for a liver transplantation in this situation. In this discussion there is a difference between 'utilism' en 'egalitarism'.

Which of the following persons are more prone to advocate a liver transplantation in this patient?

| | | |
|---------------------------------------|------------|-------------|
| The supporters of utilism. | 19% | |
| The supporters of egalitarism. | 81% | RIT = 0.101 |
| | | (n=500) |

Combination of facts

A 25-years old mail is suffering from low back pain with irradiation in his left leg for 2 months.

Clinical examination: numbness of his big toe with paralysis of the extensor muscle.

The MRI shows a lumbar disk protrusion compressing one single root.

Table with muscles

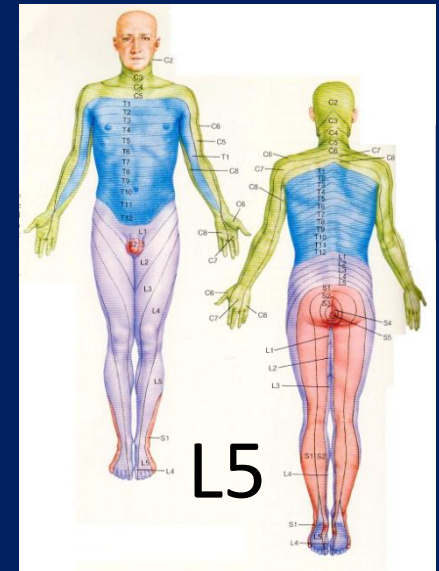


Table with Reflexes

Combination of facts

A 25-years old mail is suffering from low back pain with irradiation in his left leg for 2 months.

Clinical examination: numbness of his big toe with paralysis of the extensor muscle.

The MRI shows a lumbar disk protrusion compressing one single root.

Which type of reflex pattern is the most likely?

- a. An extensor reflex type Babinsky (11%)*
- b. No Achilles tendon reflex on the left (28%)*
- c. No Knee tendon reflex on the left (15%)*
- d. Normal reflexes. (46%)*

RIT = 0.147 (n=500)

Table with muscles

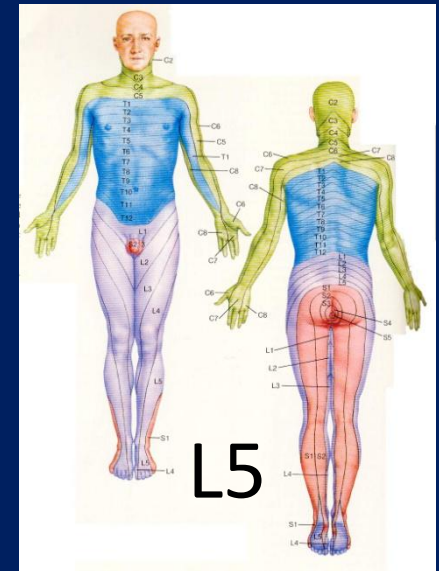


Table with Reflexes

Calculation

There was a urine-analysis in 1000 people seeing a GP for micturition pain.

Does the presence of leucocytes in urine indicate a cystitis?

The golden standard is the clinical outcome after two weeks.

100 of these persons had an additional urine culture to investigate the reliability of the diagnosis cystitis.

Result: in 700 persons urinary leucocytes were found.

*from these 400 really appeared to be affected with a cystitis
50/300 remaining persons had a cystitis as well.*

De sensitivity is closed to

- a. 90%
- b. 70%
- c. 50%
- d. 30%

Calculation

There was a urine-analysis in 1000 people seeing a GP for micturition pain.

Does the presence of leucocytes in urine indicate a cystitis?

The golden standard is the clinical outcome after two weeks.

100 of these persons had an additional urine culture to investigate the reliability of the diagnosis cystitis.

Result: in 700 persons urinary leucocytes were found.

*from these 400 really appeared to be affected with a cystitis
50/300 remaining persons had a cystitis as well.*

This test is most appropriate
to a cystitis.

a. exclude

b. demonstrate

Interpretation of a text

The Mavragani article contains the statement: 'a recent study revealed that the cell composition of the mononuclear infiltrates in minor salivary glands strongly depends on the severity of the histopathological lesion'.

What does this statement entail?

The more an abnormality has progressed, the more you will see.....

- a. different activation of cells. (14%)
- b. other types of cells. (50%)**
- c. more autoimmune cells. (20%)
- d. more cell wall damage. (16%)

RIT = 0.374 (n=1000)



7TH

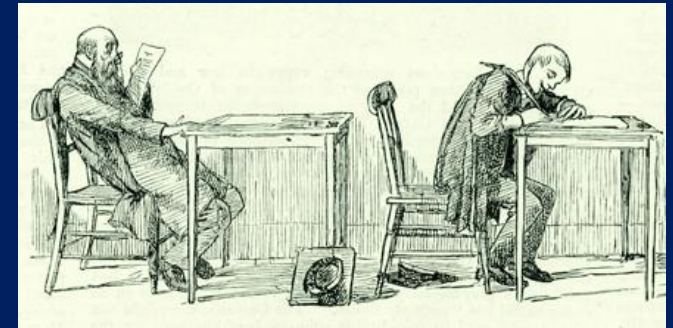
**EUROPEAN
BOARD
EXAMINATION**

IN

NEUROLOGY

BERLIN • JUNE 19 2015

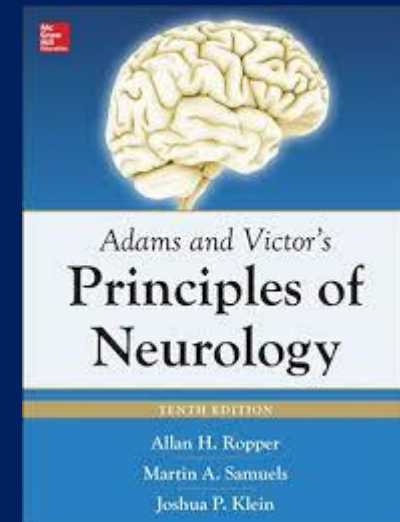
About 80% has been taken from the following sources



Electronic Courses (EAN)



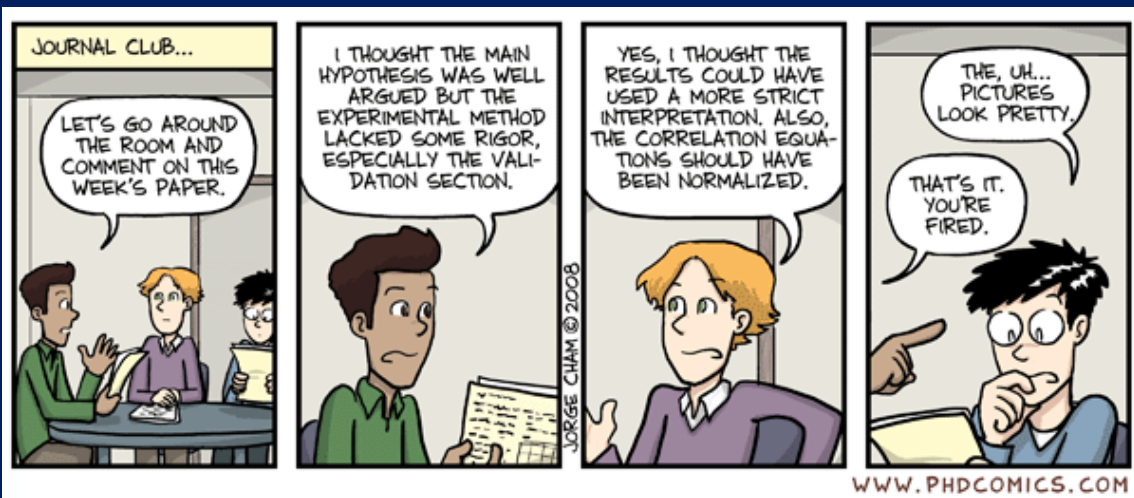
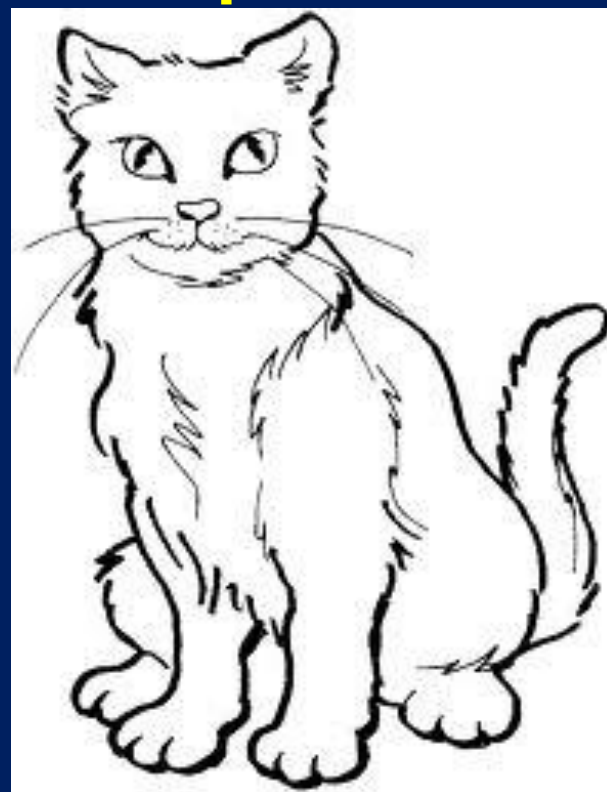
European Guidelines (EAN)



Textbook

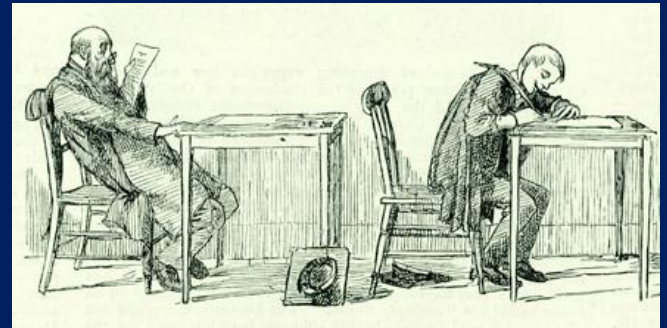


Critically Appraised Topic



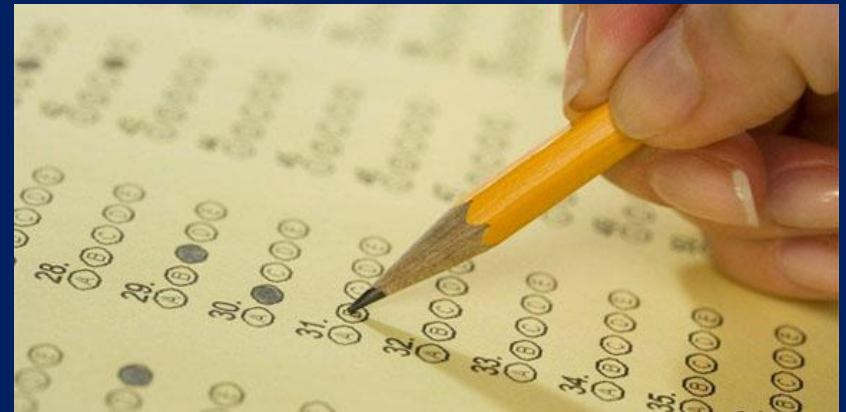


Knowledge (80%)

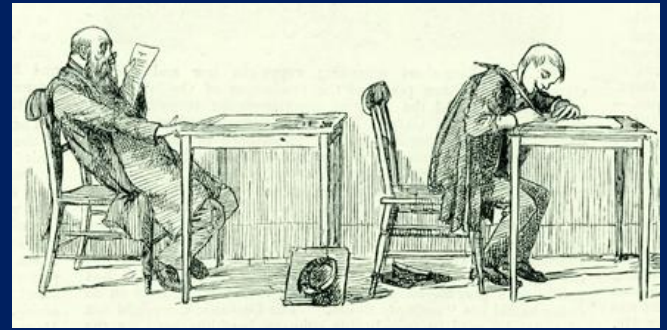


80 Multiple Choice questions
(Basic and clinical sciences) 50% Open Book

50 Extended Matching Questions
(Clinical science) 100% Open Book



Knowledge (80%)

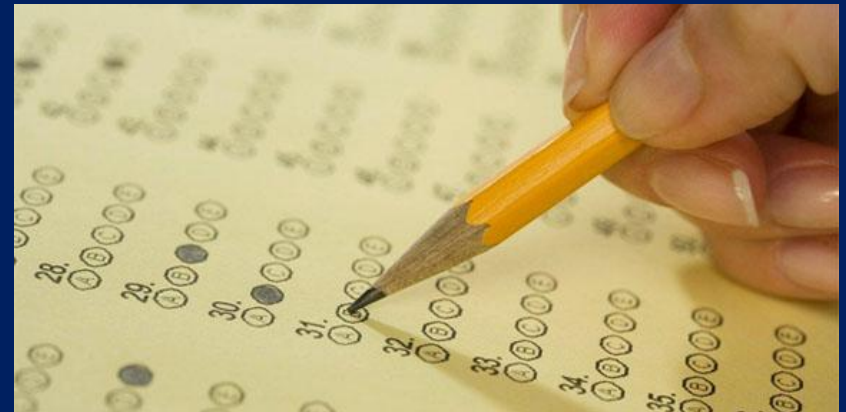


19 MCQ Guidelines

19 MCQ Basic & Clinical questions closed book

37 MCQ Basic & Clinical questions open book

43 EMQ Clinical questions open book



Direct calculation

$$\text{Mark} = \sum_{I=2-4} \left[\frac{N(i)}{\text{Tot}} * \frac{\text{Sc}(i) - \text{Gu}(i)}{\text{Mx}(i) - \text{Gu}(i)} \right]$$

$N(i)$ = # questions with i items

$\text{Sc}(i)$ = score on questions with i items

$\text{Gu}(i)$ = guess rate on questions with i items = $\text{Mx}(i)/i$

$\text{Mx}(i)$ = maximum score to obtain on questions
with i items

9.5-10.0
9.0- 9.5
8.5- 9.0
8.0- 8.5
7.5- 8.0
7.0- 7.5
6.5- 7.0
6.0- 6.5
5.5- 6.0

5.0- 5.5
4.5- 5.0
4.0- 4.5
3.5- 4.0
3.0- 3.5
2.5- 3.0
2.0- 2.5
1.5- 2.0
1.0- 1.5
0.5- 1.0
0.0- 0.5



9.5-10.0
9.0- 9.5
8.5- 9.0
8.0- 8.5
7.5- 8.0
7.0- 7.5
6.5- 7.0
6.0- 6.5
5.5- 6.0

5.0- 5.5
4.5- 5.0
4.0- 4.5
3.5- 4.0
3.0- 3.5
2.5- 3.0
2.0- 2.5
1.5- 2.0
1.0- 1.5
0.5- 1.0
0.0- 0.5

9.5-10.0 XX
 9.0- 9.5 X
 8.5- 9.0 XXXXX
 8.0- 8.5 XXXXXXXXXXXX
 7.5- 8.0
 7.0- 7.5 XXXXXXXX
 6.5- 7.0 XXXXX
 6.0- 6.5 XXXXXXXXXXXX
 5.5- 6.0



9.5-10.0
 9.0- 9.5
 8.5- 9.0
 8.0- 8.5
 7.5- 8.0
 7.0- 7.5
 6.5- 7.0
 6.0- 6.5
 5.5- 6.0

 5.0- 5.5 XXXXXXXX
 4.5- 5.0 XXXXX
 4.0- 4.5 XXXXXXXX
 3.5- 4.0
 3.0- 3.5 XXX
 2.5- 3.0 XX
 2.0- 2.5
 1.5- 2.0
 1.0- 1.5
 0.5- 1.0 XX
 0.0- 0.5

 5.0- 5.5
 4.5- 5.0
 4.0- 4.5
 3.5- 4.0
 3.0- 3.5
 2.5- 3.0
 2.0- 2.5
 1.5- 2.0
 1.0- 1.5
 0.5- 1.0
 0.0- 0.5

41% F

| | | |
|----------|------------|----------------|
| 9.5-10.0 | XX | |
| 9.0- 9.5 | X | X |
| 8.5- 9.0 | XXXXXX | XXX |
| 8.0- 8.5 | XXXXXXXXXX | XXXXXXXXXX |
| 7.5- 8.0 | | XXXXXX |
| 7.0- 7.5 | XXXXXXX | |
| 6.5- 7.0 | XXXXXX | XXXXXXXXXXXXXX |
| 6.0- 6.5 | XXXXXXXXXX | XXXXXXXXXXXXXX |
| 5.5- 6.0 | | XX |



| |
|----------|
| 9.5-10.0 |
| 9.0- 9.5 |
| 8.5- 9.0 |
| 8.0- 8.5 |
| 7.5- 8.0 |
| 7.0- 7.5 |
| 6.5- 7.0 |
| 6.0- 6.5 |
| 5.5- 6.0 |

| | | |
|----------|---------|------------|
| 5.0- 5.5 | XXXXXXX | XXXXXXXXXX |
| 4.5- 5.0 | XXXXXX | XXXX |
| 4.0- 4.5 | XXXXXXX | |
| 3.5- 4.0 | | XXX |
| 3.0- 3.5 | XXX | XXX |
| 2.5- 3.0 | XX | |
| 2.0- 2.5 | | X |
| 1.5- 2.0 | | |
| 1.0- 1.5 | | X |
| 0.5- 1.0 | XX | |
| 0.0- 0.5 | | |

| |
|----------|
| 5.0- 5.5 |
| 4.5- 5.0 |
| 4.0- 4.5 |
| 3.5- 4.0 |
| 3.0- 3.5 |
| 2.5- 3.0 |
| 2.0- 2.5 |
| 1.5- 2.0 |
| 1.0- 1.5 |
| 0.5- 1.0 |
| 0.0- 0.5 |

41% F 34% F

| | | | | |
|----------|------------|--------------|--------------|----------|
| 9.5-10.0 | XX | | X | 9.5-10.0 |
| 9.0- 9.5 | X | X | | 9.0- 9.5 |
| 8.5- 9.0 | XXXXXX | XXX | | 8.5- 9.0 |
| 8.0- 8.5 | XXXXXXXXXX | XXXXXXXXXX | XX | 8.0- 8.5 |
| 7.5- 8.0 | | XXXXXXX | XXXXXXX | 7.5- 8.0 |
| 7.0- 7.5 | XXXXXXX | | XXX | 7.0- 7.5 |
| 6.5- 7.0 | XXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX | 6.5- 7.0 |
| 6.0- 6.5 | XXXXXXXXXX | XXXXXXXXXXXX | XXXXXX | 6.0- 6.5 |
| 5.5- 6.0 | | XX | XXXXXXX | 5.5- 6.0 |



| | | | | |
|----------|---------|------------|--------------|----------|
| 5.0- 5.5 | XXXXXXX | XXXXXXXXXX | XXXXXXX | 5.0- 5.5 |
| 4.5- 5.0 | XXXXXX | XXXX | XXXXXXXXXXXX | 4.5- 5.0 |
| 4.0- 4.5 | XXXXXXX | | XX | 4.0- 4.5 |
| 3.5- 4.0 | | XXX | XXXX | 3.5- 4.0 |
| 3.0- 3.5 | XXX | XXX | XX | 3.0- 3.5 |
| 2.5- 3.0 | XX | | XX | 2.5- 3.0 |
| 2.0- 2.5 | | X | X | 2.0- 2.5 |
| 1.5- 2.0 | | | | 1.5- 2.0 |
| 1.0- 1.5 | | X | | 1.0- 1.5 |
| 0.5- 1.0 | XX | | | 0.5- 1.0 |
| 0.0- 0.5 | | | | 0.0- 0.5 |

41% F

34% F

44% F

Closed MCQ (Guidelines) Closed MCQ (General) Open MCQ

Open EMQ

| | | | | | |
|----------|------------|----------------|----------------|----------------|----------|
| 9.5-10.0 | XX | | X | | 9.5-10.0 |
| 9.0- 9.5 | X | X | | | 9.0- 9.5 |
| 8.5- 9.0 | XXXXXX | XXX | | | 8.5- 9.0 |
| 8.0- 8.5 | XXXXXXXXXX | XXXXXXXXXX | XX | XXXXXX | 8.0- 8.5 |
| 7.5- 8.0 | | XXXXXX | XXXXXXXXXX | XXXXXXXXXX | 7.5- 8.0 |
| 7.0- 7.5 | XXXXXXX | | XXX | XXXXXXXXXX | 7.0- 7.5 |
| 6.5- 7.0 | XXXXXX | XXXXXXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXXXXXX | 6.5- 7.0 |
| 6.0- 6.5 | XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXXXXXXXXXX | 6.0- 6.5 |
| 5.5- 6.0 | | XX | XXXXXX | XXXXXX | 5.5- 6.0 |



| | | | | | |
|----------|------------|------------|----------------|------|----------|
| 5.0- 5.5 | XXXXXXX | XXXXXXXXXX | XXXXXXX | XXXX | 5.0- 5.5 |
| 4.5- 5.0 | XXXXXX | XXXX | XXXXXXXXXXXXXX | XXXX | 4.5- 5.0 |
| 4.0- 4.5 | XXXXXXXXXX | | XX | X | 4.0- 4.5 |
| 3.5- 4.0 | | XXX | XXXX | XX | 3.5- 4.0 |
| 3.0- 3.5 | XXX | XXX | XX | XXX | 3.0- 3.5 |
| 2.5- 3.0 | XX | | XX | | 2.5- 3.0 |
| 2.0- 2.5 | | X | X | X | 2.0- 2.5 |
| 1.5- 2.0 | | | | | 1.5- 2.0 |
| 1.0- 1.5 | | X | | | 1.0- 1.5 |
| 0.5- 1.0 | XX | | | | 0.5- 1.0 |
| 0.0- 0.5 | | | | | 0.0- 0.5 |

41% F 34% F 44% F 23% Failure

Closed MCQ (Guidelines) Closed MCQ (General) Open MCQ Open EMQ

9.5-10.0
 9.0- 9.5
 8.5- 9.0 X
 8.0- 8.5 XXXXX
 7.5- 8.0 XXXXX
 7.0- 7.5 XXXXXXXXX
 6.5- 7.0 XXXXX
 6.0- 6.5 XXXXXXXXXXXX
 5.5- 6.0 XXXX

 5.0- 5.5 XXXXXXXXXXXXXXXXXXXX
 4.5- 5.0 XXXX
 4.0- 4.5 XX
 3.5- 4.0 XX
 3.0- 3.5 XX
 2.5- 3.0 X
 2.0- 2.5
 1.5- 2.0
 1.0- 1.5
 0.5- 1.0
 0.0- 0.5

41% Failure

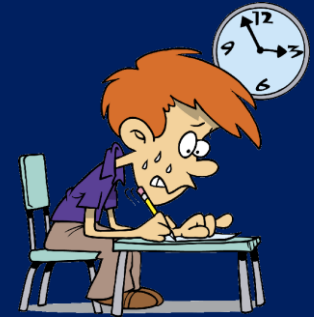
Total (Without Passing Limit)

9.5-10.0
 9.0- 9.5
 8.5- 9.0 XX
 8.0- 8.5 XXXXXXXXX
 7.5- 8.0 XXXXX
 7.0- 7.5 XXXXXXXXX
 6.5- 7.0 XXXXXXXXXXXX
 6.0- 6.5 XXXXXXXXXXXX
 5.5- 6.0 XXXXXXXXXXXX

 5.0- 5.5 XXX
 4.5- 5.0 XX
 4.0- 4.5 XX
 3.5- 4.0 X
 3.0- 3.5
 2.5- 3.0
 2.0- 2.5
 1.5- 2.0
 1.0- 1.5
 0.5- 1.0
 0.0- 0.5

12% Failure

Total (With Passing Limit)





| | MCQ closed | MCQ open | EMQ open | TOTAL |
|--|---------------|-------------|-------------|-------|
|--|---------------|-------------|-------------|-------|

| | | | | |
|-------------|---------|--------|--------|-----|
| # Questions | 38 (40) | 37(40) | 43(48) | 118 |
|-------------|---------|--------|--------|-----|

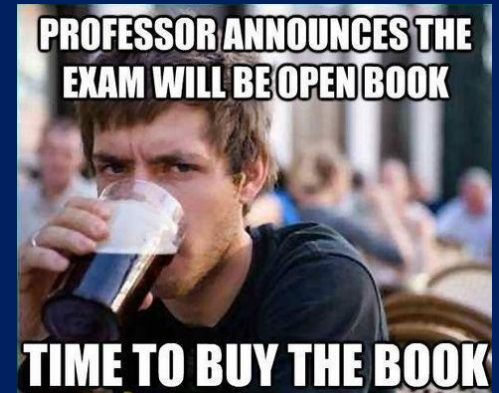
| | | | | |
|--------------|-----|-----|-----|-----|
| Mean p-value | .69 | .66 | .67 | .67 |
|--------------|-----|-----|-----|-----|

| | | | | |
|------|-----|-----|-----|-----|
| KR20 | .75 | .70 | .75 | .88 |
|------|-----|-----|-----|-----|

| | | | | |
|--------------|-----|-----|-----|-----|
| Signal/Noise | 3.0 | 2.4 | 2.9 | 7.5 |
|--------------|-----|-----|-----|-----|

Test-correlations

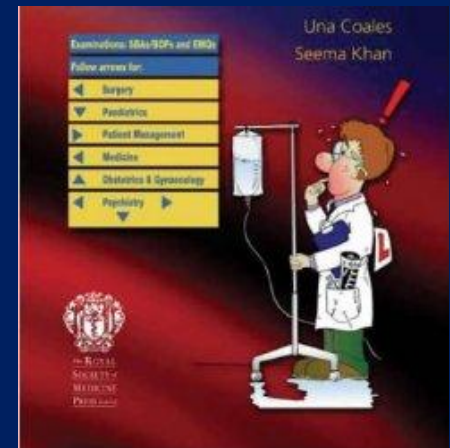
| | CI MCQ | Op MCQ | Op EMQ | Written Total |
|--------------------------|--------|--------|--------|---------------|
| Closed MCQ Basic&Clinics | ---- | | | |
| Open MCQ Basic&Clinics | .57 | ---- | | |
| Open EMQ Basic&Clinics | .60 | .75 | ---- | |
| Written Total | .83 | .88 | .90 | ---- |



There is a fair correlation between closed and open, so use both

Test-correlations

| | CI MCQ | Op MCQ | Op EMQ | Written Total |
|--------------------------|--------|------------|--------|---------------|
| Closed MCQ Basic&Clinics | ---- | | | |
| Open MCQ Basic&Clinics | .57 | ---- | | |
| Open EMQ Basic&Clinics | .60 | .75 | ---- | |
| Written Total | .83 | .88 | .90 | ---- |



Open MCQ and EMQ are nicely correlated, we can leave out one of both

Test-correlations

| | CI MCQ | Op MCQ | Op EMQ | Written Total | Oral Total |
|--------------------------|--------|--------|--------|---------------|------------|
| Closed MCQ Basic&Clinics | ---- | | | | |
| Open MCQ Basic&Clinics | .57 | ---- | | | |
| Open EMQ Basic&Clinics | .60 | .75 | ---- | | |
| Written Total | .83 | .88 | .90 | ---- | |
| Oral Total | .15 | .33 | .23 | .27 | ---- |



In summary

Open book exams

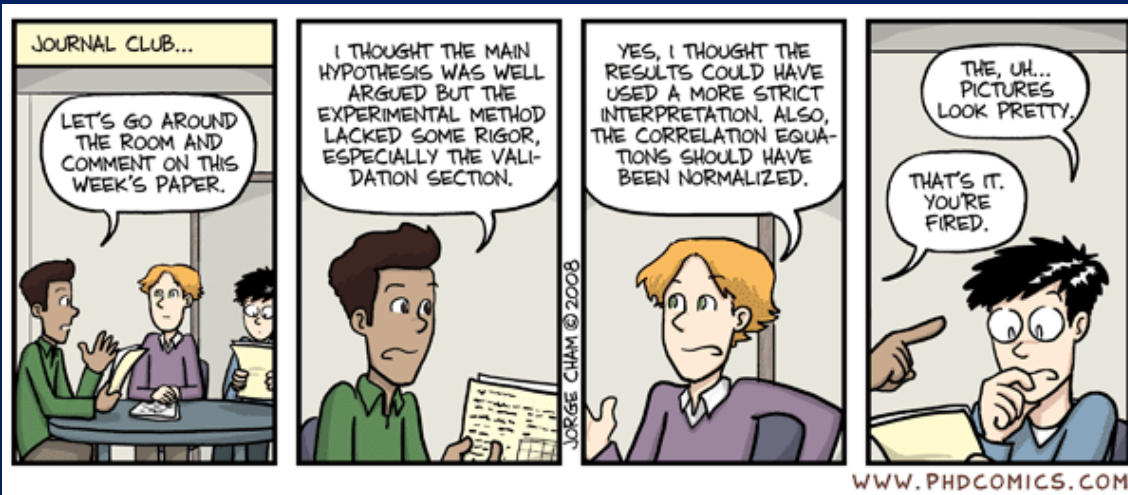
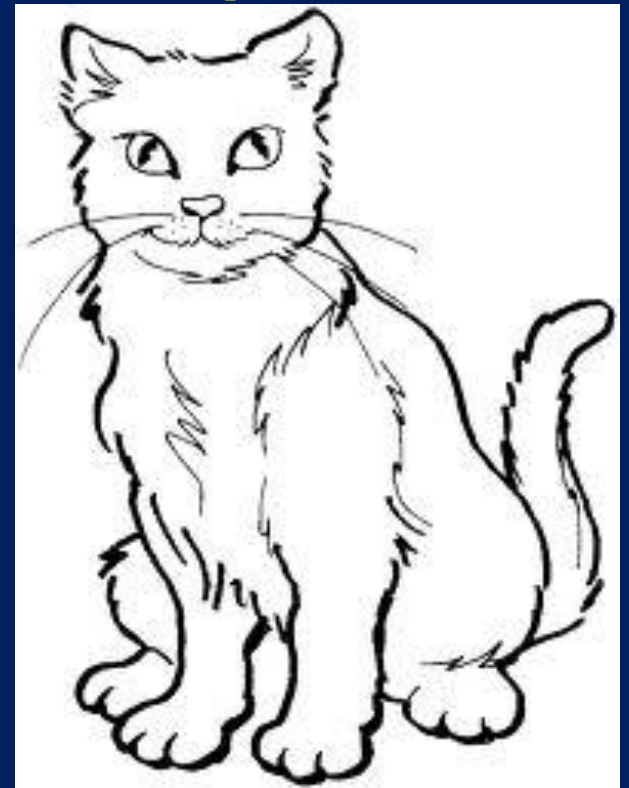
- for testing on a higher level
- for testing large amounts of stuff
- some disadvantages
 - not easier, reliable
 - instruct your students properly
 - instruct the authors
 - several types of questions



You can be sure that your students studied at least for the duration of the test of the module.



Critically Appraised Topic



| | Item Score | Maximal Score | <u>Actual score*</u> |
|----|---|---------------|----------------------|
| 1 | There is a clear, concise and focused question | 1 | |
| 2 | The question is original and relevant for clinical practice | 2 | |
| 3 | The search strategy is adequate | 1 | |
| 4 | The research outcome is adequate | 1 | |
| 5 | The table with results is correct | 2 | |
| 6 | The comments described are adequate | 3 | |
| 7 | The final conclusion is sound | 1 | |
| 8 | The references are really the current key-references for this problem | 1 | |
| 9 | The answers to the questions on the exam are adequate | 2 | |
| 10 | Handling ignorance during the exam is adequate | 1 | |
| | | | |
| | Total (please add up number 1-10) | 16 | |
| | | | |
| | | | |
| | Additional Global Score | | |
| | Global impression on a 10 points scale 1=extreme poor - 10 = excellent | 10 | |
| | | | |

*There will be a conversion of the score to a mark between 0 and 10



| | Item Score | Maximal Score | <u>Actual score</u> * |
|---|---|---------------|-----------------------|
| 1 | The topic is relevant for clinical practice | 1 | |
| 2 | There is a sound introduction | 2 | |
| 3 | The elaboration of the problem is adequate | 2 | |
| 4 | The own vision of the candidate is clear | 1 | |
| 5 | The presentation is clear and to the point | 2 | |
| 6 | The answers to the questions are adequate | 2 | |
| 7 | <u>Handling ignorance is adequate</u> | 1 | |
| 8 | <u>Time management is adequate</u> | 1 | |
| | | | |
| | Total (please add up number 1-8) | 12 | |
| | | | |
| | | | |
| | Additional Global Score | | |
| | Global impression on a 10 points scale 1=extreme poor - 10 = excellent | 10 | |
| | | | |

*There will be a conversion of the score to a mark between 0 and 10

Statistical evaluation oral 2015

Global impression vs Standard Score $r = .90$

Observer 1 and 2 CAT Standard $r = .75$

Observer 1 and 2 CAT Global $r = .77$

Observer 1 and 2 Essay Standard $r = .64$

Observer 1 and 2 Essay Global $r = .70$

ORAL Professional / Health Advocate

- Write an Essay of about 800 Words on an ethical or public health topic within the field of neurology.
- Provide 1-3 references.
- Send this in before May 1st
- Prepare an oral presentation of about 4 minutes (powerpoint allowed).
- You will be assessed on this by two examiners in an oral setting.

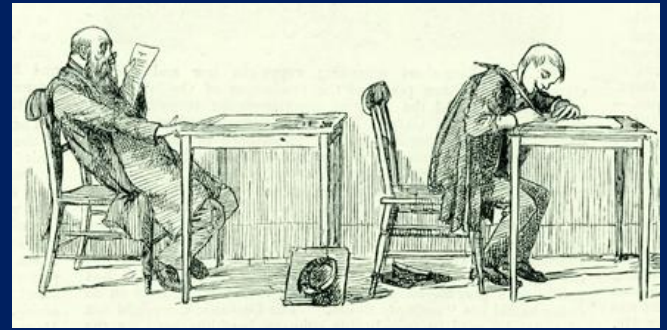


Results Oral 2015



| | |
|----|--------------|
| 20 | xx |
| 19 | xxxxxxxxxxxx |
| 18 | xxxxxxx |
| 17 | xxxxxxxxxxxx |
| 16 | xxxx |
| 15 | xxxxxx |
| 14 | xxxxxxx |
| 13 | xxxxx |
| 12 | x |
| 11 | xxx |
| 10 | |
| 9 | |
| 8 | x |
| 7 | |
| 6 | xxx |
| 5 | |
| 4 | |

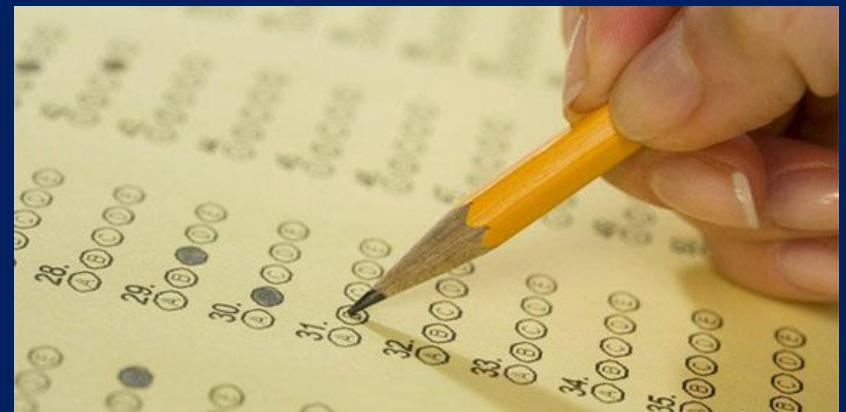
Knowledge (80%)



80 Multiple Choice questions
(Basic and clinical sciences) 50% Open Book

50 Extended Matching Questions
(Clinical science) 100% Open Book

So ~70% Open



Preparation (1)

- Keep current on readings and assignments in class
- Prepare brief, concise notes on ideas and concepts being tested
- Carefully select what you intend to bring with you to the exam, and note anything significant about what you do not

Preparation (2)

- Include your own commentary on the information that will provide fuel for your arguments, and demonstrate that you have thought this through

Preparation (3)

- Anticipate with model questions, but not model answers.

Challenge yourself instead with how you would answer questions, and what options and resources you may need to consider.

Preparation (4)

- Make your reference materials as user-friendly as possible so that you don't lose time locating what you need.

Familiarize yourself

with the format, layout and structure of your text books and source materials

Organize these with your class notes

for speedy retrieval, and index ideas and concepts with pointers and/or page numbers in the source material (Develop a system of tabs/sticky notes, color coding, concept maps, etc. to mark important summaries, headings, sections)

Write short, manageable summaries

of content for each grouping

List out data and formulas

separately for easy access

PRIYA NARAYANAN

With the current IT boom and the consequent scarcity of employable talent, the question has never been more relevant. At this juncture, open book examinations can play a significant role in reforming the education system. The problem lies in the basic pattern of examinations which generally rely on the tried and tested method of setting questions and allotting students time to write down the answers, with scant emphasis on practical aspects.

While a complete makeover of the system is almost impossible, it is worth noting that a large part of the trouble lies with the questions. Very often, these questions require as answers nothing more than memorized essays. This ultimately means that students memorize so-called important questions, regurgitate these on the answer sheet and finish the job. This is merely a stopgap technique, and eventually results in students being unable to apply any of the theory that they have learnt.

The problem is entrenched in the entire education system as the students 'learn' this practice in school and follow the same as they move on to colleges and universities. This fundamental lacking becomes starkly evident when the same students begin their careers.

The solution to this problem lies in a complete revamp of the approach to examinations, on the part of the examiners, the teachers and the students. One of the best ways of taking a fresh look at the whole system is to conduct open book exams. As the name suggests, an open book exam is basically one in which the student is allowed to bring study material into the examination hall, the extent of the material ranging from a single sheet of formulas to the prescribed textbook and, at higher levels, any reference material.

Clear benefits

- First, the crippling issue detailed earlier nearly vanishes because there is absolutely no relevance in committing facts or essays to memory. After all, if the source material is allowed into the exam hall, the questions would surely not require simply copying the data readily available with the students.
- The second and most important advantage is a direct corollary of the first. Since the basic data are available with each student, the questions would have to test application of principles. This would encourage imagination and true learning on the part of students. (And they would have to be thorough with the material they bring, otherwise they would be left turning the pages to find the required formula!)
- Another advantage relates to the common nuisance in exams — malpractice. Malpractice would be minimal because if the answers are not those that can be directly copied from textbooks, there would be no point bringing in such ‘illegal’ material. Moreover, bringing in the textbook would have been made ‘legal’ anyway.
- The effectiveness of open book exams as a partial solution to the ills ailing the examination system in the country depends on how well it is applied. There are certain practical difficulties in implementing such a system, not least of them being the imagination and effort required on the part of examiners in setting original, application-based questions.
- Moreover, sufficient care needs to be taken so that this system does not become as routine as closed book exams with predictable questions and patterns. Then, open book exams can certainly bring relief from the memorization sagas that most of today’s exams tend to become.

In an open book exam

you are evaluated on understanding rather than recall and memorization.

You will be expected to

- apply material to new situations
- analyze elements and relationships
- synthesize, or structure
- evaluate using your material as evidence

Do not underestimate the preparation needed for an open book exam:

Your time will be limited, so the key is proper organization in order to quickly find data, quotes, examples, and/or arguments you use in your answers.

Test-correlations

| | CI MCQ Guidel | CI MCQ B&C | Op MCQ B&C | Op EMQ B&C | Written Total |
|-----------------------------|------------------|---------------|---------------|---------------|------------------|
| Closed MCQ Guidelines | --- | | | | |
| Closed MCQ Basic&Clinics | .46 | --- | | | |
| Open MCQ Basic&Clinics | .31 | .69 | --- | | |
| Open EMQ Basic&Clinics | .43 | .60 | .75 | --- | |
| Written Total | .62 | .81 | .88 | .90 | ---- |



Guideline Questions too difficult or too easy?

Did the candidates prepare themselves properly?

Test-correlations

| | CI MCQ Guidel | CI MCQ B&C | Op MCQ B&C | Op EMQ B&C | Written Total |
|-----------------------------|------------------|---------------|---------------|---------------|------------------|
| Closed MCQ Guidelines | --- | | | | |
| Closed MCQ Basic&Clinics | .46 | --- | | | |
| Open MCQ Basic&Clinics | .31 | .69 | --- | | |
| Open EMQ Basic&Clinics | .43 | .60 | .75 | --- | |
| Written Total | .62 | .81 | .88 | .90 | ---- |
| P | .69 | .68 | .66 | .67 | .67 |
| KR20 | .68 | .58 | .70 | .75 | .88 |
| # | 19 | 19 | 37 | 43 | 118 |



Test-correlations

| | CI MCQ Guidel | CI MCQ B&C | Op MCQ B&C | Op EMQ B&C | Written Total |
|-----------------------------|------------------|---------------|---------------|---------------|------------------|
| Closed MCQ Guidelines | --- | | | | |
| Closed MCQ Basic&Clinics | .46 | --- | | | |
| Open MCQ Basic&Clinics | .31 | .69 | --- | | |
| Open EMQ Basic&Clinics | .43 | .60 | .75 | --- | |
| Written Total | .62 | .81 | .88 | .90 | ---- |



Testing Guidelines is a particular element