

SINDH INSTITUTE OF PHYSICAL MEDICINE AND REHABILITATION

Karachi

Office of Consultant Admission and Examination

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MCQ Workshop

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Context: The Institute is in process of developing its Examination Department. Q Bank is one of the important landmarks in this regard. The process needs continuous co-ordination, co-operation and collaboration with faculty. The need of workshops for writing “**One-Best MCQS** ” is highlighted during various meeting with faculty. These guidelines are written to help faculty members to improve the quality of the multiple-choice questions written for their examinations. The guidelines provide an overview of item formats. It briefly reviews issues related to technical item flaws and issues related to item content. We anticipate that these guidelines will be useful primarily by faculty who are teaching medical students in basic science courses.

This will act as a pre workshop handout. We will request all the faculty members to follow guidelines and step by step approach, develop at least five one best MCQs. Review by checklist and submit the hard copy or soft copy on my e-mail: drataortho@yahoo.com. This will act as feedback to develop base line and plan the workshop format to be held soon.

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Guidelines for Writing One-Best MCQS

1. Each MCQ should test an important theme and sub theme.
2. Just recall of facts is not the objective in One Best MCQs.
3. Each MCQ should test higher levels of cognition i.e. application of knowledge, interpretation, and analysis of data, critical thinking and problem solving.
4. Anatomy of One Best MCQ:

a) **Stem:**

b) **Lead in:**

c) **Options:**

a) Stem/ Clinical case scenario (vignette):

A **vignette** or clinical scenario includes description of a patient linked to theme, with all or some of the information given below:

Age, Gender (e.g. A 70-year-old lady)

Site of Care (e.g. emergency department / out patient / indoor)

Presenting complaint (e.g. pain / swelling)

Site (e.g. Abdomen / upper limb / neck)

Duration (e.g. since last 2 months/days)

Personal History (e.g. postmenopausal)

Physical Findings (e.g tenderness)

Investigations (significant positive or negative findings)

Treatment/Management (Surgical / Medication, may also include treatment given & its response)

Simple language (easy to understand by students) and include necessary relevant information only for constructing scenario.

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b) Lead in: poses a clear question or statement and follows the stem. It is the main task and should be linked to the sub-theme.

C) Options: Five options. One of them is the most appropriate or best answer (Correct Answer / Key) in that particular scenario while the other four serve as plausible distracters. All options should be homologous brief and similar in length. Give the key at the end of options list.

5. Avoid:

- Use of double negatives in stem such as "the management of this disease does not include the following steps EXCEPT."
- Using the word "EXCEPT."
- Options 'All of the above' and 'None of the above', as they reduce the number of distracters and increase the chance of guessing.
- Absolute terms such as 'Always' and 'Never' or vague terms 'Rarely' and 'Usually'.
- Grammatical inconsistencies, errors or cues.
- Logical cues - a subset of the options is collectively exhaustive
- Long correct answer - correct answer is longer, more specific, or more complete than other options
- Word repeats - a word or phrase is included in the stem and in the correct answer
- Long options, complicated, or double
- Superfluous information.
- Tricky and overly complex items.

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Example of writing one best MCQ

STEP BY STEP

- A. Select Theme:** Loss of Function
- B. Select Sub theme:** Nerve Injury
- C.** Make a list of 6-10 options (or even more) related to the selected theme and sub-theme.

Provisional Option list:

- a) Axillary Nerve
- b) Musculocutaneous Nerve
- c) Median Nerve
- d) **Radial Nerve** *
- e) Posterior Interosseous Nerve X
- f) Ulnar nerve

- D.** Select ONE option from the above list and mark it with an asterisk.
This option will be keyed as the correct (or best) answer for this MCQ.
We select Radial Nerve for developing a question.

E. Develop a Scenario / Vignette relevant to the selected option.

F. Provide only relevant data, avoid superfluous information.

Question Stem (Scenario): A boy age 24-year presents in Out Patient Clinic three days after a sports injury in middle part of his right arm. His arm is painful and he is unable to extend the wrist. Which nerve is most likely to be injured?

G. Next look at other options in the provisional list and cross out the options. We cross Posterior Interosseous Nerve to avoid confusion.

H. Finally, reduce the option list to 5; keep 4 other options that sound plausible, but are less appropriate for the given scenario as compared to the option with asterisk (correct answer).

- Final Option List**
- a) Axillary Nerve
 - b) Musculocutaneous Nerve

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c) Median Nerve

d) **Radial Nerve** *

e) Ulnar Nerve

I. Hide the option list and read the stem. Every reader must be able to select the correct answer without seeing the option list.

J. Transfer the MCQ to specific performa

K. Indicate the level for each MCQ on following parameters:

a. Importance: (1) Essential (2) Important (3) Supplementary

b. Difficulty: (1) Easy (2) Moderate (3) difficult (4) Very difficult

L. Write reference, the name of author and date.

M. Restart for the next question from first step, you may use same option list again.

Reference: Susan M. Case, and David B. Swanson, Cconstructing Written Test Questions, For the Basic and Clinical Sciences. Third edition. National Board of Medical Examiners 3750 Market Street Philadelphia, PA 19104

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Check List for One Best Option:

For authors and reviewer

S.No	What should be checked	Yes	No	Remarks
STEM:				
1	Scenario is matching with the theme			
2	Focus on an important concepts;			
3	Sufficient data is provided			
4	Clinical scenario include, age, location, presentation, duration etc			
5	Language is clear and not tricky or unnecessarily complicated			
6	No superfluous information			
Lead in statement:				
7	It is matching with sub theme			
8	It is in continuation to options			
9	It should not be negative or Terms like "except" are not used			
OPTIONS:				
10	Are homologues/ homogenous			
11	List is without any Grammatical cues			
12	Absolute terms are not used			
13	Correct answer is not longer than other options			
14	The correct answer is not having any element common with other options.			
15	Options are not long, complicated, or double			
16	Numeric data are stated consistently			
17	Distracters are plausible and attractive.			
18	Frequency terms in the options are not vague (eg, rarely, usually)			
9	Options are in a logical order			
20	"None of the above" is not used as an option			
STEM and OPTION relation				
21	Stems are longer, options are shorter			
22	There are no Logical cues in stem and options			
23	There is no repetition of words in the stem and in the correct answer			
OTHERS				
24	The answer to an item is "hinged" to the answer of a related item			

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25	Make sure the item can be answered without looking at the options			
If there is ambiguity, and hot discussion, it needs some modification.				

MCQ Format

1. Author's Name:
2. Subject:
3. Topic:
4. Semester:
5. Objective:
6. Stem:
7. Lead in:
8. Option-a)
9. Option-b)
10. Option-c)
11. Option-d)
12. Option-e)
13. Correct Option:
14. Reference:
15. Cognitive Level:
16. Difficulty Level:
17. Application Level
18. Reviewer comment
19. History: