How to set good quality SBA

Key areas you may want to cover

• Anatomy
• Physiology/Pathophysiology
• Diagnosis
• Epidemiology
• Diagnostic investigations
• Management
• Complications
• Family and community*
• Teaching and training*
• Ethics and professional practice
• Leadership and governance*

General guidelines on setting good MCQs

• Can only be Single Best Answer (A-Type) or Extended matching (R-Type).
• Must focus on common and/or life or organ threatening conditions.
• Should be pitched to assess high level of Bloom’s taxonomy.
• Questions should be checked for alignment with learning outcomes.
• Mandatory pre-test and post test vetting.
• Cut-off score should not be fixed but be based on standard setting.
Specific guidelines

• Must always have a good story (vignette).
• Age and gender are mandatory.
• The diagnosis should not be given.
• Avoid anything which may act as a lead for clever candidates.
• The story must contain an “Aha!” information or moment.

Continued

• Each item should focus on an important concept or testing point
• Each item should assess application of knowledge, not recall of an isolated fact
• The item lead-in should be focused, closed, and clear; the test-taker should be able to answer the item based on the stem and lead-in alone
• All options should be homogeneous and plausible, to avoid cueing to the correct option
• Always review items to identify and remove technical flaws that add irrelevant difficulty or benefit savvy test-takers.

Step 1

• Which common or life threatening or organ threatening concept do I want to test candidates on?

Step 2

• Write the model answer.
Step 3
• Add all possible distracters even if they are more than needed.

Step 4
• Write the instruction.

Step 5
• Add a story containing all the basics.

Step 6
• Insert the “Aha!” statement.
Vignette worksheet

1. Patient’s age and gender:
   A 47-year-old man

2. Site of care
   Emergency department

3. Chief complaint/presenting complaint (include nature of onset)
   Shortness of breath, severe chest pain, sweating

4. Duration of symptoms (include changing nature of symptoms)
   For the past 2 hours

5. Pertinent history (history of present illness (HPI), personal, medications, family)
   Hypertension treated with hydrochlorothiazide; has smoked one pack of cigarettes daily for 30 years

6. Examination findings
   Vitals: P 110, R 24, BP 110/50; chest auscultation: grade 3/6 diastolic murmur heard over the LSB with radiation to RSB; femoral pulses decreased bilaterally

7. Results of diagnostic studies
   ECG shows left ventricular hypertrophy

8. Response to initial treatment
   Not applicable

9. Lead-in
   Which of the following is the most likely diagnosis?

10. Option set (include answer)*
    A. Acute myocardial infarction
    B. Aortic dissection
    C. Oesophageal rupture
    D. Mitral valve prolapse
    E. Pulmonary embolism

Step 7

• Check if all distractors are functional.

Step 8

• Check for grammatical flaws.
Step 9

• Do a cover the option test with colleague(s).

Step 10

• Test matrix.

Step 12

• Coding.
Example

Flipped classroom

List all distractors

a) Blended approach
b) Flipped classroom
c) Problem based
d) Student centred
e) Video-enhanced

Write a story and a lead in

A teacher decided to video his lecture and upload it on Moodle. He asked his students to watch the video at home and discuss, in small groups, a few real-life scenarios in the classroom the following day. Each group then presented, and he facilitated the discussions. What term most appropriately describes this method of learning?

a) Blended approach
b) Flipped classroom
c) Problem based
d) Student centred
e) Video-enhanced

Example of a question

A 25-year-old HIV positive patient presents with cough, night sweats and fever all for two weeks. What is the next most appropriate investigation?

a. Chest X-Ray
b. Sputum culture
c. Sputum GeneXpert
d. Sputum microscopy

Common/Essential/Easy/Application/70%
Example of a question

A 25-year-old HIV positive patient is referred from the PHC clinic with cough, night sweats and fever for 2 weeks. His GeneXpert test at the clinic was negative and he was prescribed amoxycillin but has not improved. What is the next most appropriate investigation?

a. Chest X-Ray
b. Sputum culture
c. Sputum line probe assay
d. Urine LAM

Extended Matching Questions

- Decide on a theme eg: diagnosis, investigations, Management i.e. Drug Mx
- Very useful for undifferentiated conditions
- Follows similar format to SBA in terms of vignette and lead-in and options
- Two/Three plausible options per vignette
- Best done in EMQ “writing parties”
### Complaints

<table>
<thead>
<tr>
<th>Complaint</th>
<th>Abdominal mass</th>
<th>Diarrhoea</th>
<th>Haematuria</th>
<th>Rash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain</td>
<td>Dizziness</td>
<td>High blood pressure</td>
<td>Sad affect</td>
<td></td>
</tr>
<tr>
<td>Ascites</td>
<td>Dysmenorrhoea/amenorrhoea</td>
<td>Insomnia</td>
<td>Shortness of breath</td>
<td></td>
</tr>
<tr>
<td>Back pain</td>
<td>Easy bruising</td>
<td>Jaundice</td>
<td>Syncope</td>
<td></td>
</tr>
<tr>
<td>Bizarre behaviour</td>
<td>Failure to thrive</td>
<td>Joint pain</td>
<td>Urinary problems</td>
<td></td>
</tr>
<tr>
<td>Breast lump</td>
<td>Fatigue</td>
<td>Limb weakness</td>
<td>Vaginal discharge / pruritis</td>
<td></td>
</tr>
<tr>
<td>Chest pain</td>
<td>Fever</td>
<td>Lymphadenopathy</td>
<td>Vaginal bleeding / pain</td>
<td></td>
</tr>
<tr>
<td>Confusion</td>
<td>Flank pain</td>
<td>Melaena</td>
<td>Weight gain</td>
<td></td>
</tr>
<tr>
<td>Cough</td>
<td>Headache</td>
<td>Nausea and vomiting</td>
<td>Weight loss</td>
<td></td>
</tr>
<tr>
<td>Developmental delay</td>
<td>Haematemesis</td>
<td>Palpitations</td>
<td>Wheezing</td>
<td></td>
</tr>
</tbody>
</table>

### Step 14

- Review and vetting at most 2-yearly.

### Questions

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