Faculty of Medicine, Nursing and Health Sciences policy

Policy Title	Multiple Choice Questions policy - Faculty of Medicine, Nursing and Health Sciences
Parent Policy/Procedure	
Date Effective	October 2018
Review Date	October 2020
Policy Owner	Deputy Dean Education Faculty of Medicine, Nursing and Health Sciences
Category	Academic Quality and Standards
Version Number	2
Content Enquiries	Email: med-quality-fmnhs@monash.edu
Scope	This policy applies to all undergraduate and postgraduate coursework courses and units offered in the Faculty of Medicine, Nursing and Health Sciences as well as units in which the Faculty has majority teaching responsibility.
Purpose	This policy has been developed to provide clarity around the construction of effective Multiple Choice Questions (MCQs) for assessment purposes.

This policy is based on the references provided by the Australian Medical Assessment Collaboration (AMAC, 2014) and the American National Board of Medical Examiners Manual (NBME, 1998); these also contain useful examples. It is highly recommended that consultation of the Monash Assessment Vision (2016) is considered when developing MCQ tests. Based upon the literature and supporting evidence, the Faculty recommends the use of 3 distractors and one correct answer. This helps to separate the quality of the question to the number of distractors.

The expectations of the Office of the Deputy Dean Education is that constructed MCQ tests are appropriate to:

- Year level of study;
- Scaffolded horizontally and vertically across the course; and
- Provide cognitive understanding and knowledge of content in relation to course and unit learning outcomes

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1. Quality

Multiple Choice Questions are forms of assessment that enable measurement of achievement of the unit learning outcomes, by the student. In order to test the level of knowledge and competency, quality and effectiveness must be considered in the construction of MCQs.

Four elements of quality are considered relevant when creating MCQs for assessment purposes and are outlined in the table below:

Elements of Quality	Explanation	Reference link
Indicators of knowledge/ability	The student must have the knowledge to adequately answer the question. The question must be an optimal indicator for presence or absence of knowledge. Assessment tasks must be designed to help students engage with ideas, skills and practices that they will develop further during their unit or course.	AMAC, p 5 Monash Assessment Vision
Creativity and relevance	Create questions that are contextualised using: ● case based realistic information where the answer (key) is defensively correct; ● transformed by restating or paraphrasing relevant concepts	AMAC, p14
Format versus content	Case based questions are superior for testing higher order cognitive skills compared to rote learned factual recall of content questions. True/false questions are not recommended. For recall questions a one minute per question timeframe would be appropriate. For higher order vignettes the timeframe required to complete the questions would be discretionary.	AMAC, p18 NBME, p18
Difficulty and purpose of assessment item	The purpose of each individual item is to make overall judgements about students understandings and performances in relation to the unit learning outcomes.	Monash Assessment Vision AMAC, p19

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2. Components of MCQs

Multiple choice questions have four distinct parts (AMAC, p5):

1. Stem (Vignette) - context around which the question is asked. Can be a short vignette or case scenario
2. Question (Lead in) - clearly stated question to indicate what the student has to do
3. Distractors (Options) - the alternative incorrect options to the question
4. Answer (Key) - the correct answer

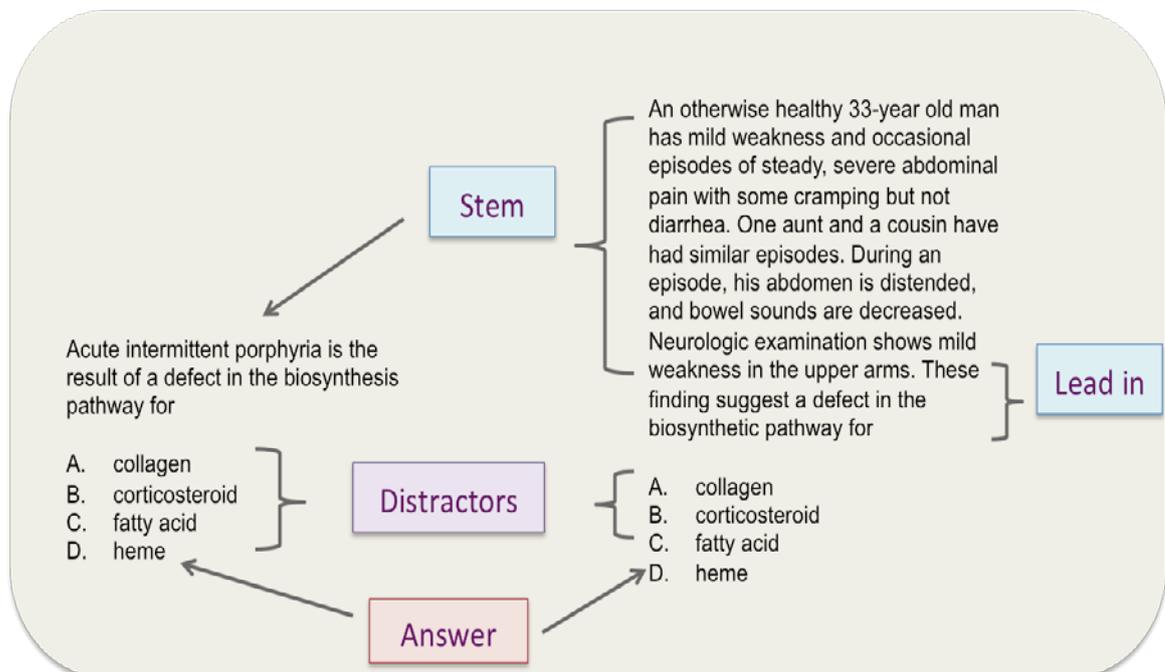These are detailed in Figure 1 giving an example of two items written to assess the same topic.

Figure 1 Left question written as combined stem and lead in; Right question written as a case scenario with separate lead in *(adopted from NBME, page37).*

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3. Checklist for MCQs

General:	check
Checked and validated by peers	
Questions significantly different from previous years (MNHS Assessment policy)	
Stem and question are clearly stated and unambiguous	
There is only one defensibly correct answer and 3 distractors	
Quality of distractors and correct answer:	
All of similar length	
Grammatically correct	
No absolute (always/never) and vague options (maybe, sometimes)	
No collective options (all/none of the above)	
One aspect per option tested	
Absence of logical cues	
Positively framed question (use 'is correct/true/false' rather than 'is not correct/true/false')	
Correct answer spread equally across the options (correct answer not always option 'C')	

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Responsibility for implementation	
Status	Amended
Approval Body	**Name:** Faculty Learning and Teaching Committee **Meeting:** 4/2018 **Item:** 7.3 **Date:** 17/9/18
Definitions	
Related Policies	
Related Documents	## Guideline References: Australian Medical Assessment Collaboration (AMAC) 2014, *Determining the quality of assessment items in collaborations: aspects to discuss to reach agreement*, https://www.acer.org/files/quality-determination-of-assessment-items-amac-resource.pdf National Board of Medical Examiners, 1998. *Constructing written test questions for the basic and clinical sciences,* MA Paniagua & KA Swygert (eds.), Philadelphia, http://www.nbme.org/publications/item-writing-manual.html Monash University 2016, Monash Assessment Vision, http://www.intranet.monash/learningandteaching/learningandteachingquality/assessment-vision ## Further References: Al-Rukban, MO 2006, 'Guidelines for the construction of multiple choice questions tests', *Journal of Family & Community Medicine*, vol. 13, no. 3, pp.125-133. Anderson, LW & Krathwohl, DR 2001, *A Taxonomy for learning, teaching and assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, Longman, New York, http://search.lib.monash.edu/MON:au_everything:catau21158564320001751 Bloom, BS 1956 *Taxonomy of educational objectives: The classification of educational goals*, D. MacKay, New York, http://search.lib.monash.edu/MON:au_everything:catau21161706580001751 Burton, SJ, Sudweeks, RR, Merrill, PF, & Wood, B 1991, 'How to Prepare Better Multiple Choice Test Items: Guidelines for University Faculty', Brigham Young University Testing Services and The Department of Instructional Science, viewed at: https://testing-beta.byu.edu/handbooks/betteritems.pdf Cheung, D & Bucat, R 2002, 'How can we construct good multiple-choice items', paper presented at the *Science and Technology Education Conference, 20-21 June, Hong Kong,* viewed at: https://www3.fed.cuhk.edu.hk/chemistry/files/constructmc.pdf

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