



## Diploma in Pharmaceutical Medicine past exam papers 2017-2019

These are the past examination papers for the Diploma in Pharmaceutical Medicine examination for the past three years.

### Short answer past exam papers (SAQ)

Please find enclosed the SAQ papers for the examinations from 2017 to 2019, accompanied by some example questions and model answers to assist you with your preparation for the examination.

### Critical appraisal past exam papers (CAP)

Please find enclosed the CAP papers for the examinations from 2017 to 2019. The journal article for 2017 it was Routine Amoxicillin for Uncomplicated Severe Acute Malnutrition in Children [Sheila Isanaka, Sc.D., et al 2016], for 2018 The prevalence of sacroiliitis in patients with acne vulgaris using isotretinoin, Cutaneous and Ocular Toxicology [Leyla Baykal Selçuk et al, 2017] and for 2019 Evaluation of Soy Phytoestrogens for the Treatment of Hot Flashes in Breast Cancer Survivors: A North Central Cancer Treatment Group Trial [Susan K. Quella, Charles L. Loprinzi, Debra L. Barton et al J Clin Oncol 2000; 18: 1068- 1074].

### Multiple choice past exam papers (MCQ)

FPM cannot provide copies of past MCQ papers, but a few examples are provided. A copy of the MCQ paper answer sheet is provided so that you can familiarise yourself with the instructions.

### Copyright

Due to copyright legislation, these examination papers must not be duplicated in any way without prior permission of FPM.

### Further information

Further information about the examination can be found on our website at [www.fpm.org.uk](http://www.fpm.org.uk) or by contacting FPM's Examinations and Standards Manager at [exams@fpm.org.uk](mailto:exams@fpm.org.uk).



**FACULTY OF PHARMACEUTICAL MEDICINE**  
**of the Royal Colleges of Physicians of the United Kingdom**

**DIPLOMA IN PHARMACEUTICAL MEDICINE PART 2 EXAMINATION**  
**14 OCTOBER 2019**

**SHORT ANSWER QUESTIONS - INSTRUCTIONS TO CANDIDATES**

- 1. Two hours and 30 minutes** are allowed for answering this paper.  
Allow 15 minutes for each question.
- 2. Answer all 10 questions.**  
You do not have to answer the questions in numerical order.
- We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays.
- 4. Each question is worth 10 marks.**

Where questions have more than one part, the number of marks available for each part is shown.

The number of marks shown for each part should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments of <1 marks.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that part of the question.

- Complete the **front cover of the answer book** with your last name, forename(s), candidate number and signature.
- Begin each question on a new page and write only on one side.**  
Please do not write outside the margins of the pages.
- On each page of your answer book**, write your candidate number, the question number and the page number – Do NOT write your name.

*e.g. candidate 12 starting their second page in answer to question 5 would complete the answer book page as:*

Candidate No:	12	Short Answer Questions	Question No:	5	Page No:	2
---------------	----	------------------------	--------------	---	----------	---

- When the Invigilator announces the end of the session, please stop writing **immediately**, place everything into the candidate envelope and stay in your seat until we've collected **all** envelopes.

## SAQ Paper 2019

- 1** You are the pharmaceutical physician responsible for reviewing the non-clinical data package to decide if a candidate drug should be taken into first in human studies. The data from the repeat dose *in vivo* dog study show a significant reduction in renal function.

Briefly describe 10 important factors/considerations that will help to decide whether to take this candidate drug into first in human studies.

**(10 marks)**

- 2** For a healthy volunteer, single ascending dose, first in human study, dose escalation meetings are held.

a) Briefly describe the data required to be reviewed during these meetings.

**(3 marks)**

b) Briefly describe 4 potential outcomes following review of data at these meetings.

**(4 marks)**

c) Briefly describe 3 important logistical considerations for the conduct of each meeting

**(3 marks)**

- 3** a) Define a biomarker.

**(2 marks)**

b) Briefly describe 8 different uses of biomarkers in drug development.

**(8 marks)**

*(Note: You are not required to name any specific biomarkers to score full marks, although examples can be given to illustrate your answer.)*

- 4 a) What are “controls” in a case-control study? **(1 mark)**
- b) Briefly describe the advantages and disadvantages of a case- control study. **(6 marks)**
- c) Briefly describe the general principles of selecting controls. **(3 marks)**

- 5 A meta-analysis of 6 randomised controlled trials was performed to determine the effect of statins (versus placebo) on all-cause mortality in a primary prevention setting.

The table below includes only the data from 2 of the trials (Trials A & B) and the overall meta-analysis result for this endpoint (expressed as an odds ratio with 95% confidence interval [CI]).

Source	Statins (no. patients with event / total no. patients treated)	Placebo (no. patients with event / total no. patients treated)	Odds ratio (95% CI)
Trial A	30 / 2000	50 / 2000	0.59 (0.38, 0.94)
Trial B	15 / 500	25 / 500	0.62 (0.27, 1.37)
Overall	180 / 7000	280 / 7000	0.63 (0.52, 0.77)

- a) Draw (using appropriate symbols) and label a Forest Plot showing the odds ratio results you have been given for trials A and B and the overall meta-analysis. **(4 ½ marks)**
- b) Assuming similar trial design (patient eligibility etc..) for trials A and B, briefly comment on how the results (for trials A and B) differ and a likely reason for this. **(2 marks)**
- c) For trial A:
- Show how the odds ratio would have been calculated by showing the equation using the data you have been given. **(1 mark)**
  - Give the value of the odds reduction. **(½ marks)**
- d) In performing a meta-analysis the following techniques may be undertaken: “Funnel plot”, “Sensitivity Analysis” and “Testing for Heterogeneity”. Choose ONE of these **(2 marks)**

- 6 a) What is meant by “adaptive design” in clinical trials? **(2 marks)**
- b) List 6 different aspects of a study that may be adapted in this way. **(3 marks)**
- c) Briefly describe 3 benefits of using an adaptive design approach. **(3 marks)**
- d) Briefly describe 2 potential problems with adaptive design, which need to be considered when evaluating the results. **(2 marks)**
- 7 a) What is the meaning of “expected” with reference to an adverse drug reaction (ADR) with an investigational medicinal product? **(2 marks)**
- b) What reference would you use to judge whether an ADR is expected:
- i. in a clinical trial with an unlicensed medicine? **(1 mark)**
  - ii. for a spontaneous report with a marketed product? **(1 mark)**
- c) What is the time-frame for expedited reporting by the Sponsor to regulatory authorities of a:
- i. fatal or life-threatening unexpected ADR? **(1 mark)**
  - ii. serious, unexpected ADR that is not fatal or life-threatening? **(1 mark)**
- d) What is the purpose of the company core datasheet (CCDS)? **(2 marks)**
- e) List the sections of the CCDS that comprise the core **(2 marks)**

- 8** Drug X is indicated for the treatment of epilepsy. It has been found to be associated with an increased risk of neuro-developmental delay in children exposed to it *in utero*, and therefore the use of Drug X should be avoided in women of child-bearing potential and in pregnant women.
- a) Briefly describe two regulatory actions that the Marketing Authorisation Holder (MAH) should take in response to these new safety data. **(2 marks)**
- The regulatory authorities require the MAH to implement a pregnancy prevention programme (PPP) for Drug X, with the aim of reducing exposure of the foetus to drug X.
- b) Briefly describe 6 measures that could be included in the PPP. **(6 marks)**
- c) Briefly describe how the overall effectiveness of the PPP (not the individual measures themselves) can be assessed. **(2 marks)**
- 9** a) What are the 4 key criteria that require medicinal products to be subject to prescription? **(4 marks)**
- b) Drug V, an oral PDE5 inhibitor (a selective vasodilator) on the market for 20 years for the treatment of erectile dysfunction, is proposed to be reclassified from prescription to non-prescription (pharmacy) status in the United Kingdom.
- For each of the criteria you have given for part a), identify which of these criteria are likely to be barriers to the reclassification of drug V, giving reasons to justify your answer. **(4 marks)**
- c) Briefly discuss why the symptoms of a condition, such as erectile dysfunction, make the condition suitable for non-prescription status. **(2 marks)**
- 10** With reference to the ABPI Code of Practice, briefly describe key features of the following:
- a) Advanced Budgetary Notification. **(5 marks)**
- b) Joint Working of a pharmaceutical company with the National Health Service (NHS). **(5 marks)**



**FACULTY OF PHARMACEUTICAL MEDICINE**  
**of the Royal Colleges of Physicians of the United Kingdom**  
**DIPLOMA IN PHARMACEUTICAL MEDICINE PART 2 EXAMINATION**  
**15 OCTOBER 2018**

**SHORT ANSWER QUESTIONS - INSTRUCTIONS TO CANDIDATES**

- 1. Two hours and 30 minutes** are allowed for answering this paper.  
Allow 15 minutes for each question.
- 2. Answer all 10 questions.**  
You do not have to answer the questions in numerical order.
- 3.** We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays.
- 4. Each question is worth 10 marks.**

Where questions have more than one part, the number of marks available for each part is shown.

The number of marks shown for each part should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments of <1 marks.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that part of the question.

- 5.** Complete the **front cover of the answer book** with your last name, forename(s), candidate number and signature.
- 6. Begin each question on a new page and write only on one side.**  
Please do not write outside the margins of the pages.
- 7. On each page of your answer book**, write your candidate number, the question number and the page number:

*e.g. candidate 12 starting their second page in answer to question 5 would complete the answer book page as:*

Candidate No:	12	Short Answer Questions	Question No:	5	Page No:	2
---------------	----	------------------------	--------------	---	----------	---

- 8.** When the Invigilator announces the end of the session, please stop writing **immediately** and stay in your seat until we've collected the question paper, your answer book and any other notes you have made.

## SAQ Paper 2018

- 1**
- a) List 4 methods for the non-clinical assessment of QT prolongation. **(2 marks)**
  - b) What information do these tests provide for clinical development? **(3 marks)**
  - c) Briefly describe the factors that influence the decision to continue clinical development when a positive signal for QT prolongation is seen in non-clinical testing. **(5 marks)**
- 2**
- A fixed dose combination (FDC) is a product which combines two or more active substances in one dosage form.
- a) Briefly describe the potential benefits of a FDC, giving examples where relevant to illustrate your answer. **(7 marks)**
  - b) Briefly describe 3 potential disadvantages of a FDC approach. **(3 marks)**  
*Note: your answer to part b) should not be opposites to your answer for part a)*
- 3**
- a) Briefly describe the features of a study to evaluate the effect of food on the pharmacokinetics of an oral antibiotic. Include the design, population and endpoints. **(5 marks)**
  - b) List 3 mechanisms by which food may affect the bioavailability of a drug. **(3 marks)**
  - c) List 2 physicochemical properties of a drug which make it more likely that food will affect its pharmacokinetics. **(2 marks)**
- 4**
- a) What is a 'concurrent control group' in a prospective clinical trial and what is its purpose? **(2 marks)**
  - b) List 4 different types of treatments that can be used for a control group in clinical trials. **(2 marks)**
  - c) Describe the considerations when choosing a control group for a clinical trial. **(6 marks)**



- 5** In a phase 3 clinical trial, 1000 patients were treated for one year with a new investigational drug X, whilst another 1000 patients received placebo for a year. The event of interest for the primary endpoint was a composite of all-cause mortality and non-fatal myocardial infarction (MI). After one year, 50 patients in the Drug X group were dead or had a non-fatal MI versus 100 patients in the placebo group.
- a) Briefly describe 2 key safeguards which should make a placebo control arm ethically acceptable in this trial. **(2 marks)**
- b) What would be the null hypothesis for this trial? **(1 mark)**
- c) What do you understand by a type 1 and a type 2 error and give a typical value you would expect the statistician to assume for the type 2 error in this trial? **(3 marks)**
- d) Show how you would calculate the relative risk reduction (RRR) for drug X on death and non-fatal MI in this trial using the information given. **(2 marks)**  
*Note: you do not need to calculate the actual value, full marks will be awarded by showing the method.*
- e) The absolute risk reduction (ARR) in this trial was 5%. Calculate the Number Needed to Treat (NNT) and explain what the NNT means in the context of this trial. **(2 marks)**
- 6** A new chemical entity (NCE) has just been approved through the European Union (EU) centralised procedure.
- a) Apart from patent protection, what types and duration of protection will this new NCE enjoy from generic competition, assuming it is not an orphan drug? **(2 marks)**
- b) List 2 ways that you can extend the period of protection in the post-authorisation period. **(2 marks)**
- Commonly in the centralised procedure, the applicant is required to submit further data following approval.
- c) List 4 different examples of these “Post-Authorisation Measures”. **(4 marks)**  
*Note: do not include routine requirements, such as renewal applications.*
- d) For 2 of the examples you have given in part c), explain when/why this measure might be requested. **(2 marks)**

- 7** You are the global medical affairs physician for a marketed product. A manufacturing issue has occurred.
- a) Briefly describe the factors you would need to take into consideration when assessing whether to recall the product from the market? **(8 marks)**
  - b) List 2 sources of information your company could use to assess the clinical impact of the manufacturing issue. **(2 marks)**
- 8**
- a) Briefly describe the role of the European Union Qualified Person for Pharmacovigilance (EU QPPV). **(2 marks)**
  - b) Briefly describe the requirements a company must meet when appointing an EU QPPV. **(5 marks)**
  - c) What is the Pharmacovigilance Risk Assessment Committee (PRAC) and its role? **(3 marks)**
- 9** Transparency is a key principle in pharmaceutical medicine. Briefly describe what, when and how the following should be declared in the UK:
- a) Clinical trials. **(4 marks)**
  - b) Support given to Patient Organisations by a pharmaceutical company. **(1 ½ marks)**
  - c) Transfers of value made to Healthcare Professionals who work with a pharmaceutical company. **(4 ½ marks)**
- 10**
- a) In the context of health technology assessments (HTAs) and economic evaluations, what do you understand by:
    - i. Quality-adjusted-life-years (QALYs) **(4 marks)**
    - ii. Incremental cost effectiveness ratio (ICER)
  - b) How does an ICER influence whether an intervention is funded? **(1 mark)**
  - c) Drug Z is an investigational oral medication for lung cancer about to start phase 3 trials. Current standard of care is intravenous chemotherapy. Apart from traditional efficacy and safety data to achieve registration, briefly discuss the types of data you would expect to see collected in the pivotal phase 3 programme that will support the production of robust economic models for future HTA submissions. **(5 marks)**



**FACULTY OF PHARMACEUTICAL MEDICINE**  
**of the Royal Colleges of Physicians of the United Kingdom**

**DIPLOMA IN PHARMACEUTICAL MEDICINE PART 2 EXAMINATION**  
**16 OCTOBER 2017**

**SHORT ANSWER QUESTIONS - INSTRUCTIONS TO CANDIDATES**

- 1. Two hours and 30 minutes** are allowed for answering this paper.  
Allow 15 minutes for each question.
- 2. Answer all 10 questions.**  
You do not have to answer the questions in numerical order.
- 3.** We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays.
- 4. Each question is worth 10 marks.**

Where questions have more than one part, the number of marks available for each part is shown.

The number of marks shown for each part should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments of <1 marks.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that part of the question.

- 5.** Complete the **front cover of the answer book** with your last name, forename(s), candidate number and signature.
- 6. Begin each question on a new page and write only on one side.**  
Please do not write outside the margins of the pages.
- 7. On each page of your answer book**, write your candidate number, the question number and the page number:  
*e.g. candidate 12 starting their second page in answer to question 5 would complete the answer book page as:*

Candidate No:	12	Short Answer Questions	Question No:	5	Page No:	2
---------------	----	------------------------	--------------	---	----------	---

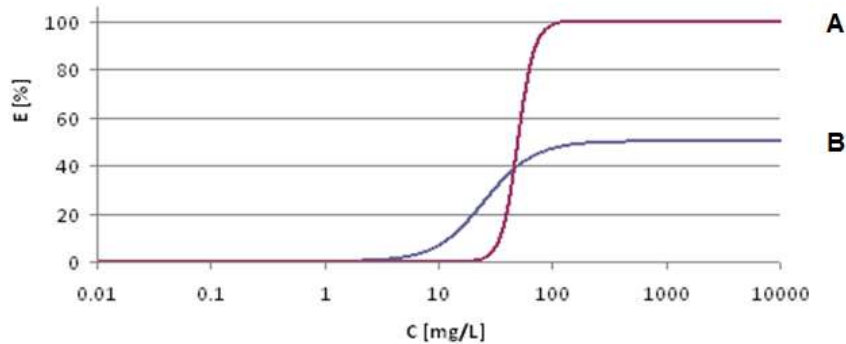
- 8.** When the Invigilator announces the end of the session, please stop writing **immediately** and stay in your seat until we've collected the question paper, your answer book and any other notes you have made.

## SAQ Paper 2017

- 1** The European Medicines Agency (EMA) state on their website that they are committed to enabling early patient access to new medicines and offer various regulatory support mechanisms to facilitate this. The Medicines and Healthcare Products Regulatory Agency (MHRA) also offer a support mechanism.
- a) List 4 different regulatory support mechanisms, offered either by the EMA or the MHRA to facilitate earlier patient access to medicines. **(2 marks)**
- (note: marketing authorisation under exceptional circumstances is not an earlier access mechanism)*
- b) For 2 of the support mechanisms you have listed in a) above, briefly describe: **(8 marks)**
- The eligibility criteria for medicines to use this regulatory support mechanism.
  - Two key features of this mechanism that facilitate earlier access.
  - The final marketing authorisation status of the medicine after using this early access support mechanism.
- 2** a) What is a medication error? **(2 marks)**
- b) For the following 4 different potential sources of medication errors (prescribing, storing, dispensing, preparing/administering medicinal products) give 2 examples of medication errors and briefly describe how routine and additional risk minimisation measures can be used to prevent them. **(8 marks)**
- 3** a) List the minimum information required for an adverse event report to be valid. **(2 marks)**
- b) Briefly describe what MedDRA is and its intended purpose. **(3 marks)**
- c) What is a safety signal? **(2 marks)**
- d) List 6 potential sources of safety signals for a marketed product. **(3 marks)**
- 4** With respect to the European Medicines Agency (EMA) *Guideline on strategies to identify and mitigate risks for first-in human and early clinical trials with investigational medicinal products* briefly describe 10 risks factors (at least 3 must be from each of the headings below) that may predict the potential for severe adverse reactions in a first-in-human use of an investigational medicinal product. **(10 marks)**
- Mode of action.
  - Nature of the target.
  - Non clinical safety studies / Relevance of animal models.

- 5 The graph below compares the concentration response for 2 different candidate agonist molecules A and B on the same receptor.

*y axis = receptor effect [E] vs. x axis = drug concentration [C]*



- a) Define the affinity of a molecule. **(1 mark)**
- b) Define Emax and EC50. **(1 mark)**
- c) Describe the data and conclusions that can be made regarding these agonist molecules A and B with respect to: **(6 marks)**
- Emax.
  - EC50.
  - The slope of the concentration curves.
- d) With respect to efficacy and safety considerations, under what 2 conditions would you favour molecule A? **(2 marks)**
- 6 For a first-in-human trial in healthy volunteers assessing single and multiple doses of a novel small molecule (Drug X):
- a) What is the usual primary objective of this type of study? **(1 mark)**
- b) Briefly describe 4 representative endpoints to assess this primary objective. **(4 marks)**
- c) List 2 other typical objectives in such a trial. **(1 mark)**
- d) For one of the objectives given in part c) above, briefly describe 2 representative endpoints used to assess this objective. **(2 marks)**
- If this trial involved a biological medicinal product, instead of a small molecule:
- e) Give a key additional objective and its associated endpoint that you would need to include. **(2 marks)**

- 7** c) With respect to the trial population defined in a study protocol, what do you understand by a “protocol waiver” and what is the Regulator Authorities’ view of protocol waivers? **(2 marks)**
- d) You are the medical monitor for a respiratory trial. What advice would you give for the following situations below:
- i. The Site Investigator/Coordinator calls you. A patient they wish to randomise, who met all the eligibility criteria at the screening visit 1 week ago, now just fails on the FEV1 eligibility criterion required at the randomisation visit. The patient is keen to enter the study and the Investigator feels the trial is the best option for the patient so requests permission to randomise the patient. **(2 marks)**
  - ii. During a monitoring visit of the same trial, but at another site, your Clinical Research Associate (CRA) discovers a patient failed on the FEV1 eligibility criterion at the randomisation visit but was randomised and entered the study anyway. The patient is now 4 weeks into the trial. **(3 marks)**
- e) For the patient described in part b ii), briefly describe what key analysis sets they should, or should not be included in. **(3 marks)**
- 8** d) What do you understand by an event driven (time to an event) study? **(2 marks)**
- e) With respect to the assumptions made for the event rate, list 2 important trial logistics that must be in place for a time to an event trial. **(2 marks)**
- f) If during the conduct of the trial the event rate is lower than expected, briefly describe 4 different options available to you to ensure the trial can be completed. **(2 marks)**
- g) For 2 of the options you have listed in c), briefly describe what you must do to implement that option. **(4 marks)**
- 9** An advisory board meeting held by a company is a meeting at which invited experts are paid to give scientific advice on topics relevant to the company’s products.
- a) Briefly describe the key aspects to be aware of to ensure an advisory board is non-promotional. **(5 marks)**
  - b) Give 3 requirements that are the same for an advisory board and a promotional meeting under the ABPI Code of Practice. **(3 marks)**
  - c) List 2 other circumstances where healthcare professionals may be paid for their clinical expertise by companies. **(2 marks)**

**10** Your company has just completed the phase 3 studies for Product X and is preparing for Health Technology Assessment (HTA) submissions.

a) List 8 essential types of information that need to be included in the HTA submission. **(4 marks)**

Due to the anticipated budget impact of the unlicensed Product X, the company plans to conduct an Advanced Budgetary Notification Programme.

b) Apart from having “an anticipated budget impact” briefly describe 3 other important considerations that are in accordance with an Advanced Budgetary Notification being conducted. **(3 marks)**

c) Product X is to be launched in partnership with another company.

i. What is co-promotion? **(1 mark)**

ii. List 2 requirements of co-promotion under the ABPI Code of Practice. **(2 marks)**

## Example Short Answer Question and Model Answer

<b>Describe the mechanisms responsible for drug-drug interactions. Illustrate your answer with relevant examples.</b>	
Pharmaceutical (physicochemical)	0.5
<ul style="list-style-type: none"> <li>• Incompatible infusions</li> </ul>	
Pharmacokinetic	0.5
<ul style="list-style-type: none"> <li>• Presystemic: numerous mechanisms <ul style="list-style-type: none"> <li>• Alter gastric pH</li> <li>• Within gut lumen e.g., chelation by tetracyclines; anion binding resins</li> <li>• Within gut wall e.g., p-glycoprotein</li> <li>• Gut motility e.g., metoclopramide can improve availability of analgesics in migraine; (reduction in motility e.g., opiates, tricyclics; rarely important)</li> <li>• Bacterial flora e.g., antibiotics and OCP; digoxin</li> <li>• Vasodilators and transdermal drug administration</li> </ul> </li> </ul>	1.5
<ul style="list-style-type: none"> <li>• Protein binding <ul style="list-style-type: none"> <li>• Little relevance; may be confused with enzyme inhibition</li> </ul> </li> </ul>	0.5
<ul style="list-style-type: none"> <li>• Metabolism <ul style="list-style-type: none"> <li>• Induction - slow onset; requires protein synthesis</li> <li>• Inhibition - immediate</li> <li>• Can be specific or non-specific</li> <li>• Most frequently involve cytochrome P450; numerous examples;</li> <li>• Others e.g., monamine oxidase inhibitors</li> </ul> </li> </ul>	1.5
<ul style="list-style-type: none"> <li>• Renal excretion <ul style="list-style-type: none"> <li>• Competition for tubular secretion e.g., penicillin &amp; probenecid</li> <li>• Effects on electrolyte transport e.g., diuretics &amp; lithium</li> <li>• Changes in urine pH e.g., alkalinisation used to increase excretion of aspirin</li> </ul> </li> </ul>	1
Pharmacodynamic	0.5
<ul style="list-style-type: none"> <li>• Receptor interactions <ul style="list-style-type: none"> <li>• Antagonism, e.g., naloxone &amp; opiates</li> <li>• Synergism</li> </ul> </li> </ul>	2
<ul style="list-style-type: none"> <li>• Via different mechanisms <ul style="list-style-type: none"> <li>• Similar pharmacodynamic effect e.g., different anti-hypertensives; warfarin &amp; anti-platelet agents</li> <li>• Opposing pharmacodynamic effect e.g., antihypertensive &amp; NSAID</li> <li>• Changes in sensitivity e.g., digoxin and hypokalaemia 2<sup>o</sup> diuretic therapy</li> </ul> </li> </ul>	2





**FACULTY OF PHARMACEUTICAL MEDICINE  
of the Royal Colleges of Physicians of the United Kingdom  
DIPLOMA IN PHARMACEUTICAL MEDICINE EXAMINATION PART 2**

**14 OCTOBER 2019**

**CRITICAL APPRAISAL PAPER - INSTRUCTIONS TO CANDIDATES**

- 1. Two hours and 30 minutes** are allowed to read the publication and complete the written examination.
- Please allow sufficient time to complete **all the questions**.
- Ensure you make a thorough review of the entire publication as the questions may address any part of it.
- We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays. Make sure you clearly indicate which number question you are answering.
- The number of marks shown for each question should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments <1 mark.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that question.

- Complete the front cover of the answer book with your last name, forename(s), candidate number and signature.
- Begin each question on a new page and write only on one side of the paper. Do not write outside the margins of the pages.
- On each page used, fill in your candidate number and the page number. Pages should be numbered consecutively from the beginning:

e.g. candidate 12 starting their second page would complete the answer book page as:

Candidate No:	12	Critical Appraisal Paper	Page No:	2
---------------	----	--------------------------	----------	---

- When the Invigilator announces the end of the session, please stop writing immediately, place everything back into the candidate envelope and stay in your seat until we've collected all envelopes.

## CRITICAL APPRAISAL 2019

*Evaluation of Soy Phytoestrogens for the Treatment of Hot Flashes in Breast Cancer Survivors: A North Central Cancer Treatment Group Trial*  
Susan K. Quella, Charles L. Loprinzi, Debra L. Barton et al *J Clin Oncol* 2000; 18: 1068- 1074

1. Briefly state the objective of the study. **(2 marks)**
  
2. Describe the rationale for conducting this study. **(4 marks)**
  
3. The study used a cross over design.  
  
Considering cross over study designs in general terms, give 2 advantages and 2 disadvantages of a cross over trial versus a parallel group design. **(4 marks)**
  
4. The study used randomisation.
  - a) Describe how patients were randomised to treatment. **(3 marks)**
  - b) Briefly explain why randomisation was performed this way? **(1 marks)**
  
5. Apart from randomisation, list 6 other design characteristics of this study. **(3 marks)**
  
6. List the eligibility criteria. **(3 marks)**
  
7. Comment on the recruitment and screening of study subjects. **(2 marks)**
  
8. With respect to patient flow (disposition), describe the information given in the paper and identify what information is missing or is inconsistent. **(5 marks)**

9. a) Look at Figure 1 on page 1071. What does this show about the efficacy of soy phytoestrogen versus placebo? **(1 mark)**
- b) Provide 2 comments on a key limitation of the trial design, which is evident by looking at this figure. **(2 marks)**
- c) Give one limitation in the way the intensity of hot flashes was graded. **(1 marks)**
10. Comment on the way that side effects were assessed and reported in the study. **(3 marks)**
11. Comment on the way that compliance with the study medication was assessed and reported in the study. **(3 marks)**
12. Briefly describe 4 other limitations of the study design as described in this paper that you have not already mentioned. **(4 marks)**
13. You are a pharmaceutical physician in charge of this development programme and have been asked to design a new trial to give a robust go no-go decision for further evaluation of soy phytoestrogens as a treatment for hot flashes.
- Briefly describe and justify TWO key features for EACH of the following:
- a) Trial design characteristics **(2 marks)**
- b) Patient population **(2 marks)**
- c) Endpoints and their assessment. **(2 marks)**
14. This trial was published in 2000. If it were to be conducted now in the European Union, briefly describe:
- a) The requirements for public disclosure of the results of the trial. **(2 marks)**
- b) How potential conflicts of interest should be disclosed. **(1 marks)**



FACULTY OF PHARMACEUTICAL MEDICINE  
of the Royal Colleges of Physicians of the United Kingdom

DIPLOMA IN PHARMACEUTICAL MEDICINE EXAMINATION

PART 2

15 OCTOBER 2018

CRITICAL APPRAISAL PAPER - INSTRUCTIONS TO CANDIDATES

1. **Two hours and 30 minutes** are allowed to read the publication and complete the written examination.
2. Please allow sufficient time to complete **all the questions**.
3. Ensure you make a thorough review of the entire publication as the questions may address any part of it.
4. We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays. Make sure you clearly indicate which number question you are answering.
5. The number of marks shown for each question should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments <1 mark.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that question.

6. Complete the front cover of the answer book with your last name, forename(s), candidate number and signature.
7. Begin each question on a new page and write only on one side of the paper. Do not write outside the margins of the pages.
8. On each page used, fill in your candidate number and the page number. Pages should be numbered consecutively from the beginning:

e.g. candidate 12 starting their second page would complete the answer book page as:

Candidate No:	12	Critical Appraisal Paper	Page No:	2
---------------	----	--------------------------	----------	---

9. When the Invigilator announces the end of the session, please stop writing **immediately** and stay in your seat until we've collected the question paper, the publication, your answer book and any other notes you have made.

## CRITICAL APPRAISAL 2018

*The prevalence of sacroiliitis in patients with acne vulgaris using isotretinoin  
(Leyla Baykal Selçuk, Deniz Aksu Arıca, Hanife Baykal Şahin, Savas Yaylı & Sevgi Bahadır, 2017)*

1. Briefly state the objectives of the study. **(2 marks)**
  
2. The authors have described the study as a retrospective prospective study.
  - a) Explain what is meant by retrospective and prospective in the context of this study. **(1 mark)**
  
  - b) List 6 other design characteristics of this study. **(3 marks)**
  
3. Describe the rationale for conducting this study. **(3 marks)**
  
4. Describe the potential mechanism and evidence for isotretinoin induced sacroiliitis as discussed in this publication. **(4 marks)**
  
5. a) One of the exclusion criteria is "*Subjects with depression and similar psychiatric diseases.*" Give 2 plausible reasons for this criterion. **(2 marks)**  
  
b) List the eligibility criteria for patients in terms of prior treatments for acne vulgaris. **(1 mark)**  
  
c) Give one plausible advantage and one plausible disadvantage for the requirements described in part b). **(2 marks)**
  
6. In this study, female patients of child-bearing age were advised to use at least two birth control methods.  
How might this affect the study population? **(2 marks)**
  
7. Briefly describe 3 limitations of the study design. **(3 marks)**

- 8.** A diagram showing the flow of study participants (patient disposition) was not presented in the paper. There were 73 patients included in the study.
- a) List 8 other pieces of information you would wish to have to understand the flow of participants through the study. **(4 marks)**
- 9.** a) Describe in detail how sacroiliitis was determined. **(2 marks)**
- b) Comment on the limitations of the radiological investigation in this study **(3 marks)**
- 10.** a) What were the results of the study? **(4 marks)**
- b) Comment on the statistics. **(3 marks)**
- 11.** Briefly describe 6 potential sources of “bias” which may influence the conduct or outcome of the study. **(3 marks)**
- Please do not repeat answers already given in question 9.
- 12.** You are a safety physician for a retinoid compound and you have received this paper as a potential new safety signal.
- List 4 other sources of information you would use to evaluate the safety signal. **(2 marks)**
- 13.** The authors state that *“Further prospective controlled studies with wider patient series are now needed to confirm our results.”*
- Instead of prospective controlled studies, your company has asked you to consider a case-control study to further explore whether there is a causal relationship between isotretinoin and sacroiliitis.
- a) Briefly describe key design features of such a case-control study. **(2 marks)**
- b) Briefly describe 2 potential strengths and 2 potential limitations of such a case-control study. **(4 marks)**



**FACULTY OF PHARMACEUTICAL MEDICINE  
of the Royal Colleges of Physicians of the United Kingdom  
DIPLOMA IN PHARMACEUTICAL MEDICINE EXAMINATION**

**PART 2**

**16 OCTOBER 2017**

**CRITICAL APPRAISAL PAPER - INSTRUCTIONS TO CANDIDATES**

- 1. Two hours and 30 minutes** are allowed to read the publication and complete the written examination.
- Please allow sufficient time to complete **all the questions**.
- Ensure you make a thorough review of the entire publication as the questions may address any part of it.
- We strongly advise you to **write your answers as brief notes / bullet points**, not in the form of essays. Make sure you clearly indicate which number question you are answering.
- The number of marks shown for each question should be taken as a guide to the relative extent of the answer required.

For some questions, a full answer will require more points to be given than the number of marks available because some questions are marked in increments <1 mark.

Where a specific number of answers are requested, you can provide more and they will be marked, however you cannot score more than the maximum mark for that question.

- Complete the front cover of the answer book with your last name, forename(s), candidate number and signature.
- Begin each question on a new page and write only on one side of the paper. Do not write outside the margins of the pages.
- On each page used, fill in your candidate number and the page number. Pages should be numbered consecutively from the beginning:

e.g. candidate 12 starting their second page would complete the answer book page as:

Candidate No:	12	Critical Appraisal Paper	Page No:	2
---------------	----	--------------------------	----------	---

- When the Invigilator announces the end of the session, please stop writing **immediately** and stay in your seat until we've collected the question paper, the publication, your answer book and any other notes you have made.

## CRITICAL APPRAISAL 2017

Routine Amoxicillin for Uncomplicated Severe Acute Malnutrition in Children (*Sheila Isanaka, Sc.D., Céline Langendorf, Pharm.D., M.P.H., Fatou Berthé, M.D., Smaila Gnegne, M.S., Nan Li, Ph.D., M.H.S., Nassirou Ousmane, M.D., Souley Harouna, M.D., Hamidine Hassane, M.S., Myrto Schaefer, M.D., Eric Adehossi, M.D., and Rebecca F. Grais, Ph.D.*)

1. Briefly state the objectives of the study. **(1 ½ marks)**
  
2. List 8 design characteristics of this study. **(4 marks)**
  
3. In 4 bullet points, describe the rationale for conducting this study. **(4 marks)**
  
4. Regarding the use of amoxicillin in this study:
  - a) What is the rationale? **(2 marks)**
  - b) Comment on the potential concerns of using antibiotics such as amoxicillin in this setting. **(3 marks)**
  
5. The paper states that written informed consent was obtained from the parent/guardian of each child.
  - a) What was likely to be the main challenge in obtaining consent in this study? **(1 mark)**
  - b) Give one other potential challenge in obtaining consent in this population. **(1 mark)**
  
6. With respect to the patient population:
  - a) Give 1 reason why the different age groups might respond differently. **(1 mark)**
  - b) Comment on whether the authors took this into account in the analysis of the results. **(2 marks)**
  - c) Give 1 plausible potential reason for exclusion of each of the following groups of children:
    - (1 mark)**
    - i. Those with insufficient appetite. **(1 mark)**
    - ii. Those with oedema.
  
7. Comment on the patient disposition shown in Figure 1. **(4 marks)**



8. a) What was the primary outcome? **(1 mark)**
- b) How was the primary outcome defined? **(1 mark)**
- c) Give 2 comments on the components of this primary outcome. **(2 marks)**
- d) 8 weeks was chosen as the duration of the study. Give 1 reason why a shorter duration may have been sufficient, and 1 reason why a longer duration may be indicated. **(2 marks)**
9. Table 2 on page 450 gives the risk ratio results for various outcomes.
- a) Draw and label on a single graphical figure the risk ratio results\* (point estimate and 95% confidence intervals) for: **(4 ½ marks)**
- Nutritional recovery.
  - Non-response at 8 weeks.
  - Transfer to inpatient care <2 weeks after admission to nutritional program.
- (\* 1st, 2nd and last rows respectively in table 2)
- b) Making reference to the raw data in table 2 and the figure you have drawn in 9a), briefly explain the risk ratio results for the nutritional recovery outcome data. **(3 marks)**
10. The authors comment that the study showed no benefit of routine antibiotic use with respect to nutritional recovery from uncomplicated severe acute malnutrition in Niger.
- a) Comment on how the patient population may have influenced the study results. **(2 marks)**
- b) Give 3 other potential issues or sources of bias that might have affected the trial results or the interpretation of the trial. **(3 marks)**
11. The authors conclude that the “findings should be confirmed in studies designed to reflect real life” **(6 marks)**  
Compared to a conventional clinical trial, briefly describe 6 logistical considerations when planning / conducting a future study in children with severe acute malnutrition “to reflect real life”.

## Sample MCQ

For each question indicate whether each item is TRUE or FALSE.

- 38** The ABPI Code of Practice requires in printed promotional material that
- A. claims for market share of a product are substantiated
  - B. comparative evidence with other products is provided
  - C. the number of the relevant marketing authorisation is given
  - D. qualitative list of the active ingredients using approved names is provided
  - E. the name and address of the Licence Holder is stated
- 40** The following are recognised effects of treatment with lithium salts.
- A. thyrotoxicosis
  - B. diabetes insipidus
  - C. weight loss
  - D. tremor
  - E. increase in congenital cardiovascular anomalies
- 50** Characteristics of Prescription Event Monitoring for post-marketing Surveillance of new drugs include:
- A. the study of large numbers of patients (eg 10,000)
  - B. the recording of all medically significant events
  - C. the availability of properly matched control data for comparisons
  - D. the ability to begin a study as soon as a drug is marketed
  - E. the possibility of making corrections for events caused by other drugs being taken other than the study drug