# Softdev-Questions

**This is a set of (fairly) comprehensive notes on Adrian Janson's presentation to the 2016 class of VCE Software Development 3/4 (Melbourne High School). The author makes no garuntees about the validity or legitimacy of the infomation. It is provided as-is, in the hopes that it may be of use to future students.**

**Want to view the source? Go to https://github.com/Dalordish/Softdev-Questions**
**(https://github.com/Dalordish/Softdev-Questions)**

**Notes by Richard Huang**

# Questions about Exams (Janson 2016)

Exam 1 Q3:

- Is discarding a process or a data store

Answer (?) : Process

- Is combining a process or a data store?

Answer (?) : Process

The definition of a process is that the input must be different to the output. (Data must change)

Exam 1 Q6:

- Is acceptance testing in the devlopment stage or the evaluation stage>
- Why is acceptance testing in "Evaluating the solution"
- What **is** acceptance testing
- Confused between acceptance testing and evaluating

It happens before evaluation, because it doesn't happen months down the track. Arguments can be made for having aspects of both, but AJ thinks it's development, because the client can say " we're not happy with x and y, and you can go back and change it", whereas if the evaluation goes badly, it's a new project.

Exam 1 Section C:

- Requirements : Why is "sound quality is high" a functional requirement

Answer : Probably can argue for both ways, because it is such an important quality. This is an

example of why you should keep it as simple as possible ( go for the obvious, and don't go for the grey areas.) Be careful when you use key words. Place key words in the context of the situation.

# Janson notes:

- You will **not** have general questions like the "write a pseudocode algorithm", or "draw a diagram". They'll just ask you questions about an existing one.

  **Author's note : we had a pseudocode writing question in the 2016 VCAA Exam**

## General Exam tips:

- 20 or 30 over 45, 1 or 2 50's
- Lots of algorithm questions
- Go back and do algorithm questions
- When VCAA have a study, they must examine every key knowledge point in the lifetime of the study
- Always a DFD or context diagram
- How VCAA works : They audit the study, and if there is a topic that there was never a question asked about, it gets booted from the course - so they have to "fill in the gaps"
- VCAA are not allowed to have falsey or negative questions ( eg. Which of the following is not a valid organisational goal?)

## Algorithms

- Do not need to know code, but must be familliar with pseudo-code.
- There are likely to be several algorithms on the exam, and they are often worth big marks. (Quick sort, selection sort etc.) You may want to go back to the start of soft-dev and jsut do all of the algorithm questions. The questions are also very similar, for example, there is almost always a boundary check. The issues will always be logic flaws, or type flaws.
- Algorithms are not done well (generally)
- Do a desk-check!

## Sorting

You aren't going to be asked to write a sorting algorithm ( eg. "Write a quick sort algorithm")

Typically, they might ask you to do a few passes of a particular sort

They might give you a part of a sort, and say that there is an error in the sort, find the error

# DFD's, Context Diagrams and Use Case Diagrams

## DFD's and Context Diagrams

There is almost always one of these on the exam.

Often the structure is provided for you (makes marking easier)

You will often have to label different things (Data flows, entities, processes, data stores)

## Use case diagrams

Again, strucutre will be provided and you would be asked to fill in the gaps.

# Efficiency and Effectiveness

You must justify your answer for "why it is efficient" and "why is it effective". so as to demonstrate your knowledge of each term. (Try not to use both words in the same sentence without any justification)

# Project Management

Key terms : Milestones, dependanciesk, tasks, sequencing, time allocation, resources

Very likely to have a question that includes a Gantt chart!

Certain terms are not used. ( Slack time, Critical path), however there might be a question asking "What happens if this task is delayed by 3 days"

Question could also include content about recording progress (probably in the context of question C) (something along the lines of "tracking who does what in the project")

# Problem solving methodology:

Make sure you memorise the diagram (Analysis: solution req) etc etc. There will be questions for regurgitation and recall of informmation.

All VCAA glossary definitions are in the book.

# Study design ( 4 AoS) (Key knowledge points):

- Read through the study design and tick it off

- Key knowledge in the beginning of the chapter

# Janson exam tips :

You have 15 minutes reading time, so do section C first, because you can read the case study, as opposed to doing section A, then re-reading the case study. (Try this in a trial exam, and see how you go). You also get the most stressful part out first (which is also wroth the most marks)

The exam has a purpose - VCAA want to know what you understand, so keep that in the back of your mind when you do the questions. They are not trying to trick you with the questions, but they want you to demonstrate your knowledge. One of the tricky things is that it's one-way, so there's no way to clarify and/or have feedback.

Keep it simple. Go for the most simple, obvious answer first. Don't write too much, because you might muddy the waters and they might not quite get what you're talking about.

## Section A (multiple choice) :

**- Look for the MOST correct answer. Keep in mind that there may not be a perfect answer.**

- Make sure you consider ALL the options.
- Be on the lookout for 'distractors' which are answers that are 'close' to the answer but not quite correct.
- The way VCAA strucutre their answers is going from the smallest to the biggest (as a stylistic thing) (in order of length)
- If you're not sure about the answer, eliminate the wrong answers first to increase your chances when you guess.

## Section B (short answer) :

- Understand what the question is asking
- Underline key words
- Read the question **very carefully**
- Refer to the question in your answer (context)

For example, if they have items of hardware, names of people, or names of companies, put those in there. Examiners are instructed that if there is a generic answer not in context, VCAA consider that you are not able to demonstrate that you can apply your knowledge to a particular situation, which means you may get 0, even if it is partially correct.

- Dot points are good. There are no marks for grammar. They are good for both you, because you can list them, and the examiner can check them off. Examiners hate hunting for marks. Get on the good side of the examiner.

- Don't over-answer. If the question says "list 3 things" don't list 4. Examiners have strict guidelines. If the question says "list 3 things", and you list 4, they will only m ark the first 4.
- Let the marks guyide your response
- No need to restate question (Mark should use quicksort because...), but **DO** use context

## Section C ( case study)

- Generally the section will follow the PSM (Analysis, Design, Development, Evaluation) and the strategies.
- Will cover Design briefs, organisational profiles, visual images, tables, diagrams, arranging in order, **algorithms**
- Remove the case study sheet
- Examples and/or diagrams are good ( if you have time)
- Exam is 100 marks, and you have 120minutes, so try to spend ~1minute per mark (so you have time to correct and check)
- Read each question twice before answering it.
- Underline key terms and question stems
- If you aren't sure about the meaning of a word, try to work it out based on the context.
- Have a go at every question - **DO NOT** leave any questions blank!
- Don't leave early. Even if you don't do anything for 5mins, then have another read-through.
- You must refer to the case studies ( or the details in the question)
- If a question asks for 2 points, do not give 3
- Make sure your writing is neat and legible.
- Do note restate the question in your answer (wastes time).
- Try not to use pencil, as it is less readable. If you have an error, place a neat line through the text you wrote with pen.

## General advice (question stems):

- Indicate/Identify A brief answer in response to a specific scenario.
- Justify Explain why a choice has been made, with good reasoning/facts.
- Complete Fill in the blanks.
- List/Name Give the names of. You don't need to explain or justify your answer.

- Provide an example A brief example
- Reccomend Similar to justify
- Sketch/Draw Sketch or draw something (most likely not there)
- Describe Give a detailed account.
- Analyse Critically discuss a solution or issue
- Explain Provide reasons for something.
- Select/Choose Pick in preference to another
- State A brief answer declared definitely.
- Discuss Probably the hardest one, useually involves explaining the pros and cons of a solution. VCAA will usually try to scaffold a question (James wants to use a selection sort, Jack wants to use a quicksort, so you should have the pros and cons of each) ( you can use the "same" point, x takes longer, y is shorter)
- Evaluate Likely to be uncommon (particularly because Evaluation is a stage in the PSM), but similar to analyse.
- You can use something like an asterisk to continue a point
- VCAA will often bold certain key terms.

## New content in the course

Organisational Goals and Objectives ( in order of hierachy) :

- Mission statements are what the company wants to be
- Goals are broad
- Objectives are quantifiable

Agile vs Linear Development:

Information problem: "A problem faced by an organistaion that requires the use or design of an information system to solve"

Information systems and what they do :

- People processes, information, equipment

Gantt charts ( see above)

Application architecture (Definiation based:

- Client-server, P2P, Rich client , internet applications

Records, associative arrays, hash tables

- Hash tables and associative arrays are basically the same thing
- Don't know what form of a question it would take (Check Janson exam 3)

XML file format :

- May be some on the exam
- CSV is no longer in the study design.
- Questions would be say, asking for you to read XML data, or an error in the XML (non closing tags)
- Probably a good idea to learn the XML vocabulary ( Parents, branches, elements etc.) ( Doubt that there would be a question about it though)

## Examiners advice

"Many students did not pay careful attention to the setm of the question"

"It is important students indicate their understanding of key terms (eg. Efficiency and effectiveness)

"Marked differences in student performacnes were noted in questions that required multiple responses"

"It was pleasing that when asked for two reasons or three features etc, students gave the correct responses"

"Students continued to repeat the same point when asked to discuss or givem ultiple reasons relating to a scenario"

"Stduents who scored full marks were able to demonstrate key knowledge and **application**"

## Exam Details :

Thursday 10th November, 11:45AM-2:00PM, 15min reading, 2h writing, Paper consists of three sections :

- Section A : 20 multiple-choice questions (20 marks)
- Section B : 4 short answer questions (20 marks)
- Section C : Case-study with extended response - 13 questions (60marks)
- Total: 100 marks

Allowed: Pens, pencils, highlighters, rulers, erasers, sharpeners, scientific calclators etc.