

Software: 14.2 Questions and Mark Schemes

1. A toy manufacturing company wishes to purchase a new system for maintaining stock data. When a consultant is appointed, the first step she takes is to set up a meeting with the relevant departmental managers of the company.

(a) Describe **one** reason for this meeting, in addition to establishing an agreed set of evaluation criteria.

(b) One of the evaluation criteria decided upon at this meeting is cost/benefit, as the company needs to be able to show that the new system will have been a good investment within twelve months of its implementation.

Describe **three** other possible criteria, saying why each is appropriate in this situation.

(a) The following are examples only.

- To establish client needs (1)
- Both parties have a clear understanding of the problem at hand (1)
- To find out what is essential and desirable (1)
- So suitable software can be sought out (1)
- To ensure the departments have ownership/involvement (1)

2 x 1 mark

(b) Give one mark for a stating a criterion, one mark for an explanation of what this criterion is, and one mark for an expansion of this in the context of a company. Refer to page 29 of the specification for a list of acceptable criteria. The following are examples only.

<u>Criterion</u>	<u>Reason</u>
Robustness	The company will be dealing with vast quantities of data (1) and the software will have to cope without crashing (1).
Performance	The company will require results to be produced in a reasonable time (1) so the software package must be more efficient than current methods(1).
Support	The company will require access to support initially as training (1), But also in future if things go wrong (1).
Portability	The company may use other software to create reports (1),and so this package must have an export function (1).
Transferability	Any existing data the company holds with regard to inventory needs to be available (1) without the need for reentering data (1).

3 x (3,2,1,0) marks (2 marks) (9 marks)

2. A car insurance company needs to replace the computer application that it uses to provide quotations. The company decides to look at several software packages that may provide this replacement.

(a) (i) Why should evaluation criteria be established before comparing the packages?

(ii) "Functionality" and "User Friendliness" have already been established as important criteria for success. Name two other criteria that could also be used in this situation. For each criterion, describe why it is relevant to this company.

(b) The company decides that there is no readily available application that exactly fulfils its needs. It therefore decides to employ an external development team to provide a bespoke software solution.

(i) State one advantage of this approach.

(ii) State one limitation of this approach.

(c) What is the purpose of using a team to develop a software solution rather than just one individual?(1 mark 6 marks 1 mark 1 mark 2 marks)

(a)

(i) So that developer and end-user understand the requirements of the system/ agree on how to establish if the proposed system will be successful (1)

(ii) Give one mark for a relevant criterion and two for a reasonable description up to a maximum of 2 criteria and 2 descriptions. Description marks are dependant upon criterion marks. Description must reflect the context in order to gain the third mark.

Criterion

Reason

Robustness

The company will be dealing with vast quantities of data (1) and the software will have to deal without crashing (1).

Performance

The company will require results to be produced in a reasonable time (1) so the software package must be more efficient than current methods (1).

Support

The company will require access to support initially as training (1), but also in future if things go wrong (1).

Portability

The company may use other software to print final quotations (1), and so this package must have an export function (1).

Transferability

Any existing data the company holds with regard to insurance groups, customer details etc. need to be available (1) without the need for re-entering data (1).

Max 2 x (3,2,1,0) marks

(b)

(i) No need to employ permanent team for this one-off project (1)

Solution should exactly fit with end-user requirements (1)

Documentation provided should be exact and of high quality (1)

Etc. Max 1 mark 1 mark 6 marks 1 mark

(ii) Expensive option compared with others (1)

Time from inception to solution can be long (1)

Availability of support is restricted (1)

Possibility of sharing sensitive data with outside workers (1)

Etc. Max 1 mark

c) Able to split the task and give each part to those with the skills to tackle those parts (1);

can use a modular approach to reduce the time to completion of the project (1);

changes to any part of the system do not affect other parts (1);

Allow a good expansion of one point for a second mark

Max 2 marks 1 mark 2 marks

8. Give four reasons for producing an evaluation report when considering alternative software solutions to a particular problem. 4 marks

To present the overall findings of the evaluation to the person(s) requiring the evaluation to be carried out (1)

To show the end user which packages were being considered as possible solutions (1)

To detail the required functionality that was being checked for in this evaluation (1)

To describe how the evaluation has been carried out/ methodology (1)

To show the results of the evaluation for each package being considered (1)

To give the end user a recommendation based on the evaluation carried out (1)

To give the end user justification for the recommendation made (1)

4 x 1

3. ESSAY

An employment agency currently holds information about job seekers and job vacancies on an information system that is several years old. As a consultant, you have been asked to help this company look at alternative software solutions. Discuss what you would do in order to produce a report for this company. Your discussion should include:

- how you will establish your client's needs;*
- the criteria you will use to evaluate possible solutions;*
- how you will match software capabilities to your client's needs;*
- the content of the evaluation report you will write for your client.*

The quality of written communication will be assessed in your answer.

The solution for this question is intended to provide a framework of key concepts rather than a definitive solution. The aim is to establish an agreed standard that can be applied consistently, by all examiners, taking account of the many alternative answers to this type of question.

Allocation of marks:

How client need is established (code as H) – 4 marks

The criteria used to evaluate possible solutions (code as C) – 6 marks

Matching software to client need (code as M) – 3 marks

Content of the report (code as R) – 4 marks

Quality of written communication (code as Q) – 4 marks

Maximum mark for content is 16/20.

How client need is established (H marks)

- Initial meeting with end-user (1) so that requirements are clear and understood by both parties (1)
- Observation of the current system (1) so that tasks that are carried out can be evaluated/ it can be seen where the current system works/doesn't work (1)
- Look at documentation currently in use (1) to see exactly the type of data that is currently used (1)
- Interviews with users at different points in the system (1) to get their perspective on the current system (1)

max 4 marks

Criteria used to evaluate (C marks)

In the following, 1 mark given for the criterion AND the description, and 1 mark for relevance to the scenario. A simple list of evaluation criteria will get 1 mark for 2 or 3 criteria, and 2 marks for 4 or more criteria. A list of criteria with descriptions, but no idea of relevance will gain a maximum of 3 marks for 3 criteria.

- Functionality:** what does the system do/ does the system meet the end-user requirements (1) for example if a list of 'chef' vacancies cannot be created, the software doesn't do everything the company may need (1)

- Robustness:** how reliable is the system/will the system cope with the demands placed upon it (1); the company will deal with thousands of clients and thousands of vacancies – can the system deal with this volume of data without crashing? (1)

□ Performance: how well does the system carry out tasks required of it (1); clients will want to know about vacancies quickly – if the system takes a long time to produce a list meeting client needs, the vacancies may already be filled (1)

□ Resource requirements/ Compatibility: what hardware/ software/personnel does the system require (1); can this system run on the hardware/ operating system currently in use by the company/ does the company have the personnel required to use/ manage the system (1)

□ Transferability: can legacy data be incorporated into the new system (1); current data must be accessible, as well as data captured after the new system is in place (1)

□ Portability: can data be shared with other applications (1); the company may want to produce statistics using another application about how many people were placed in certain job types every month (1)

□ User support: how is the system supported/ training provided/ help available (1); the company will want to know that if things go wrong they can get advice in good time (1)

□ Usability/ human-machine interface: is method of accessing the system suitable for the end-user (1); if the system is not easy to use, the users are not likely to continue using it/ the company is likely to be less productive (1)

□ Cost benefit: how soon can the company recoup costs (1) if the system costs too much the company would suffer (1)

max 6 marks

Match software capabilities to client need (M marks)

□ Establish which software is available to complete the task(s) (1)

□ Apply the criteria decided upon to these software choices (1)

□ Apply weighting to the criteria in order to compare different solutions (1)

max 3 marks

Content of the report (R marks)

□ Description of the methodology: the approach(es) used in the creation of the report (1); so that the client understands what has been done (1)

□ Evaluation: the actual findings/ applying the criteria decided upon to the solutions under consideration/ discussion of advantages and disadvantages of different possible solutions (1)

□ Recommendation: the solution that best fits the clients needs (1)

□ Justification: how this decision was reached/ how the evaluation was interpreted to inform this decision (1) max 4 marks (20 marks)