Examiner's report 2009

2910314 Software engineering management Zone B

Introduction

Despite students being required to complete two pieces of coursework prior to the examination with a given scenario which outlines a typical business situation, when faced with an exam paper of a similar nature, they seem to ignore all past coursework and do not do themselves justice.

Past exam papers are available and students should take the opportunity to consider them before sitting their examination.

Taking an examination is similar to a design project. There are a number of key elements, the correct number of questions to answer and a strict time constraint – two hours and 15 minutes. For example, candidates could use 15 minutes to read and consider the initial statement of requirements and make any notes of the best questions to answer. Then it should be possible to allocate equal amounts of time for each question with a short time to review your answers before the examination finishes. The Examiner can give no marks if no answers are submitted.

If you do rough work then it should be clearly marked as such. Any links between questions and rough work should be clearly stated.

Specific comments on questions

Question 1 IT/IS; implementation characteristics; costs vs risks: a popular question with reasonable answers.

Usually students supplied a list of major components such as databases, WWW connection, application S/W with brief comments about each component.

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   The difference between IT and IS was well covered with an emphasis on the value of information created for the organisation, the ability to extract data for managerial decision making and improved customer relationships.

ii. The majority of the candidates answered this part of the question by covering the reliability, availability and usage, supported by some additional text.

iii. A few students covered this question from the point of view of development and operational costs with typical risk examples of loss of staff, project overrun, environmental disasters, etc. The remainder did not mention the major concepts of direct and indirect project costs, etc., but listed the above typical risk examples.

Question 2 Cost estimation models; data integration: an unpopular question

i. This part of the question was answered by all the students who attempted this question. Various suggestions appeared such as price-to-win, corporate memory and the three estimates approach with outline detail. All covered COCOMO at various levels of detail focusing on KLOC calculations.

ii. A good answer might use a DFD to show the major function data flows alongside supporting text and outline diagrams.

Question 3 Quality Tools: not a popular question

i. Candidates suggested a very limited number of quality tools/techniques. Possible examples might be Gantt charts, histograms, box plots and control charts.

ii. There were a number of alternative suggestions for Fagan inspection procedures but most followed the usual procedure of: overview, preparation, inspection, reporting and recommendations. No candidate mentioned the benefits of early-stage defect detection.

iii. Candidates provided reasonable answers that showed an understanding of the differences between SQA, TQM and CMM. A good answer would explain that there is an overlap between SQA and TQM, with more management involvement in TQM. Candidates failed to make clear that CMM is involved with the culture of an organisation. Neither did they explain that its key aim is a continuous process of improvement in quality throughout an organisation.

iv. Very limited answers were provided to this part of the question. The possible software metrics that might be used are quantitative, such as lines of code, and qualitative, such as ease of use.

Question 4 Stake holders and operating risks: a popular question.

i. Very few students really understood the term stakeholder. Typically, a stakeholder is a person or an organisation who has some form of financial/philosophical interest/stake in a project and can affect or is affected by the development and implementation of the project.

ii. Either DFDs or ERD appeared for this part of the question often supported by some further argument. The number of

stakeholders mentioned were often few and did not encompass the new environment outlined in the question. Apart from the existing stakeholders such as SailAway and the project development team there are now the local tour operators, lecturers/guides, transport suppliers, restaurants, etc. who all have to be consulted and paid.

iii. Very few students mentioned potential problems with CABINS which could possibly fail by overwriting existing data or corrupting the data. This could seriously damage the business and would be catastrophic. Other risks mentioned by candidates were typically hardware/software failure, problems with the interface, change in specification during the project and loss of key personnel.

Question 5 Subsystem functions; effort calculation; project monitoring: a popular question.

i. Generally this part of the question was well answered by candidates. Ideally the way to provide clear answers would be to use 'function' and 'data' headings, with the various elements listed below the headings. This means the Examiner will not miss any elements which might be buried in blocks of text. Often the names of the cruise ships were not included in the data.

ii. The Total Effort estimates were obtained by guesstimate, outline COCOMO or the averaging method and were explained in outline detail. There was no indication that any of the estimates were based on the ratio scale: requirements: implementation: testing of 40:20:40 for the whole project.

iii. All candidates attempting this question used milestones as a key to establishing the state of a project. Other ways to rectify any slippage problems would be to take on additional staff, discuss with the customer the project duration, increase the cost or abandon the project.