

THE BRITISH COMPUTER SOCIETY
THE BCS PROFESSIONAL EXAMINATION
Diploma

PROJECT MANAGEMENT

29th April 2003, 2.30 p.m.-4.30 p.m.

Answer FOUR questions out of SIX. All questions carry equal marks.

Time: TWO hours.

*The marks given in brackets are **indicative** of the weight given to each part of the question.*

1. Two organizations have merged to form ABCplus, which is a large financial services provider. The management of ABCplus have decided to replace the in-house purpose-built payroll applications in the pre-merger organizations by a single off-the-shelf (OTS) package. ABCplus has selected and acquired a suitable package.
- a) Draw a work breakdown structure (WBS) for the activities that would be needed in order to make the package operational at ABCplus. **(15 marks)**
- b) Describe the various methods of 'going live', and the extent to which each of the methods would be suitable for the ABCplus payroll implementation. **(10 marks)**
2. A software development project will have the following activities. The estimated elapsed time for each of the activities is given.
- i) detailed requirements gathering and specification (4 weeks).
 - ii) database design (1 week) - this will be based on the data analysis carried out in activity i).
 - iii) build data input software (6 weeks).
 - iv) build enquiry software (3 weeks).
 - v) build reports software (4 weeks).
- Activities iii), iv), and v) can be carried out at the same time.
- vi) integration testing (1 week) - this is carried out by the developers to ensure that the three software components operate together correctly.
 - vii) writing user manuals (2 weeks) - this activity is started as soon as the building of the three components of software has been completed, but does not have to wait for integration testing.
 - viii) system testing (2 weeks) - this is done by the end-users, who follow the instructions in the user manuals to try out the integrated system.

Using the above scenario:

- a) Draw up an activity network **(7 marks)**
- b) Calculate the earliest start, latest finish (expressed in week numbers) and float, for each of the activities in the scenario, explaining each step in the calculation. Show how the floats for activities can be used to indicate the critical path for the project. **(12 marks)**
- c) Discuss the limitations of using activity networks as a planning tool. **(6 marks)**

Turn over]

3. A project manager is put in charge of a project which will involve the design, building, testing and installation of a billing application. A detailed requirements specification and an outline plan of activities together with resource requirements have been produced.
- a) Explain the process by which the project manager would assign resources (mainly staff) to the activities of the project. **(12 marks)**
 - b) Identify the modifications which may be required to the original plan as a result of the resource allocation process. **(4 marks)**
 - c) Identify other factors, not already mentioned above, which a project manager might need to take into account when allocating staff to project activities and roles. **(9 marks)**
4. a) Explain how COCOMO and Function Point Analysis (FPA) can be used to produce estimates of development effort, comparing and contrasting the two approaches. **(16 marks)**
- b) A new company has been created and has recently set up its own Information & Communications Technology (ICT) department. Staff in the ICT department are required to provide estimates of the development effort required for a series of new projects. As this is a new department there are no past projects which staff could use to guide their estimation.
- Explain and justify one or more methods they might use to estimate development effort. **(9 marks)**
5. A commercial company has a customer services department, the members of which will be users of a new software application which is to be developed. The company's Information & Communications Technology (ICT) department is small and mainly carries out the maintenance of existing applications. The ICT department does not have the staff or the experience to develop new applications. It therefore employs an external ICT consultancy to design and build the application. The consultancy in turn employs contractors to do some software coding tasks.
- a) Identify up to FIVE main stakeholders in this scenario and describe their probable concerns and motivation in relation to this project. **(10 marks)**
 - b) Describe the organizational structure needed to control and manage this project. **(6 marks)**
 - c) Identify THREE key reports that would need to be produced to monitor and control the project. State who would produce them, for whom they would be produced and the nature of their content. **(9 marks)**
6. a) 'A project must be managed so that the underlying business case is preserved'. Explain the meaning of this statement. **(6 marks)**
- b) Describe the steps a project manager should take, and the recommendations which might be made, if a project has fallen behind schedule. **(7 marks)**
- c) Explain how you would ensure the completed products of a project were of sufficient quality. **(12 marks)**