

BCS Certificate in Benefits Management and Business Acceptance

NOTE:

These are sample questions, with marking guidelines, for each of the BCS Diploma certificate modules. Each sample paper has been written to help candidates prepare for the module examination by providing an example of the general approach adopted by these questions. Therefore, the total marks assigned to the sample questions will vary depending upon the certificate module.

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BENEFITS MANAGEMENT AND BUSINESS ACCEPTANCE

Benefits categorisation question

Scenario 1

The Northshire County Library Service runs 32 branch libraries over a wide area of Northern England. The Service is committed to providing a high-class service to their borrowers at the same time ensuring value for money. In addition, the management team responsible for the Library Service are concerned about recent budget cuts. As a result, they have defined three Critical Success Factors:

- low costs of operation
- excellent quality service provided to borrowers
- high usage level of the libraries by their borrowers.

In order to help achieve these CSFs, the management team has been considering the possibility of providing ebooks in addition to the hard-copy versions of books. In the light of recent technical and commercial developments, they have decided to investigate the situation further and have asked for a business case to be presented justifying such a move. They have scoped the project and have decided how many ebooks they will procure. However, because of the novelty of the proposal, they are unable to predict with any accuracy the likely demand for the ebooks.

The analysts have identified the following benefits:

1. Increased borrower satisfaction
 - management are confident that the proposed change will significantly influence the borrowers' satisfaction
 - this will be affected by other factors such as the range of book titles available throughout the Library Service.
2. Reduced physical storage required as ebooks replace hard-copy equivalents
 - This will help overcome the current overcrowding in many branches but it is not possible to define the amount of monetary savings.
3. Reduced cost of procuring/replacing ebooks compared with their hard-copy equivalents
4. Faster availability of loans
 - "Returned" ebooks become available for reuse immediately
 - Centrally-held ebooks do not have to be transported from one branch to another when requested by a borrower at that other branch

Question

Allocate each of the benefits shown above to one of the following categories:

- A. A financial benefit.
- B. A measurable improvement in performance that can be predicted with confidence in advance (Quantifiable).
- C. A measurable improvement in performance that **CANNOT** be predicted with confidence in advance but can be measured after the implementation (Measurable).
- D. An improvement that **CANNOT** be measured objectively but can be assessed by expert judgment (Observable).

In each case justify your choice of category

(Total 8 marks)

Specimen answers and marking scheme

Benefit	Category	Justification
<i>Increased borrower satisfaction</i>	<i>Observable</i>	<i>Borrower surveys carried out by the Library indicate overall borrower satisfaction levels. This can be done pre and post implementation of the ebook service. Management will have to assess how much any increase in borrower satisfaction has been influenced by the proposed ebook facility.</i>
<i>Reduced physical storage</i>	<i>Quantifiable</i>	<i>The number of ebooks that have replaced physical books, and hence the space saving compared with holding an equivalent set of physical books, can be predicted.</i>
<i>Reduced cost of procuring/replacing ebooks</i>	<i>Financial</i>	<i>The difference between the costs of procuring ebooks and physical copies can be predicted with confidence.</i>
<i>Faster availability of loans</i>	<i>Measurable</i>	<i>The Library will be able to measure the elapsed time between request and issue of an ebook and compare this with the time for the issue of physical copies, once the new service has been implemented. Without knowing the likely level of demand for this service, it is impossible to predict this in advance.</i>

1 mark for correctly identifying each category of benefit.

Up to 4 marks

1 mark for each justification.

Up to 4 marks

(Total 8 marks)

Key Performance Indicator question

Scenario 2

See the Northshire County Library Service scenario for the benefits categorisation question.

Question

During the initial investigation to establish the business case for the introduction of the ebook service, the Library Service management suggested the following Key Performance Indicators (KPIs). They felt that the success of the proposed new service would be demonstrated if, at the end of the **first** year of operation:

- there were 4000 ebook copies available for loan in Northshire Libraries.
- the average purchase cost of an ebook were less than £5.
- the average cost of transferring a physical book between libraries has been reduced from £4 to £2.

- a) The analysts are concerned that none of these KPIs are valid. Explain why each KPI is unacceptable.

(6 marks)

- b) The management team is keen that the project has KPIs which **COULD** be used to measure project success. Define an alternative KPI to one of the suggested KPIs above.

(2 marks)

(Total 8 marks)

Specimen answers and marking scheme

a) Award up to 2 marks for each reason given concerning the lack of validity of a KPI.
Maximum 6 marks.

- KPI 1: there were 4000 ebook copies available for loan in Northshire Libraries.

Reason: This is not valid because the success of the service will depend upon the number of ebooks **loaned** during the first year rather than the number **available**. It is possible that few of them may be loaned out even though there are 4000 ebooks available.

- KPI 2: the average purchase cost of an ebook were less than £5.

Reason: This is not valid because the claimed benefit of the ebook service is that the purchase cost of an ebook is less than the purchase cost of an equivalent physical book. It is this cost **differential** that should be targeted rather than the absolute cost of each ebook.

- KPI 3: the average cost of transferring a physical book between libraries has been reduced from £4 to £2.

Reason: This is not valid because the ebook service would have no impact on the **cost** of transferring physical books between libraries. Instead it will reduce the **number** of physical transfers – it is the number of transfers that should be targeted in the KPI.

b) Award up to 2 marks for an appropriate new KPI.

- Possible new version of KPI 1: By the end of the first year of operation, the number of ebook loans is at least x% of the total book loans for Northshire Libraries.
- Possible new version of KPI 2: By the end of the first year of operation, the cost of a book has been reduced by an average of £x.
- Possible new version of KPI 3: By the end of the first year of operation, the number of physical book transfers between libraries will have reduced by x%.

*Up to 2 marks for each reason why a KPI is not valid.
Up to 2 marks for one new KPI.*

*Up to 6 marks
Up to 2 marks*

(Total 8 marks)

Discounted cash flow question

Scenario 3

Solihull Devils is a football club based in Warwickshire. They have two teams, each consisting of 17 signed squad members, competing in the Under 15 and Under 11 Warwickshire Football League. They currently train and play home matches on a pitch at a local college. They train every Saturday for 40 weeks of the year at a cost of £30 per week and play 40 home matches (20 matches per team) at a cost of £20 per match.

The cost of the pitch is covered by subscription fees of £50.00 a year from each team member and spectator fees for home matches of £1.50 per adult and £0.50 per child.

Recently, an area of ground was closed resulting in the removal of parking provision at the college. Local residents have complained to the club chairman about cars being parked in nearby streets and regularly complain to car drivers. The lack of parking has led to a decrease in spectator numbers which now average 30 adults and 6 children for each match.

Any profit that the clubs make is used to equip the club plus organise social events that promote the club. Each year there is a Christmas celebration and end of season presentation evening as well as a fun event for the squad members. Last year they went go-karting but it is unlikely that all three events can be funded this year unless there is an increase in the club's income.

A local farmer has offered the football club the use of his field. The charges are £3000 per year plus an initial £2000 deposit. The field has access from the road and could provide car parking for 50 cars.

The club has also received an offer from Know Your Greens Landscaping to level an area of the field for the pitch and gravel the car parking area free of charge on the condition that they can erect a sign advertising their company. They have also asked for assurances from the club chairman that spectator numbers will increase.

Prior to the parking problem, home games were consistently well supported with an average of 60 adults and 30 children watching each match. It is anticipated that these will be the spectator numbers should the club move to the farmer's field.

Question

Use the discounted cash flow technique to calculate the net present value over the next **three** years for each of the **two** options available to the Solihull Devils club:

1. staying at the existing ground.
2. using the field provided by the farmer.

Assume a discount rate of 10% and the following discount factors:

Year 0 – 1; Year 1 - .909; Year 2 - .826

(Total 12 marks)

Specimen answer and marking scheme

Option 1 - using existing ground:

Current Costs:

Training costs – 40 weeks x £30 = £1,200
 Match costs – 40 matches x £20 = £800
 Total annual costs = £2,000

Current Income:

Subscription Fees – 34 players x £50 = £1,700
 Spectator income:
 30 adults x 40 matches x £1.50 = £1,800
 6 children x 40 matches x £0.50 = £120
 Total annual income = £3,620

Discounted cash flow calculation – option 1

	(income – costs)	Net annual cash flow	Discount Factors @ 10%	DCF for year
Year 0	(3620-2000)	1620	1	1620
Year 1	(3620-2000)	1620	0.909	1472.58
Year 2	(3620-2000)	1620	0.826	1338.12
NPV				4430.7

*Up to 2 marks for calculation of net annual cash flow.
 Up to 1 mark for each annual DCF calculation.
 1 mark for the NPV.*

*Up to 2 marks
 Up to 3 marks
 1 mark*

(Total for option 1 is 6 marks)

Option 2 – using farmer’s field:

Future Costs:

Year 0 = £2000 deposit + £3000 rental
 Years 1 and 2 = £3000 rental per year

Future Income:

Subscription Fees – 34 players x £50 = £1700
 Spectator income:
 60 adults x 40 matches x £1.50 = £3600
 30 children x 40 matches x £0.50 = £600
 Total annual income = £5900

Discounted cash flow calculation – option 2

	(income – costs)	Net annual cash flow	Discount Factors @ 10%	DCF for year
Year 0	(5900-5000)	900	1	900
Year 1	(5900-3000)	2900	0.909	2636.1
Year 2	(5900-3000)	2900	0.826	2395.4
NPV				5931.5

*Up to 2 marks for calculation of net annual cash flow.
Up to 1 mark for each annual DCF calculation.
1 mark for the NPV.*

*Up to 2 marks
Up to 3 marks
1 mark*

(Total for option 2 is 6 marks)

State Machine question

A section of the syllabus covers **test design techniques**. The following question is designed to illustrate the kind of practical question that a candidate might be asked.

Scenario 4

Employees enter their expense claim into the system. Once they confirm their claim details, then the claim is saved and given the status submitted. All submitted claims are considered by the employee's line manager. Some are turned down and are deemed to be rejected. For others, the manager decides to accept the claim and these are defined as being at acceptedlevel1.

If the claim is for \$100 or more, then a senior manager has to also authorise the claim. Senior managers might reject the claim (thus the claim is rejected) or accept it (when it is known as acceptedlevel2). At midnight every day, a batch process runs which identifies all acceptedlevel1 claims less than \$100 and all acceptedlevel2 claims and marks them all for payment.

At the month end, a batch routine is run to raise a cheque for all marked for payment expenses and the claim is deemed to have been paid.

Submitted claims can also be withdrawn by employees, prior to the line manager making a decision on the claim.

There is a daily batch run that archives all withdrawn claims over three years old, all rejected claims over seven years old and all paid claims over seven years old.

Question

a) Develop a state machine diagram (state transition diagram) for expense claim.

(16 marks)

b) A tester tests the states *start*, *submitted*, *accepted level 1*, *marked for payment* and *paid* and the transitions between these five states.

- What percentage state coverage has he achieved?

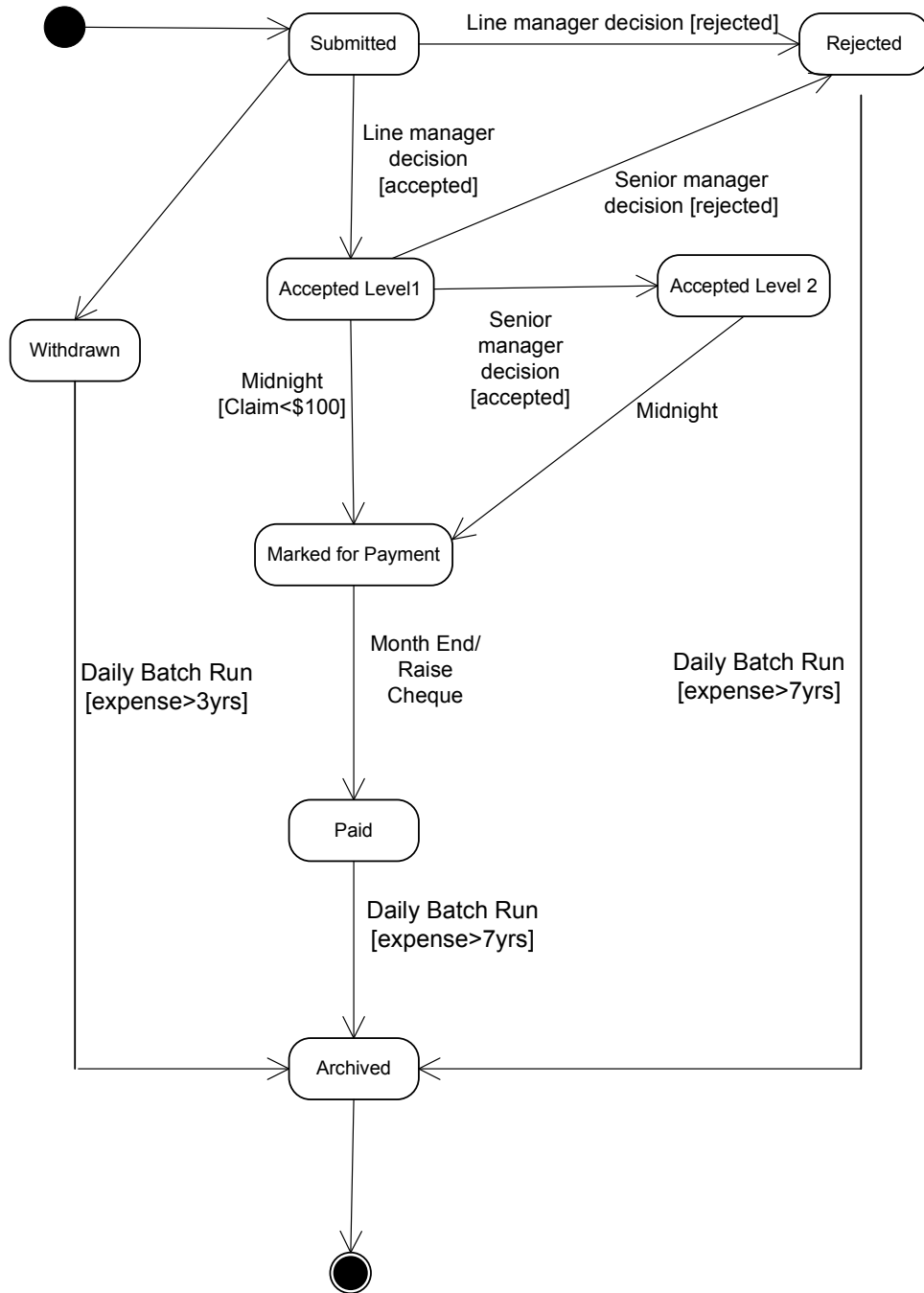
(2 marks)

- What percentage valid transition coverage has he achieved?

(2 marks)

(Total 20 marks)

Specimen answer and marking scheme



½ mark for each state.

Up to 5 marks

½ mark for each valid transition.

Up to 6 marks

½ mark for each transition text (event[guard]/action).

Up to 5 marks

(Total for part (a) is 16 marks)

b) State coverage = 5/10 (50%) counting the final state as a valid state.

Up to 2 marks for correct answer.

Up to 2 marks

(Total for part (b) is 2 marks)

c) Transition coverage 4/13 (31%) counting the transition to the final state.

Up to 2 marks for correct answer.

Up to 2 marks

(Total for part (c) is 2 marks)