BCS Practitioner Award in Data Architecture

Specimen Paper - Answer Sheet

Record your surname / last / family name and initials on the answer sheet.

This specimen paper has only 10 questions, which are a mixture of multiple-choice and multiple-response questions – 1 mark awarded to each question.

Multiple-choice questions allow only one correct answer to be selected for 1 mark.

Multiple response questions require the candidate to select a number of correct responses for 1 mark.

There are no trick questions.

A number of possible answers are given for each question, indicated by either **A B C D or E**. Your answers should be clearly indicated on the answer sheet.

Pass mark is 7/10

Time allowed: 15 minutes.

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Question	Answer	Learning Outcome	Rationale
1	B	2.2	Information gain is the reduction in entropy or surprise by transforming a dataset and is often used in training decision trees. Information gain is calculated by comparing the entropy of the dataset before and after a transformation. The other measures are related to other statistical techniques i.e Text Analysis, k-means.
2	A	4.2	The five levels of CMMI are: Initial, Managed, Defined, Quantitatively managed, Optimising.
3	B	2.1	The Zachman Framework focuses on capturing various viewpoints (e.g. What, How, Where, etc.)
4	A, C, and D	1.1	Data governance can help to improve data quality, reduce data costs, and increase data security, but it does not necessarily lead to faster decision making. In fact, data governance can sometimes slow down decision making by introducing additional layers of bureaucracy. In will also not focus on operational performance issues of the kind that can improve customer retention.
5	A and B	5.1	Increased coordination and communication challenges: Because decision-making authority is distributed, decentralised governance models can require increased coordination and communication between individuals and groups. This can be a challenge, especially in large or complex organisations. Decentralised governance models can require increased costs, such as the cost of training and educating individuals and groups on decision-making processes.
6	A, B, and D	4.2	The five levels of Data Maturity DAMA are: Ad hoc, Repeatable, Defined, Managed, and Optimised.
7	B and D	3.1	This situation requires both an understanding data governance (e.g. data residency) as well as the responsibility to be able to effectively communicate that information to a non-technical stakeholder.

8	A and B	4.3	No-SQL databases tend to be flexible and based on the fields required at the time of use. They also lend themselves to parallel processing and distributed processing. Disadvantages are lack of querying capability and no formalised structure in the form of an ERD/
9	A, B, and D	3.3	The physical level of abstraction is important because it determines how data is stored and accessed. The physical level can affect the performance of the database, the security of the data, and the ability to recover data in the event of a disaster. Typically managed by a DBA who is control of the database
10	A, B, and D	3.2	A low-level data architecture design is a detailed plan for how data will be stored, organised and accessed in a computer system. It is a critical part of the overall data architecture design, as it ensures that data is stored in a way that is efficient, secure, and accessible. cost of implementing a low-level data architecture design can vary depending on a number of factors, such as the size and complexity of the system, the choice of technologies, and the cost of labour. Implementation tends to be left to the developers plans and processes.

End of Paper