The ITIL® 4 Create, Deliver and Support Examination

Sample Paper 1

Answers and Rationales

For exam paper: EN_ITIL4_CDS_2019_SamplePaper1_QuestionBk_v1.0

Q	A	Syllabus Ref	Rationale
1	C	2.3	A. Incorrect. "A high-level value stream… may involve a third-party vendor, an internal software development team, a site reliability engineering team, other IT teams, and a user team. Steps performed by the external vendor are likely to be managed as the vendor's own value stream. Steps performed within the organization are formalized and managed as processes of the involved practices or activities within these processes." From the organization's perspective, third-party teams may be performing steps of the organization's value streams. These steps may be managed as value streams by the third parties, but the organization does not define them. Ref 4.1.2 B. Incorrect. "The overall goals and expectations for a product or service should be described from end-to-end, that is, from demand to value, rather than simply describing the use of each team in a disparate or un-coordinated set of activities. The value stream will therefore represent work across different teams, impacting different stakeholders, using different processes, tools and people, and sometimes even different suppliers." Defining a value stream for every team is impractical and contradicts the idea of an end-to-end workflow. Ref 4.1.2 C. Correct. "The value stream will therefore represent work across different teams, impacting different stakeholders, using different processes, tools and people, and sometimes even different suppliers… Steps performed by the external vendor are likely to be managed as the vendor's own value stream." Ref 4.1.2 D. Incorrect. "The value stream will therefore represent work across different teams, impacting different stakeholders, using different processes, tools and people, and sometimes even different suppliers… Steps performed by the external vendor are likely to be managed as the vendor's own value stream." Ref 4.1.2

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Q	A	Syllabus Ref	Rationale
2	C	1.1.b	A. Incorrect. This is an example of cooperation. Cooperation is working with others to achieve your goals, which may be part of a common goal. With cooperation "There is a risk that individuals or teams who are cooperating instead work in silos. As a result, the individual or team goals are achieved but the organizational goals are missed." Ref 2.3.5 B. Incorrect. Collaboration is more than just technology, i.e., Skype, Slack, or MS Office Teams. "Collaboration is the process through which a person works with others to create or achieve a common goal or product. From a business perspective, collaboration is a practice where individuals work together to achieve a common, shared goal/objective." Ref 2.3.5 C. Correct. From a business perspective, "collaboration is a practice where individuals work together to achieve a common, shared goal/objective". Ref 2.3.5 D. Incorrect. Aligning the goals and KPIs of all the individuals and groups is not sufficient for collaboration, these need to be shared and integrated, for cooperation to become collaboration. A clear understanding of how all of the individuals and groups are successful and their value in contributing to the success is necessary for effective collaboration. Ref 2.3.5
3	D	2.4.c	A. Incorrect. "This is an example of reactive problem identification. One of the key inputs is "Information about ongoing incidents". Ref 3.2.2, tab 3.4 B. Incorrect. This is an example of reactive problem identification. One of the key inputs is "Monitoring data". Ref 3.2.2, tab 3.4 C. Incorrect. This is an example of reactive problem identification. One of the key inputs is "Service configuration data". Ref 3.2.2, tab 3.4 D. Correct. A key input of proactive problem identification is "Error information from vendor and suppliers". Ref 3.2.1, tab 3.1

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Q	A	Syllabus Ref	Rationale
4	C	2.3	A. Incorrect. Organizational structure is concerned with how to build and maintain different structures in organizations. Ref 2.1.1
			B. Incorrect. Collaboration is a "process through which a person works with others to create or achieve a common goal or product... From a business perspective, collaboration is a practice where individuals work together to achieve a shared goal or objective." Ref 2.3.5
			C. Correct. A value stream is a "series of steps an organization undertakes to create and deliver products and services to consumers." In this example, the value stream is focused on reducing value leakage. Ref 4.1.1
			D. Incorrect. The focus of workforce planning is on enabling "organizations, leaders, and managers to focus on creating an effective and actionable people strategy". Ref 2.2.3
5	B	3.2.c	A. Incorrect. Integration and data sharing focuses on bringing together multiple systems within service design. "Service design frequently relies upon integration between multiple systems". Ref 3.1
			B. Correct. Service integration and management (SIAM) refers to a concept for outsourced services where the end-to-end ownership and coordination of various suppliers is managed by a single entity. "Service integration and management refers to an approach whereby organizations manage and integrate multiple suppliers in a value stream. This is a new challenge for outsourced services and suppliers, where previously the end-to-end ownership and coordination of various third-party suppliers were managed by a single entity." Ref 5.2.4
			C. Incorrect. CI/CD is an approach to delivering software in an agile manner. "CI/CD refers to continuous integration and either continuous delivery or continuous deployment." Ref 3.7.1
			D. Incorrect. Organizational structure is concerned with building and managing team structures. "Service relationships require many and varied interactions between individuals and groups both within and between organizations. Individuals and organizational structures: interact with information and technology, participate in value streams and processes, work with partners and suppliers." Ref 2.1.1

Q	A	Syllabus Ref	Rationale
6	B	2.2.f	A. Incorrect. This is an inflexible way of using a change advisory board. Not all possible stakeholders need to discuss every change. This approach will lead to delays and stakeholder disengagement (if many of the changes discussed are not relevant to them). "Change advisory boards (CABs)... often become bottlenecks for the organization's value streams. They introduce delays and limit the throughput of the change enablement practice." Ref Change Enablement Practice Guide 4.1.2

B. Correct. 'Change enablement' is performed by a group of people combining expertise and authority, that can make rapid decisions. This group is known as a "change authority", and often uses automation to accelerate the change. Ref Change Enablement Practice Guide 2.2.1

C. Incorrect. The scope of 'change enablement' does include scheduling and coordinating changes, and communicating change plans and progress to relevant stakeholders. However, "communication is a two-way process", and consulting stakeholders involves communicating with them AND obtaining feedback or suggestions. Publishing and giving access to a calendar is only a part of consulting stakeholders. Ref Change Enablement Practice Guide 2.2.1, CDS 2.3.7.1

D. Incorrect. It might be possible to classify many changes as 'standard', but there will always be some changes which will require discussion and peer review. Ref Change Enablement Practice Guide 2.2.1 |

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Q	A	Syllabus Ref	Rationale
7	D	3.1.b	A. Incorrect. Closing unresolved incidents contradicts the purpose of the incident management practice, which is"To minimize the negative impact of incidents by restoring normal service operation as quickly as possible." Ref Incident Management Practice Guide 2.1 B. Incorrect. Creating multiple backlogs would mask the issue, rather than solve it. Moreover, incidents should be prioritized in a context of a wider backlog: "Incidents should await processing in a single backlog, together with other tasks (planned and unplanned)." Ref Incident Management Practice Guide 2.4.2 C. Incorrect. 'Problem management' is used to understand the causes of incidents. There is no automatic connection between low-priority incidents which have been open for a long time and the need to understand the causes. In addition, this action will not necessarily resolve the incidents any faster. "The purpose of the problem management practice is to reduce the likelihood and impact of incidents by identifying actual and potential causes of incidents, and managing workarounds and known errors." Ref Problem Management Practice Guide 2.1 D Correct. "Work prioritization should be revised periodically or as more work enters the system; this allows for the dynamic reallocation of resources to manage queues." Ref 5.1.3

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Q	A	Syllabus Ref	Rationale
8	A	3.1.a	A. Correct. The 'managing work as tickets' concept addresses the idea that work queues represent interruptions to the flow of work. This is a core principle of Lean manufacturing, "the industrial philosophy which underpins Agile and DevOps, is that work queues represent interruptions to the flow of work. Lean, Agile, and DevOps focus heavily on the reduction of accumulated work-in-progress. Consequently, many IT professionals have a negative opinion of queues." Ref 5.1.1 B. Incorrect. The 'build vs buy' considerations concept describes the process for deciding whether to build something internally or to buy it from a supplier. This does not address the issue of managing interruptions to work. Ref 5.2.1 C. Incorrect. 'Service integration and management' refers to a concept "for outsourced services and suppliers, where previously the end-to-end ownership and coordination of various third-party suppliers were managed by a single entity." Ref 5.2.4 D. Incorrect. The focus of 'workforce planning' is on enabling the organization, leaders and managers to create an effective and actionable people strategy. This would not address the issue of managing interruptions to work. Ref 5.2.4
9	B	2.1	A. Incorrect. It is necessary to "Join all of the activities from all of the required practices to create a new service, to create an end-to-end, holistic vision for the work". The value stream will therefore represent activities across different teams, using different practices, tools and people. Ref 4.2.1 B. Correct. It is necessary to "Join all of the activities from all of the required practices to create a new service, to create an end-to-end, holistic vision for the work". The value stream will therefore represent activities across different teams, using different practices, tools and people. Ref 4.2.1 C. Incorrect. It is necessary to "Join all of the activities from all of the required practices to create a new service, to create an end-to-end, holistic vision for the work". The value stream will therefore represent activities across different teams, using different practices, tools and people. Ref 4.2.1 D. Incorrect. It is necessary to "Join all of the activities from all of the required practices to create a new service, to create an end-to-end, holistic vision for the work". The value stream will therefore represent activities across different teams, using different practices, tools and people. Ref 4.2.1

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Q	A	Syllabus Ref	Rationale
10	D	1.3.d	A. Incorrect. 'Integration and data sharing' focuses on bringing together multiple systems within service design. Ref 3.1 B. Incorrect. "Advanced analytics is the autonomous or semi-autonomous examination of data or content using high level techniques and tools that goes beyond traditional business intelligence, to discover profounder insights, make predictions, or generate recommendations." Ref 3.2 C. Incorrect. A 'team culture' is made up "of values that are shared by a group of people, including their ideas, beliefs, and practices, and their expectations with regard to how the individuals within the group should behave." Ref 2.3.1 D. Correct. These changes are examples of the 'building trust' element of a 'continual improvement' culture. This element is focused on establishing a comfort zone where people feel enabled and supported in trying out new ideas, making suggestions and experimenting. "It is essential for all stakeholders to understand the importance of positive attitude, collaboration, transparent working, and a supportive culture. This should encourage individuals to make suggestions, regardless of how unusual the suggestion may seem, so long as the goal is to improve the service." Ref 2.3.4

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Q	A	Syllabus Ref	Rationale
11	C	2.2.a	A. Incorrect. The 'empathy' stage of the 'design thinking' approach involves starting with "direct observation of people and how they work or interact with products and services, as well as identifying how they might interact differently with other solutions". Ref Service Design Practice Guide 2.2.1 B. Incorrect. 'Prototyping' is a much later step of the 'design thinking' approach. "Prototyping, where these ideas are tested early, iterated, and refined. A prototype helps to gather feedback and improve an idea." Ref Service Design Practice Guide 2.2.1 C. Correct. The 'inspiration and empathy activity involves "direct observation of people and how they work or interact with products and services, as well as identifying how they might interact differently with other solutions". Ref Service Design Practice Guide 2.2.1 D. Incorrect. The 'empathy' stage of the 'design thinking' approach says that you should start with "direct observation of people and how they work or interact with products and services, as well as identifying how they might interact differently with other solutions". Ref Service Design Practice Guide 2.2.1

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Q	A	Syllabus Ref	Rationale
12	C	2.4.b	A. Incorrect. This is an example of value perceived by the service desk function. "Value can be perceived differently by the user and the organization. For example: The IT support agent might calculate value based on the experience of working with the user, with specialist teams, the time taken to interact with various groups, and update relevant records." Ref 4.2.2.6 B. Incorrect. This is an example of value perceived by the IT organization. "Value can be perceived differently by the user and the organization." Ref 4.2.2.6 C. Correct. "Value can be perceived differently by the user and the organization. For example: The user might perceive value leakage as a combination of the time it took to restore the service, associated loss of productivity, frustration from the loss of productivity, any additional issues or complications that may have arisen while waiting for service restoration, experience of working with IT support, and perceived reliability of the service. Efficient removal of the value leakage is, in turn, perceived as valuable." Ref 4.2.2.6 D. Incorrect. This is an example of value perceived by a specialist team. "Value can be perceived differently by the user and the organization. For example: The specialist team might perceive value based on the experience of working with either the IT support agent or the user, the complexity of creating and deploying the fix, and updating relevant records." Ref 4.2.2.6

Q	A	Syllabus Ref	Rationale
13	B	1.1.g	A. Incorrect. "Therefore, organizations should measure employee satisfaction in order to understand how well they are meeting the employees' changing needs and expectations." Ref 2.2.4 B. Correct. "Good human communication is about being efficient, responsive, professional, and effective. Effective human communication is enhanced by establishing positive relationships that avoid unnecessary issues and stress." Ref 2.3.7 C. Incorrect. 'Organizational structure' is concerned with the approaches to building and managing team structures. Ref 2.1.1 D. Incorrect. The automation of interactions does not address the intellectual and emotional needs of others as effectively as positive communications. "Most working projects, teams, initiatives, and organizations require productive and positive interactions between individuals to succeed. Human interaction and communication are where real people still stand apart, ahead of the machines." Ref 2.3.7
14	D	3.1.a	A. Incorrect. 'Service integration and management' refers to a concept for "outsourced services and suppliers, where previously the end-to-end ownership and coordination of various third-party suppliers were managed by a single entity." Ref 5.2.4 B. Incorrect. "Machine learning is an applied form of AI. It is based on the principle of systems responding to data, and, as they are continually exposed to more of it, adapting their actions and outputs accordingly." Ref 3.6 C. Incorrect. "Advanced analytics is the autonomous or semi-autonomous examination of data or content using high-level techniques and tools. These go beyond traditional business intelligence to discover new or deep insights, make predictions, or generate recommendations." Ref 3.2 D. Correct. Queues are commonly very prominent in service organizations. An example is the use of escalation paths through consecutive tiers of support. Tickets "enable prioritization, communicate the current state of any given task to anyone who should know it, and enable high-value behaviours." Ref 5.1.1

Q	A	Syllabus Ref	Rationale
15	B	1.4.c	A. Incorrect. "Robotic process automation (RPA) is a potential way for organizations to streamline business operations, lower staffing costs, and reduce errors. Through the use of software robots (bots), repetitive and mundane tasks can be automated, allowing resources to be deployed on higher value activities elsewhere." Ref 3.4
			B. Correct. "Advanced analytics is the autonomous or semi-autonomous examination of data or content using high level techniques and tools that go beyond traditional business intelligence to discover new or deep insights, make predictions, or generate recommendations." Ref 3.2
			C. Incorrect. "The term continuous integration usually refers to the practice of pushing software changes into a shared deployment 'pipeline' on a frequent and regular basis. Checked-in code is validated, typically through a set of automated tests, then merged automatically into a shared code branch for subsequent deployment into the production environment. 'Continuous delivery' describes the practice of making frequent, typically small deployments of code into the production environment. 'Continuous deployment' is sometimes used to describe the automation of this process." Ref 3.7.1
			D. Incorrect. "The most-used functionalities of these toolsets are the systems of record and systems of engagement. These are used to raise, classify, prioritize, escalate, and resolve issues, requests and changes for items and areas of business and technology infrastructure (including people, IT, departments, services, functional areas)". Ref 3.9.1

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Q	A	Syllabus Ref	Rationale
16	C	1.3.c	A. Incorrect. "Service integration and management refers to an approach whereby organizations manage and integrate multiple suppliers in a value stream." Ref 5.2.4 B. Incorrect. 'Managing work as tickets' focuses on the use of tickets to manage queues. Ref 5.1.1 C. Correct. "Continual improvement relies on reporting data and outputs from various sources to identify whether an objective has been achieved or will or will not be achieved. Organizations similarly use measuring and reporting to drive improvement activities and then track progress against the stated objectives." Ref 2.2.5 D. Incorrect. "The prioritization of work to create, deliver, and support services is necessary for co-creating value while minimizing the costs and risks that arise from unfulfilled demand and idle capacity. In other words, prioritization is a technique within an organization's risk management practice." Ref 5.1.2
17	D	3.2.b	A. Incorrect. Nearshoring is when "Vendors are located in a different country or continent, but there is a minimal difference in time zone; for example, a UK-based organization using a vendor in the European Union." Ref 5.2.2 B. Incorrect. Onshoring is when "Vendors are in the same country." Ref 5.2.2 C. Incorrect. Offshoring is when "Vendors are located in a different country or continent, often several time zones away from the organization; for example, a US-based organization using a vendor in India." Ref 5.2.2 D. Correct. Insourcing is when "the organization's existing resources are leveraged to create, deliver, and support service components." Ref 5.2.2

Q	A	Syllabus Ref	Rationale
18	A	2.4.d	A. Correct. "The purpose of the knowledge management practice is to maintain and improve the effective, efficient, and convenient use of information and knowledge across the organization." The knowledge management practice has broad implications across the SVS by providing a structured approach to defining, building, re-using, and sharing knowledge. Knowledge plays a key role in decision making in the co-creation of value, identification of improvements, measurement of performance, delivery and support of products and services, and the development of organizational strategy. Ref Knowledge Management Practice Guide 2.1

B. Incorrect. The purpose of the release management practice is to make new and changed services and features available for use. Ref Release Management Practice Guide 2.1, 2.3

C. Incorrect. The service validation and testing practice focuses on ensuring that new or changed products and services meet defined requirements and thus will not help in resolving any of the issues identified in the scenario. Ref Service Validation and Testing Practice Guide 2.1, 2.3

D. Incorrect. "The purpose of the service level management practice is to set clear business-based targets for service levels, and to ensure that delivery of services is properly assessed, monitored, and managed against these targets." The scope of the SLM practice includes the communication with customers regarding the services, their experience, and the feedback from stakeholders about the services; negotiating, agreeing, improving, and updating/maintaining SLA; understanding of design and architecture of services and dependencies between services and other configuration item; continual review of actual service levels vs agreed and expected. Initiating service improvements. Ref Service Level Management Practice Guide 2.1, 2.3 |

Q	A	Syllabus Ref	Rationale
19	B	1.4.d	A. Incorrect. This is a key aspect of using big data. "Understanding and assessing the complexity of data is important when deciding whether a solution is appropriate, and in mapping out the best approach." Ref 3.2.2
			B. Correct. "Effective design of collaboration and workflow requires each interaction to align to the needs of the agents involved. Such a design should account for the information needed by each party at each step of the task. The service designer needs to gain a good understanding of the experience of each human actor in performing these handovers." Ref 2.3.6.1
			C. Incorrect. Deciding on a model which can help an organization to manage and control its suppliers is a key aspect of 'service integration and management'. "Service integration and management can be delivered using different models, although the basic concept, that the delivery of outsourced products and services is managed by a single entity, regardless of the number of vendors, remains the same." Ref 5.2.4
			D. Incorrect. This is a key aspect of 'employee satisfaction measurement'. Design, execution and analysis of an employee satisfaction survey with the objective of identifying and initiating improvement for enhancing employee satisfaction are key focus areas of employee satisfaction measurement. "Employee satisfaction surveys should be used to baseline current satisfaction levels and to identify actions that will increase employee commitment and trust, which directly impact the ability of an organization to achieve its goals." Ref 2.2.4

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Q	A	Syllabus Ref	Rationale
20	A	2.3	A. Correct. (1) "This value stream is triggered by a user who finds themselves unable to use a live product or service". (2) "Demand could also originate within the service provider, when monitoring tools proactively alert the organization to failures". Ref 4.2.3.1 B, C, D. Incorrect. (3) This happens after the demand has occurred, and the user has logged the incident (engage). "Service Desk: Provides the skills, tools, and other resources necessary to enable support agents to empathize and manage communications with the customer or user". Ref 4.2.3.3 (4) This occurs as part of the 'improve' activity at the end of the value stream, not as demand at the beginning of the value stream. "Service Desk: Provides the skills, tools, and other resources necessary to enable support agents to empathize and manage communications with various stakeholders". Ref 4.2.3.3, 4.2.3.7
21	D	3.2.c	A. Incorrect. "The purpose of the workforce and talent management practice is to enable organizations, leaders, and managers to focus on creating an effective and actionable people strategy (analysing the current workforce, determining future workforce needs, identifying the gap between the present and the future, and implementing solutions) so that organizations can achieve their missions, goals, and strategic objectives." Ref 2.2.3 B. Incorrect. "Shift-Left is an integrated approach to improving the flow, efficiency and effectiveness of work. It is used to move the delivery of work to the most optimum team or person, based on improving lead times, resolution times, customer satisfaction and efficiency." Ref 5.1.5 C. Incorrect. 'Integration and data sharing' focuses on bringing together multiple systems within service design. Ref 3.1 D. Correct. "Service integration and management refers to an approach whereby organizations manage and integrate multiple suppliers in a value stream. This is a new challenge for outsourced services and suppliers, where previously the end-to-end ownership and coordination of various third-party suppliers were managed by a single entity." Ref 5.2.4

Q	A	Syllabus Ref	Rationale
22	C	3.2.a	A. Incorrect. The organization will need some time to bring resources together to build, test, and deploy usable software developed in-house. Acquiring applications from a partner or supplier will help shorten the time needed before the organization can use the software. Ref 5.2.1 B. Incorrect. Commodity software can be sourced quicker than building the same software in-house. Ref 5.2.1 C. Correct. If there are no options available to purchase the software, the organization must build it using internal resources. Ref 5.2.1 D. Incorrect. It is better to build products that help execute the organization's strategy, rather than rely on pre-packaged software purchased from partners and suppliers. Other software, and service components, that are not as critical to strategic objectives can be sourced externally. Ref 5.2.1
23	B	1.2	A. Incorrect. "Shift-left is an integrated approach to improving the flow, efficiency, and effectiveness of work. It is used to move the delivery of work toward the optimum team or person with the aim of improving lead times, resolution times, customer satisfaction, and efficiency. In development environments, this means moving bug-fixing activities to the frontline of build and test teams earlier in the lifecycle. In support environments, repair or problem-solving activities can be moved from the higher-level technical teams to generalist frontline teams." Ref 5.1.5 B. Correct. "Shift-left improves the quality of the work and the speed with which it is performed, and reduces the need for and cost of rework. It requires more knowledge and skills, because practitioners (or, in some cases, users) need to perform a broader scope of tasks." Ref 5.1.5 C. Incorrect. "Applying shift-left to software development involves testing earlier in the lifecycle. Placing the testing software closer to the step for gathering requirements results in a reduction of the number of defects that are found in the production step. Consequently, this lowers the cost of resolving those defects by a significant factor." Ref 5.1.5 D. Incorrect. This is not a challenge, but a benefit. "An increase in the variety of tasks that team members can perform, leading to improved employee satisfaction and retention". Ref 5.1.5

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Q	A	Syllabus Ref	Rationale
24	B	1.1.c	A. Incorrect. The profile of an administrator is "Assigning and prioritizing tasks, record-keeping, ongoing reporting, and initiating basic improvements." Ref 2.2.2, tab 2.1
			B. Correct. The profile of a leader is "Decision-making, delegating, overseeing other activities, providing incentives and motivation, and evaluating outcomes." Ref 2.2.2, tab 2.1
			C. Incorrect. The profile of coordinator/communicator is "Coordinating multiple parties, maintaining communication between stakeholders, and running awareness campaigns. " Ref 2.2.2, tab 2.1
			D. Incorrect. The profile of a technical expert is "Providing technical (IT) expertise and conducting expertise-based assignments." Ref 2.2.2, tab 2.1
25	A	3.1.b	A. Correct. Triage is used to assess which issues are the most urgent. Triage prioritization is "determined by urgency, based upon an assessment of the impact a delay may cause." Ref 5.1.3
			B. Incorrect. A CI/CD pipeline "defines the set of tools, integrations, practices, and guardrails which allow a continuous and substantially automated flow of changes, from their initial design and development, through to deployment into production." Ref 3.7.3
			C. Incorrect. "Service integration and management refers to an approach whereby organizations manage and integrate multiple suppliers in a value stream." Ref 5.2.4
			D. Incorrect. "Deep learning is a subset of machine learning based on artificial neural networks." Ref 3.6.2

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Q	A	Syllabus Ref	Rationale
26	B	1.4.h	A. Incorrect. "Swarming is a method of managing work in which a variety of specialist resources or stakeholders work on a work item until it becomes apparent who is best placed to continue with the work, at which point the others are freed up to move on to other work items." Ref 5.1.4 B. Correct. An information model helps to ensure "a shared understanding of the organization's information, terminology, systems, and structure." Ref 3.8 C. Incorrect. "Shift-Left is an integrated approach to improving the flow, efficiency, and effectiveness of work." Ref 5.1.5 D. Incorrect. 'Integration and data sharing' focuses on bringing together multiple systems within service design. Ref 3.1
27	C	1.2	A. Incorrect. This step deals with the initial demand for establishing a 'shift-left' approach. Activities in this step entail "reviewing data from a variety of sources, including: customer and other stakeholder feedback, on time, cost, or quality metrics; delays in the flow of work due to handovers between teams; project interruptions for repetitive incident support; rework to fix bugs or defects, or other service quality concerns; staff frustration/feedback." Ref 5.1.5, tab 5.1 B. Incorrect. This step has activities which assess all the areas affected and review performance data, conduct cost-benefit analysis, identify areas affected – practices, processes, people, teams, structure, policy, training, recruitment, roles, and remuneration in order to make a decision about a shift-left approach. Ref 5.1.5, tab 5.1 C. Correct. This step includes communication activities to socialize the approach. The activities in this step include communication and socializing the approach – "working with key people to sell benefits and impact; communicating with employees and stakeholders." Ref 5.1.5, tab 5.1 D. Incorrect. This step has activities which establish the targets of adopting a 'shift-left' approach. An example of targets could be - "resolution/fulfilment times; number of escalations/interruptions; number of deployments per day; customer or other stakeholder satisfaction ratings; number of audit failures". Ref 5.1.5, tab 5.1

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Q	A	Syllabus Ref	Rationale
28	B	2.4.a	A. Incorrect. The 'service desk' practice does not develop solutions to incidents. This would be an activity of other practices. The 'service desk practice' "provides interfaces for other practices to exchange information with users. The effectiveness of these communications is ensured by the practice and the effective use of the information and its quality are ensured by other practices". Ref Service Desk Practice Guide 2.2.2 B. Correct. "The purpose of the service desk practice is to capture demand for incident resolution and service requests. It should also be the entry point and single point of contact for the service provider for all users." Ref Service Desk Practice Guide 2.1 C. Incorrect. This is an activity relating to the 'problem management' practice. "Problem identification may include... trend analysis". Ref Problem Management Practice Guide 3.2.2 D. Incorrect. Early life support is an activity in scope of the 'release management' practice. Ref Release Management Practice Guide 2.3
29	A	1.2	A. Correct. "Applying shift-left to software development involves testing earlier in the lifecycle." Ref 5.1.5 B. Incorrect. "Robotic process automation (RPA) is a potential way for organizations to streamline business operations, lower staffing costs, and reduce errors. Through the use of software robots (bots), repetitive and mundane tasks can be automated, allowing resources to be deployed on higher-value activities elsewhere." Ref 3.4 C. Incorrect. "Service integration and management refers to an approach whereby organizations manage and integrate multiple suppliers in a value stream. This is a new challenge for outsourced services and suppliers, where previously the end-to-end ownership and coordination of various third-party suppliers were managed by a single entity." Ref 5.2.4 D. Incorrect. 'Integration and data sharing' focuses on bringing together multiple systems within service design. "Service design frequently relies upon integration between multiple systems". Ref 3.1

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Q	A	Syllabus Ref	Rationale
30	A	2.1	A. Correct. An agile approach encourages "small increments that provide fast feedback and the opportunity to change specifications at short notice". It would therefore provide the advantage of increasing speed to market and making changes that are aligned to business objectives. Ref 4.2.2 B. Incorrect. This is a waterfall approach, which "defines the process of system development/implementation as a linear series of phases, with each phase only commenced once the previous step has been completed." Ref 3.7.1 C. Incorrect. A waterfall approach, rather than an agile approach, has the advantage of having a go live date as a clear target for all involved to focus and co-ordinate activities. "Plan-based approaches, such as the waterfall method, may still be more suitable in some situations; for example, where there is a high certainty about the requirements of the service", for example when it will be delivered. Ref 3.7.5 D. Incorrect. The organization's structure would not work well with an agile way of working, and this would not speed up decision-making. "A hierarchical organizational structure can impede decision-making, as well as an organization's ability to work quickly and with an agile approach". Ref 2.1.3
31	B	1.4.f	A. Incorrect. "Unsupervised learning also requires input data, but it does not use existing output data from previous decisions and there is no supervisor. Instead, the machine learns from the input data alone." Ref 3.6.1 B. Correct. "The performance of a machine-learning system is entirely dependent on its data, the algorithms used within it, and, for supervised systems, the quality of training." Ref 3.6.2 C. Incorrect. "Deep learning is a subset of machine learning based on artificial neural networks. This learning can be supervised, semi-supervised or unsupervised, and relies on computing systems modelled on the biological neural networks found in animal brains. These systems learn by considering examples, gradually tuning the weighting factors driving their processing in each instance." Ref 3.6.2 D. Incorrect. "Unsupervised learning is well-suited to 'clustering analysis' (the identification of inherent groupings in data) and 'dynamic baselining', which is the prediction of future behaviours of a metric based on its past behaviour." Ref 3.6.1

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Q	A	Syllabus Ref	Rationale
32	C	1.1.f	A. Incorrect. Surveys are not necessarily organized for an entire organization. "Employee surveys can be run locally or at an organizational level. The information may be obtained in a variety of ways, from formal annual surveys to more informal and irregular feedback discussions." Ref 2.2.4.1 B. Incorrect. Surveys can be run at any time and are not limited to an annual event. "Employee surveys can be run locally or at an organizational level. The information may be obtained in a variety of ways, from formal annual surveys to more informal and irregular feedback discussions." Ref 2.2.4.1 C. Correct. Surveys can be formal and informal, be conducted as conversation or as a more formal data gathering exercise and should be a blended approach. "Employee surveys can be run locally or at an organizational level. The information may be obtained in a variety of ways, from formal annual surveys to more informal and irregular feedback discussions." Ref 2.2.4.1 D. Incorrect. While surveys can be conducted electronically and often are, they can also be done in many other formats. "Employee surveys can be run locally or at an organizational level. The information may be obtained in a variety of ways, from formal annual surveys to more informal and irregular feedback discussions." Ref 2.2.4.1

Q	A	Syllabus Ref	Rationale
33	B	1.3.a	A. Incorrect. "The purpose of the workforce and talent management practice is to enable organizations, leaders, and managers to focus on creating an effective and actionable people strategy (analysing the current workforce, determining future workforce needs, identifying the gap between the present and the future, and implementing solutions) so that organizations can achieve their missions, goals, and strategic objectives." Ref 2.2.3 B. Correct. Collaboration is "based on shared goals and a high level of trust". A 'no blame' culture and honest, but respectful, feedback will develop trust and reinforce the shared goals. Ref 2.3.5, 2.3.3.7 C. Incorrect. "Shift-Left is an integrated approach to improving the flow, efficiency, and effectiveness of work. It is used to move the delivery of work toward the optimum team or person based on improving lead times, resolution times, customer satisfaction, and efficiency." Ref 5.1.5 D. Incorrect. "The true potential of an organization can only be realized when the productivity of individuals and teams are aligned, and their activities are integrated to achieve the goals of the organization. Happy and satisfied staff are needed for happy and satisfied customers. Therefore, organizations should measure employee satisfaction in order to understand how well they are meeting the employees' changing needs and expectations." Ref 2.2.4
34	B	3.1.b	A. Incorrect. A team culture is made up of the values, beliefs, attitudes and behaviours shared by a team. It is how people work together towards a common goal and how they treat each other. This concept would not resolve the issue of how to re-prioritize change requests. Ref 2.3.1 B. Correct. The 'prioritizing work' concept allows the organization to re-examine low-priority requests, and possibly give them a higher priority if teams do not have the resources to deal with such requests. Ref 5.1.3 C. Incorrect. The 'build vs buy' considerations concept describes the process for deciding whether to build something internally or to buy it from a supplier. Ref 5.2.1 D. Incorrect. Advanced analytics is the autonomous or semi-autonomous examination of data or content using high-level techniques and tools that goes beyond traditional business intelligence, to discover profounder insights, make predictions, or generate recommendations. Ref 3.2

Q	A	Syllabus Ref	Rationale
35	A	2.2.d	A. Correct. These are examples of knowledge transfer early life support activities, which are included in the scope of the 'release management' practice. Ref Release Management Practice Guide 2.3

B. Incorrect. Although the 'software development and management' practice supports release of new and changed services with knowledge and documentation sharing, the activities described are in scope of 'release management' practice. Ref Software Development and Management Practice Guide 2.3, Release Management Practice Guide 2.3

C. Incorrect. The activities of the 'deployment management' practice are focused on effective transition of service components and services between the controlled environments; early life support, knowledge sharing and user enablement are in scope of 'Release management' practice. Ref Deployment Management Practice Guide 2.3, Release Management Practice Guide 2.3

D. Incorrect. Early life support, knowledge transfer and user enablement are in scope of 'release management' practice. Ref Service Design Practice Guide 2.3, Release Management Practice Guide 2.3 |
| 36 | B | 2.4.e | A. Incorrect. This is use of the guiding principle 'keep it simple and practical' which recommends: "Do not try to put everything in the agreement but focus on what matters and what can be realistically measured and managed." Ref Service Level Management Practice Guide 2.4.1, tab 2.3

B. Correct. This is use of the guiding principle 'focus on value', which recommends focusing "on outcomes for the service consumer organization and on user experience more than on technical details and associated metrics." Ref Service Level Management Practice Guide 2.4.1, tab 2.3

C. Incorrect. This is use of the guiding principle 'collaborate and promote visibility', which recommends to "discuss the agreed service level with those it will affect". Ref Service Level Management Practice Guide 2.4.1, tab 2.3

D. Incorrect. This is use of the guiding principle 'start where you are', which recommends to "base your agreements on previous experience". Ref Service Level Management Practice Guide 2.4.1, tab 2.3 |

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Q	A	Syllabus Ref	Rationale
37	C	2.1	A. Incorrect. The problem faced by this organization is that the relevant stakeholders have not been included in the development phase. There is nothing to suggest that the external development organization's support teams would have been involved, if the internal support teams were not. A change to the sourcing arrangements will not necessarily make any difference to the user experience. Ref 3.1.1.1

B. Incorrect. This answer does not resolve the situation in which the relevant stakeholders have not been involved in the development phase. Even if a self-service system were to be introduced, such a system would not be able to deal with all user issues relating to the changes, and the support staff would still need to be involved at some stage. Ref 3.1.1.1

C. Correct. "It is imperative that any work to build or upgrade a service involves those who are involved in the value stream – so not just the initial designers, architects and programmers, but also those who will test implement, run and support the service, all including both internal and external suppliers and partners." Ref 3.1.1.1

D. Incorrect. There is nothing to suggest that the second-line support teams are any more aware of the changes going live than the service desk staff are. But, even if the second-line support teams are able to resolve users' queries, the service desk, as first-line support, should not be bypassed, and should be made aware of the changes. Ref 3.1.1.1 |

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Q	A	Syllabus Ref	Rationale
38	B	2.1	A. Incorrect. This is not an 'outside-in' approach. An 'outside-in' approach would involve "framing outcomes and value from the customer or user's point of view." Ref 4.1.3.2 B. Correct. This answer focuses on the customer experience and is an example of viewing services from outside the IT organization to determine the steps to be taken inside the organization. This is an example of an 'outside-in' approach, which involves "framing outcomes and value from the customer or user's point of view." Ref 4.1.3.2 C. Incorrect. This answer focuses on internal technical teams and not an example of an 'outside-in' approach. An 'outside-in' approach would involve "framing outcomes and value from the customer or user's point of view." Ref 4.1.3.2 D. Incorrect. This is not an 'outside-in' approach. An 'outside-in' approach would involve "framing outcomes and value from the customer or user's point of view." Ref 4.1.3.2

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Q	A	Syllabus Ref	Rationale
39	C	2.2.e	A. Incorrect. The removal of tests may introduce unacceptable risks. To decide whether a test can be bypassed, review of the likelihood of failure and impact should be done: "Considering the requirements that the Service Provider is meeting; an assessment of each, in the context of the likelihood of failure and impact of failure, enables a view of where testing should focus." Ref Service Validation and Testing Practice Guide 2.1
			B. Incorrect. Adding tests should be justified. To decide whether a test is required, review of review of the likelihood of failure and impact should be done: "Considering the requirements that the Service Provider is meeting; an assessment of each, in the context of the likelihood of failure and impact of failure, enables a view of where testing should focus." Ref Service Validation and Testing Practice Guide 2.1
			C. Correct. To optimize testing, review of the likelihood of failure and impact should be done: "Considering the requirements that the Service Provider is meeting; an assessment of each, in the context of the likelihood of failure and impact of failure, enables a view of where testing should focus." Service Validation and Testing Practice Guide 2.1
			D. Incorrect. "Exhaustive testing of even simple systems is not typically possible given time and cost constraints. So, choosing what to test is important." To make this choice, a review of failure likelihood and impact should be done: "Considering the requirements that the Service Provider is meeting; an assessment of each, in the context of the likelihood of failure and impact of failure, enables a view of where testing should focus." Ref Service Validation and Testing Practice Guide 2.1

Q	A	Syllabus Ref	Rationale
40	B	2.2.c	A. Incorrect. "Continuous Integration usually refers to integrating, building, and testing code within the software development environment." The scenario in the question includes activities beyond 'continuous integration', covering the final stages for production deployment. Ref Deployment Management Practice Guide 2.2.2
			B. Correct. 'Continuous delivery' extends the activities of 'continuous integration', "covering the final stages for production deployment. Continuous Delivery means that built software can be released to production at any time." Ref Deployment Management Practice Guide 2.2.2
			C. Incorrect. "Continuous Deployment means that changes go through the pipeline and are automatically put into production. This enables multiple production deployments per day. 'Continuous delivery' means that frequent deployments are possible, but deployment decisions are taken case by case, usually due to businesses preferring a slower rate of deployment." In this question, the changes are not automatically put into production. Ref Deployment Management Practice Guide 2.2.2
			D. Incorrect. The 'service validation and testing' practice supports the approaches of 'continuous integration', 'continuous delivery' and 'continuous deployment', but does not include the scope of the approach in the question. Ref Deployment Management Practice Guide 2.2.2

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