



ITIL® Intermediate Capability Stream:

PLANNING, PROTECTION AND OPTIMIZATION (PPO) CERTIFICATE

Sample Paper 1, version 6.1

Gradient Style, Complex Multiple Choice

ANSWERS AND RATIONALES

Answer Key:

Scenario	Question	Correct: 5 Marks	2nd Best: 3 Marks	3rd Best: 1 Mark	Distracter: 0 Marks
One	1	<i>C</i>	<i>D</i>	<i>A</i>	<i>B</i>
Two	2	<i>B</i>	<i>A</i>	<i>C</i>	<i>D</i>
Three	3	<i>D</i>	<i>A</i>	<i>C</i>	<i>B</i>
Four	4	<i>C</i>	<i>A</i>	<i>B</i>	<i>D</i>
Five	5	<i>B</i>	<i>C</i>	<i>A</i>	<i>D</i>
Six	6	<i>D</i>	<i>C</i>	<i>B</i>	<i>A</i>
Seven	7	<i>A</i>	<i>B</i>	<i>D</i>	<i>C</i>
Eight	8	<i>D</i>	<i>A</i>	<i>C</i>	<i>B</i>

QUESTION	One	Scenario	One
Question Rationale	This question focuses on how availability requirements are determined and how to construct an approach to a review of availability requirements against the scenario given. Also to demonstrate an understanding of activities that would follow a review of availability requirements.		
MOST CORRECT (5)	C	This is the most correct answer as it starts with an assessment of the impact of the incident on SC’s business targets. This answer recognizes that the duration of the outage is a significant factor, rather than the frequency of outages, hence the proposal that an additional target is added for MTRS. The answer also recognizes that, from a business perspective, slow performance can have the same impact as unavailability.	
SECOND BEST (3)	D	This is the second best answer as it recognizes the need to review the availability design and considers additional targets that may be meaningful to the customer. Though it may be valid to amend the availability figure for the previous month, this answer is not as good as answer C because it suggests that the review of the availability design should be with the CTG support team, and does not mention involvement of the business.	
THIRD BEST (1)	A	This is the third best answer as it focuses on a technical review of impact, rather than a review with the business. Whilst component availability measures would be of use to CTG in understanding trends and underlying causes of incidents, the suggestion is not customer-focused as SC would be interested in the overall service availability, not component availability.	
DISTRACTER (0)	B	This answer is the distracter as it suggests that the target should be determined by the availability manager, not by the business. It also states that a continuous availability solution should be implemented, although there is no evidence this would be cost-justified and there is no mention of undertaking cost-benefit analysis. Continuous availability is expensive and this level of availability may not be needed by the business to achieve its target.	
Syllabus Unit / Module supported	ITIL SC: PPO03 Availability management		
Bloom’s Taxonomy Testing Level	Level 4 Analysis - The ability to use the practices and concepts in a situation or unprompted use of an abstraction. Can apply what is learned in the classroom in workplace situations. Can separate concepts into component parts to understand structure and can distinguish between facts and inferences. Application – The candidate must apply their knowledge of availability management and analyse the needs described in the scenario. Use of knowledge related to the approach for reviewing availability and the business implications of unavailability and degraded availability within the context of the scenario must be considered to select the correct answer option.		
Subjects covered	Categories covered: <ul style="list-style-type: none">• Availability requirements		
Book Section Refs	SD 4.4.4 – Service design processes – Availability management – Policies/principles/basic concepts SD - 4.4.5 Service design processes – Availability management – Process activities, methods and techniques.		
Difficulty	Moderate		

QUESTION	Two	Scenario	Two
Question Rationale	This question focuses on the value of service design.		
MOST CORRECT (5)	B	This is the correct answer. It addresses all of the issues raised in the scenario and correctly identifies benefits of service design which are relevant to the audience: <ul style="list-style-type: none">Although TCO includes more than the costs cited, these are the specific costs mentioned in the scenarioImproved service alignment should reduce incidents of services being introduced with missing functionalityImproved consistency of service will be achieved by improving functional design in keeping with business requirements, an issue in the scenario citing incompatible servicesEased implementation addresses the budget and schedule overruns mentioned in the scenario.	
SECOND BEST (3)	A	This is second best answer in that it addresses most of the issues raised in the scenario and correctly identifies several benefits of service design: <ul style="list-style-type: none">Although service design can ensure that capacity matches business needs, and equipment costs do contribute to TCO, there is no evidence in the scenario that this is an issueSLAs, however, are important; the value of service design comes from the early collaboration of the design team with the customerImproved IT governance is a benefit of service design, however there is no evidence in the scenario that this is an issueCorrect, as noted above.	
THIRD BEST (1)	C	This is the third best answer. It includes one valid and relevant benefit of service design (eased implementation as noted above), but the rest are incorrect: <ul style="list-style-type: none">It is possible that a reduction in incidents may make it possible to reduce staff on the service desk, which would reduce TCO, but this is unlikely to be persuasive with the audienceImproved information and decision-making are benefits of service design, but there is no evidence in the scenario that this is an issue.Increased ability to understand what types and levels of service will make the customer successful is a benefit of service strategy, not service design	
DISTRACTER (0)	D	This is the distracter. None of the points is both a valid service design benefit and relevant to the audience: <ul style="list-style-type: none">Including people, partners, and processes is important, but it is a means to achieve the benefits of service design, not a benefit in its own rightWhile the SDP is a product of service design, its purpose is not to ensure accountability, but to ensure that the benefits of service design can be realizedReduced delays caused by unexpected clashes and dependencies is a benefit of service transitionImproved MTRS is always a worthy objective, but we are told in the scenario that the existing services are performing well, so improvements in this area will not have as great an impact as improvements in areas mentioned in the scenario.	
Syllabus Unit / Module supported	ITIL SC: PPO01 Introduction		
Bloom's Taxonomy Testing Level	Level 2 Comprehending - Understand or grasp the meaning of what is being communicated and make use of the idea. Tasks include illustrating, inferring, summarizing and interpreting.		
Subjects covered	Categories covered: <ul style="list-style-type: none">Value of service design		
Book Section Refs	SD 1.1.4 Value to the business		
Difficulty	Easy		

QUESTION	Three	Scenario	Three
Question Rationale	This question focuses on IT service continuity requirements and strategy, focusing specifically on recovery options		
MOST CORRECT (5)	D	This is the most correct answer as it will ensure that service can be restored within a 24-hour period as agreed with the managing director. Storage of the backup media at the northern site will ensure the data is available quickly and can be restored onto the duplicate servers. This answer also includes the regular testing of the backup and restoration processes to ensure they are effective.	
SECOND BEST (3)	A	This is the second best answer as immediate recovery of the services will ensure they remain operational to the business. Whilst it would be appropriate to build a business case based on the recent power outage, the cost of this recovery option will be much higher than fast recovery and is not in line with the business need since it has been agreed that EC can operate for up to one day without these services.	
THIRD BEST (1)	C	This is the third best answer as warm standby would not be appropriate for the business need. Whilst the portable solution would be delivered within 24 hours, this will only provide the technology and it does not attempt to address the need to recover the service itself within 24 hours - the technology would need to be configured correctly, the data restored, and the service tested.	
DISTRACTER (0)	B	This is the distracter. The business has already agreed that service should be restored within one working day and a gradual recovery process such as this will take much longer - the equipment installation would be dependent on the hardware vendor or support provider's lead times and will then have to be built, configured and restored.	
Syllabus Unit / Module supported	ITIL SC: PPO04 IT service continuity management		
Bloom's Taxonomy Testing Level	Level 4 Analysis - The ability to use the practices and concepts in a situation or unprompted use of an abstraction. Can apply what is learned in the classroom in workplace situations. Can separate concepts into component parts to understand structure and can distinguish between facts and inferences. Application – The candidate must have an in-depth understanding of IT service continuity and the various recovery options and have correctly analysed the scenario to determine the best option for the organization.		
Subjects covered	Categories covered: <ul style="list-style-type: none">IT service continuity requirements		
Book Section Refs	SD 4.6.5.2 – Service design processes - IT service continuity management – Stage 2 – Requirements and strategy		
Difficulty	Moderate		

QUESTION	Four	Scenario	Four
Question Rationale	This question focuses on IT information security management, particularly on the assignment of roles for specific types of security breach. The correct assignment of roles and security control types are as follows: <ul style="list-style-type: none">• Event management is the process charged with detecting events and determining the appropriate action. Therefore, the process owner is designated accountable and the process manager responsible. Since it is the ISM manager's responsibility to respond to instances of intrusions, the ISM manager must be informed. Type - Detective• Ensuring that services are designed to the levels of security required by the business is one of the objectives of ISM. Therefore, the ISM manager is responsible, along with application development, for this being done. The ISM owner is accountable. Type - Preventive• The application management function, per the task description, is responsible for carrying out the tests. However, it is up to the ISM manager to design the tests. The ISM owner is accountable. Type - Reductive• The ISM manager is responsible for specifying the access controls. The service desk, performing an access management role, will carry out the activities of granting and removing access. Human resources will be consulted to verify the status of employees requesting access. The ISM owner is accountable. Type - Preventive• The damage of this type of loss is mostly to the company's customers and regulatory agencies, so corporate governance is both responsible and accountable. In order to let people know what actions have been taken, the ISM manager will need to be consulted. Type - Corrective• The lockdown of the application should be an automatic response to the intrusion and is therefore the responsibility of the event management process manager and the event management process owner. The ISM manager should be informed to verify that the lockdown has taken place. Type - Repressive.		
MOST CORRECT (5)	C	This is the best answer, in that it represents the correct categorization of the activities to the relevant security control type and assignment of roles as outlined above.	
SECOND BEST (3)	A	This is the second best answer. It incorrectly categorizes activity 3 (intrusion tests) as repressive and activity 6 (lockdown) as reductive. Also, human resources should not be considered accountable for the access control, as that is an IT activity in which HR acts as a consultant.	
THIRD BEST (1)	B	This is the third best answer. It gives the incorrect characterization of activity 2 (design for maximum security), activity 4 (access controls), and activity 6 (lockdown). Also, it is incorrect in assigning accountability for activity 1 (detection) to the ISM manager and responsibility to the service desk (this might be correct if the service desk was responsible for incident management, but the scenario did not indicate that); accountability for activity 5 (working with customers) is incorrectly assigned to the ISM owner.	
DISTRACTER (0)	D	This is the distracter. It incorrectly characterizes all of the activities, and assigns accountability incorrectly for activities 2, 4, and 5. In addition, it has two roles as accountable for activity 5, which is not allowed for a RACI matrix.	
Syllabus Unit / Module supported	ITIL SC: PPO05 IT Information security management.		
Bloom's Taxonomy Testing Level	Level 3 Applying – Use ideas, principles and theories in new, particular and concrete situations. Behavioural tasks at this level involve both knowing and comprehension and might include choosing appropriate procedures, applying principles, using an approach or identifying the selection of options. Application – The candidate must analyse the scenario and, using their knowledge of the ISM process, identify the security management activity categories, and determine responsibilities based on roles defined in the guidance.		
Subjects covered	Categories covered: <ul style="list-style-type: none">• Information security management		
Book Section Refs	SD 4.7.1 – Service design processes – Information security management – Purpose		

	and objectives SD 4.7.5 – Service design processes – Information security management – Process activities, methods and techniques SD 6.3.11.1 – Organizing for service design – Roles and responsibilities – Information security management – Information security management process owner SD 6.3.11.2 – Organizing for service design – Roles and responsibilities – Information security management – Information security management process manager
Difficulty	Hard

QUESTION	Five	Scenario	Five
Question Rationale	This question focuses on understanding the relationship between business capacity management, service capacity management, and component capacity management. It also addresses the need for capacity managers to identify opportunities to make appropriate use of new technologies and the need for understanding patterns of business activity.		
MOST CORRECT (5)	B	This is the most correct answer. The customer's experience is explicitly addressed in this approach. By taking this approach, you may identify that there is room to reduce capacity without sacrificing the one-minute rule. This is the only answer that anticipates future requirements. Use of modelling is much more effective because of the knowledge of the customer experience. New technologies are considered.	
SECOND BEST (3)	C	This is the second best answer. This approach involves the business, so you will gain an understanding of how the utilization of the service impacts upon the utilization of resources. The use of modelling will help to provide a realistic picture of the performance under real conditions. However, this approach fails to get at the customer's experience.	
THIRD BEST (1)	A	This is the third best answer. This approach at least includes an analysis of how the applications use resources but fails to get at the user experience. Also, while developers may provide insight into the theoretical performance of the applications, they have little knowledge of performance under actual conditions. This approach may enable FSC to maintain the one-minute guarantee, but it will likely not take advantage of the maximum cost savings.	
DISTRACTER (0)	D	This is the distracter. This answer focuses exclusively on the components without regard to the user experience. It relies on general guidelines for server consolidation without regard to the specific applications or users. The approach will produce savings. However, it is likely to lead to breaches of the one-minute guarantee, as future transaction volumes are not taken into account. The 10% and 80% utilization targets appear to be arbitrary figures.	
Syllabus Unit / Module supported	ITIL SC: PPO02 Capacity management		
Bloom's Taxonomy Testing Level	Level 4 Analysis - The ability to use the practices and concepts in a situation or unprompted use of an abstraction. Can apply what is learned in the classroom in workplace situations. Can separate concepts into component parts to understand structure and can distinguish between facts and inferences. Application – The candidate must apply their knowledge of the capacity management process and in particular business and component capacity management in order to select the correct answer for the proper approach to address the issues described in the scenario.		
Subjects covered	Categories covered: <ul style="list-style-type: none">Relationship between business capacity management, service capacity management and component capacity management		
Book Section Refs	SD 4.5.5.1 – Service design processes – Capacity management – Business capacity management SD 4.5.5.3 – Service design processes – Capacity management – Component capacity management		
Difficulty	Easy		

QUESTION	Six	Scenario	Six
Question Rationale	This question focuses on demand management, particularly on the necessary response to unexpected changes in patterns of business activity.		
MOST CORRECT (5)	D	This is the correct answer. It recognizes that the massive surge in loan applications cannot be handled by the existing infrastructure. Although extraordinary efforts are not required in the contract, maintaining a good relationship with the customer is important for contract renewal, and therefore it is appropriate to investigate alternative approaches to meeting the customer's needs. Using redundant components on a temporary basis is appropriate, as is leasing additional equipment as necessary. Having access to redundant equipment on contingency will help to keep costs to a minimum. Differential charging is unlikely to change the customer's behaviour very much, since the customer has little or no control over when loan applications are submitted. However, it is appropriate to use the charging mechanism in place to recover costs above normal expenses. This approach also accounts for the reporting needs, which still exist even during the disaster period	
SECOND BEST (3)	C	This is the second best answer. While it recognizes that existing capacity is not sufficient, it takes a more expensive approach in leasing equipment to provide redundancy on other than a contingency basis. Also, it is unlikely that when the contract comes up for renewal, the bank will be willing to reimburse the services company for costs already incurred.	
THIRD BEST (1)	B	This is the third best answer. It also fails to recognize that existing capacity is insufficient. Differential charging, as noted above, is unlikely to have much of an effect on the customer's behaviour, since the customer cannot control when loan applications are submitted.	
DISTRACTER (0)	A	This is the distracter. Owing to the huge increase in loan applications at a peak time, it is unlikely that the existing infrastructure, even in 24 hours, can keep up with demand. The customer will experience unacceptably long delays. Although the terms of the contract are being fulfilled, the customer may be unwilling to renew it if its extraordinary needs cannot be accommodated.	
Syllabus Unit / Module supported	ITIL SC: PPO06 Demand management		
Bloom's Taxonomy Testing Level	Level 3 Applying – Use ideas, principles and theories in new, particular and concrete situations. Behavioural tasks at this level involve both knowing and comprehension and might include choosing appropriate procedures, applying principles, using an approach or identifying the selection of options. Application – The candidate must apply their knowledge of application-sizing in order to select the correct approach, given the issues described in the scenario.		
Subjects covered	Categories covered: <ul style="list-style-type: none">• Demand management: Patters of business activity• Capacity management: application-sizing & resilience		
Book Section Refs	SS 4.4.5.2 – Service strategy processes – Demand management – Patterns of business activity SS 4.4.5.6 - Service strategy processes – Demand management – Management of operational demand SD 4.5.5.8 – Service delivery processes – Capacity management – Application-sizing		
Difficulty	Moderate		

QUESTION	Seven	Scenario	Seven
Question Rationale	This question focuses on roles and responsibilities for the processes of capacity management, availability management, IT service continuity management, and information security management. The answers are based on the following information from ITIL guidance: <ul style="list-style-type: none">• Technical skills are needed by all four process managers, but they are especially important for the manager of capacity management (“assess new technology and its relevance to the organization”), and to a lesser extent for availability management and IT service continuity management• Ability to work on a team is required by all process managers (“Co-ordinating interfaces with all other processes”)• Ability to assess risk is required for managers of the availability, IT service continuity, and information security management processes• Analytical skills are needed by all process managers, especially the manager of capacity management (“Analysis of usage and performance data”)• Communication skills are essential for the manager of any process.		
MOST CORRECT (5)	A	This is the most correct answer. Capacity management differs from the others in that technical knowledge is critical. Person A’s score, while not the best, is very good. Also important are the understanding of business requirements and communication skills, in both of which areas person A scores well. Risk assessment is important in availability, IT service continuity, and information security management, so person B, who scored well in this category, is a good match for all three. Although person C is very strong in technical knowledge, weakness in working on a team, which is essential for these roles, should be a disqualifier. Person C also does not score as well in the other categories as the others.	
SECOND BEST (3)	B	This is second best answer. It recognizes the importance of technical knowledge for capacity management. Also, capacity management and availability management share a number of concepts such as resilience, so combining the two is sometimes appropriate. However, person A’s poor score on risk assessment would make person A a less desirable candidate for availability management.	
THIRD BEST (1)	D	This is the third best answer. Assigning person C as capacity manager would be appropriate given person C’s high score on technical knowledge but, in other areas, person C scores poorly relative to the others. Letting go of person A, who scored well in understanding of business requirements and communication, would be unwise.	
DISTRACTER (0)	C	This answer is the distracter. Person C’s strength in technology does not compensate for the low scores, especially in working in a team. Person A’s strengths in technical knowledge, business understanding and communication are important, but the low score in risk assessment makes person A a poor candidate for ITSCM manager. Letting go of person B, whose strength in risk assessment makes them a strong candidate for management of the availability, IT service continuity, and information security management processes, would be unwise.	
Syllabus Unit / Module supported	ITIL SC: PPO07 Roles and responsibilities		
Bloom’s Taxonomy Testing Level	Level 4 Analysis - The ability to use the practices and concepts in a situation or unprompted use of an abstraction. Can apply what is learned in the classroom in workplace situations. Can separate concepts into component parts to understand structure and can distinguish between facts and inferences. Application – The candidate must analyse the scenario and, using their knowledge of capacity, availability, information security and IT service continuity management, select the answer option that best illustrates the risks for the organization.		
Subjects covered	Categories covered: <ul style="list-style-type: none">• Roles and responsibilities		
Book Section Refs	SD 6.3.9.2 – Organizing for service design – Roles – Capacity management roles – Capacity management process manager SD 6.3.8.2 – Organizing for service design – Roles – Availability management roles –		

	Availability management process manager SD 6.3.10.2 – Organizing for service design – Roles – IT service continuity management roles – IT service continuity management process manager SD 6.3.11.2 – Organizing for service design – Roles – Information security management roles – Information security management process manager
Difficulty	Hard

QUESTION	Eight	Scenario	Eight
Question Rationale	This question focuses on the identification of the critical factors for the success of service management, particularly with regard to capacity management, security management, availability management, and IT service continuity management.		
MOST CORRECT (5)	D	This is the most correct answer. The apparent distrust exhibited by FinDoc's management toward IT makes it imperative that you work to improve the relationship between IT and management as soon as possible. You will need a good working relationship with management to fully understand the nature of the new security requirements and also to understand their future patterns of business activity as dictated by their publication schedules. It is also important that they understand that security is also a responsibility of the business.	
SECOND BEST (3)	A	This the second best answer, as it fails to address ITs need to fully understand the additional security requirements characteristic of the financial publishing business.	
THIRD BEST (1)	C	This is the third best answer, as it fails to address the volatility or increased need for security which is a requirement of the financial publishing business. It also fails to address the apparent attitude on the part of FinDoc's management that security is only an IT issue. Finally, there is no evidence in the scenario that lack of capacity or availability is an issue.	
DISTRACTER (0)	B	This answer is the distracter. It fails to address any of the most important issues regarding the poor relationship between FinDoc's management and IT (implying a lack of management support for IT), the apparent belief that security is solely an IT concern, or the additional volatility of demand and need for security characteristic of the financial publishing business.	
Syllabus Unit / Module supported	ITIL SC: PPO02, 03, 04, 05 Challenges, critical success factors and risks (capacity, availability, continuity and information security management)		
Bloom's Taxonomy Testing Level	Level 3 Applying – Use ideas, principles and theories in new, particular and concrete situations. Behavioural tasks at this level involve both knowing and comprehension and might include choosing appropriate procedures, applying principles, using an approach or identifying the selection of options. Application – The candidate must apply their knowledge of the critical success factors around capacity, availability, IT service continuity and information security management within the context of the scenario.		
Subjects covered	Categories covered: <ul style="list-style-type: none">• Service management CSFs		
Book Section Refs	SD 4.5.9 – Service design processes – Capacity management – Challenges, critical success factors and risks SD 4.4.9 – Service design processes – Availability management – Challenges, critical success factors and risks SD 4.6.9 – Service design processes – IT service continuity management – Challenges, critical success factors and risks SD 4.7.9 – Service design processes – Information security management – Challenges, critical success factors and risks		
Difficulty	Moderate		