

Lesson 3 Progress Check

- Due No due date
- Points 100
- Questions 10
- Time Limit 15 Minutes
- Allowed Attempts Unlimited

Instructions



This quiz checks your understanding of lesson concepts.

- This is a timed assessment.
- You are allowed multiple attempts.
- Minimum passing score is 80%.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 3	15 minutes	60 out of 100
LATEST	Attempt 3	15 minutes	60 out of 100
	Attempt 2	15 minutes	50 out of 100
	Attempt 1	14 minutes	40 out of 100

⚠ Correct answers are hidden.

Score for this attempt: 60 out of 100

Submitted Nov 1 at 5:27pm

This attempt took 15 minutes.



IncorrectQuestion 1

0 / 10 pts

According to AU-18, *Space Primer*, what is “one of the most discreet and deniable forms of attacking our space systems,” and why?

☐ Uplink jamming, because it affects a transponder’s ability to distinguish the true signal from a jamming signal.



A ground segment attack, because the ground segment is often the most vulnerable of most space systems, subject to attack by a variety of means, ranging from physical attack to computer network intrusion.

☐ Spoofing, because it takes over the space system by appearing as an authorized user.



Downlink jamming, because it broadcasts a radio frequency signal of approximately the same frequency as the targeted downlink signal, but with more power. Although sophisticated technologies for downlink jamming are emerging, spoofing is one of the most discreet and deniable forms of attacking our space systems because it takes over the space system by appearing as an authorized user. (AU-18, *Space Primer*, pages 275-276)



Question 2

10 / 10 pts

According to the 2015 RAND study, *The U.S. - China Military Scorecard: Forces, Geography and the Evolving Balance of Power 1996-2017*, what risk do Chinese counterspace capabilities pose to US space functions?

☐ The risk to US space systems has decreased as a result of decreased Chinese investment in counterspace capabilities.



US weather satellites are at highest risk of Chinese counterspace attack since they typically conduct operations in low-earth orbit and support military operations.



The risk to most US space functions appears to be growing faster than the US ability or effort to mitigate them; however, 2017 is projected to be characterized by continued parity.

According to the 2015 RAND study, the risk to most US space functions appears to be growing faster than the US ability or effort to mitigate them; however, 2017 is projected to be characterized by continued parity. (*The U.S. - China Military Scorecard: Forces,*

Geography and the Evolving Balance of Power 1996-2017, (2015), pages 250-253)

- ☐ Chinese counterspace capabilities are not a risk to US space systems since they are designed to be for anti-ballistic missile systems only.



Question 3

10 / 10 pts

According to DNI Clapper in his 2016 *Worldwide Threat Assessment of the US Intelligence Community*, what is a global threat to satellite communications and global navigation space systems, and does he believe this technology will continue to proliferate?

- ☐ A global threat to satellite communications and global navigation space systems comes from antisatellite systems. DNI assesses this technology will continue to proliferate to new actors and our more advanced adversaries will continue to develop more sophisticated systems in the next few years.

- ☐ A global threat to satellite communications and global navigation space systems comes from a complex foreign intelligence apparatus. DNI assess foreign intelligence technology will continue to proliferate to new actors and our more advanced adversaries will continue to develop more sophisticated systems in the next few years.

- ☒ A global threat to satellite communications and global navigation space systems comes from electronic warfare systems. DNI assesses this technology will continue to proliferate to new actors and our more advanced adversaries will continue to develop more sophisticated systems in the next few years. According to DNI Clapper in his 2016 *Worldwide Threat Assessment*, a global threat to satellite communications and global navigation space systems comes from electronic warfare systems. DNI assesses this technology will continue to proliferate to new actors and our more advanced adversaries will continue to develop more sophisticated systems in the next few years. (DNI *Worldwide Threat Assessment of the US Intelligence Community* (2016), page 9)

- ☐ A global threat to satellite communications and global navigation space systems comes from electronic warfare systems. DNI assesses this technology will diminish in proliferation to new actors; however, our more advanced adversaries will continue to develop more sophisticated systems in the next few years.



IncorrectQuestion 4

0 / 10 pts

The CNN Video, *War in Space: The Next Battlefield*, depicts what a space and cyber-attack on the U.S. might look like. According to this report, what are the potential ramifications of such an attack?

- ☐ Military drones lose contact with the ground, GPS-guided weapons are rendered dumb, and warships lose contact with commanders.
- ☐ Airplanes will lose their way, and infantry will have to rely on a map and compass.

- ☐ ATM machines no longer function, cell phones lose their connectivity, and encrypted e-mails will no longer transmit.
- ☒ All of the answers are correct.

The CNN Video, *War in Space: The Next Battlefield* (2016), depicts what a space and/or cyber-attack on the U.S. might look like. According to this report, the potential ramifications of such an attack include military drones losing contact with the ground, GPS-guided weapons being rendered dumb, and warships losing contact with commanders. Therefore, one of the answers is correct. (*War in Space: The Next Battlefield* [Video], approximate time: 02:30-03:30)



Question 5

10 / 10 pts

In "Bringing Space Crisis Stability Down to Earth," Finch discusses the concept of "mutual understanding" between the U.S. and China. What US space capability does Finch highlight as being a source of misunderstanding for the Chinese?

- ☐ Geosynchronous Space Situational Awareness Program (GSSAP)
- ☐ Space Fence
- ☒ X-37B

In "Bringing Space Crisis Stability Down to Earth," Finch discusses the concept of "mutual understanding" between the U.S. and China. The US space capability Finch highlights as being a source of misunderstanding for the Chinese is the X37-B. ("Bringing Space Crisis Stability Down to Earth," page 20)

- ☐ Joint Interagency Combined Space Operations Center (JICSpOC)



Question 6

10 / 10 pts

In Szymanski's article, "Techniques for Great Power Space War," which of the following does he repeatedly mention in his Rules for Conducting Space Warfare?

- ☒ Considering what our adversary will believe, do, or be unable to do.
- ☐ Considering how budget cuts may undermine our space-based capabilities.
- ☐ Considering the Laws of Armed Conflict and space-related treaties.
- ☐ Considering how strong our national will may be to pursue conflict in and through space.

Your answer is correct.



Question 7

10 / 10 pts

Stover and Johnson (2014) explore the argument of a separate space force as one of the potential futures for US space capabilities. What premise do they present as the rationale to look for an alternative to the status quo?



The rationale for an alternative to the status quo is that in the same way the Air Force broke away from the Army to focus its efforts on air superiority, a space force should break away from the Air Force to focus on space superiority.



Proponents of a separate space force argue that because space is an inherently unique domain, forces operating there should be organized, trained, and equipped, and funded separately – in the same fashion as air, land, and sea forces.

Stover and Johnson (2014) explore the argument of a separate space force as one of the potential futures for US space capabilities. Their premise as the rationale to look for an alternative to the status quo is: Proponents of a separate space force argue that because space is an inherently unique domain, forces operating there should be organized, trained, and equipped, and funded separately – in the same fashion as air, land, and sea forces. (“Space Separatism: Degree of Differentiation,” page 18)



Proponents of a separate space force argue that the interconnectedness of space activities in the other domains is the primary reason to pursue separation.



The rationale for an alternative to the status quo is that technological advancements in space capabilities create a natural imperative for a separate organize, training, equip, and funding architecture.



Question 8

10 / 10 pts

According to Gen Shelton in “Military Space: At a Strategic Crossroad,” what factors define the “strategic crossroad,” and why are they important to the potential future for space forces?



The factors are 1) a radically different operating environment and 2) a declining budget. They are important to the potential future for space forces because the status quo approach is inadequate, and alternatives must balance required capability, affordability, and resilience.

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status quo approach is inadequate, and alternatives must balance required capability, affordability, and resilience. (“Military Space: At a Strategic Crossroad,” pages 4-7)



The factors are 1) an inability to manage conflicts against multiple peers and 2) a challenging domestic political climate. They are important to the potential future for space forces because our near-peers continue to advance in their space capabilities while the U.S. continues to struggle with how to prioritize its limited resources.



The factors are 1) a significant increase in congestion in space and 2) a significant increase in contest in space. They are important to the potential future for space forces because space is no longer a benign operating environment, and must now be treated as a warfighting domain.



None of the answers are correct.



IncorrectQuestion 9

0 / 10 pts

According to an argument in *Space Domain Mission Assurance: A Resilience Taxonomy*, why does the concept of resilience need to be defined?



Without a definition and method to measure resilience, it is not possible to plan for alternative future space system architectures and deployment strategies.



Without a definition and method to measure resilience, future space systems will not take mission assurance into account, and will continue to operate under the assumption that space is a benign environment.

According to an argument in *Space Domain Mission Assurance: A Resilience Taxonomy* (2015), the concept of resilience needs to be defined because without a definition and method to measure resilience, it is not possible to plan for alternative future space system architectures and deployment strategies. (*Space Domain Mission Assurance: A Resilience Taxonomy*, (2015), page 1)



Without a definition and method to measure resilience, space mission assurance will be left to be decided by contractors who are not concerned about the potential threat.



All of the answers are correct.



IncorrectQuestion 10

0 / 10 pts

What was the vision that Air Force Space Command (AFSPC - redesignated the US Space Force in 2019) developed in response to CDRUSSTRATCOM's concern that he was not happy with the way AFSPC equipped him, because it did not give him the ability or the capabilities he needed to operate in a contested environment. Additionally, how did this vision change AFSPC's approach?

☒ Joint Space Operations Center (JSpOC). JSpOC will provide space integration support to fielded joint forces.

According to Gen Hyten, Air Force Space Command came up with the Threat-Focused Space Enterprise Vision (SEV) in response to CDRUSSTRATCOM's concerns. SEV will present space forces in context of the threat instead of the mission. (Hyten, National Space Symposium Keynote (2016), page 8)

☐ Threat-Focused Space Enterprise Vision (SEV). SEV will present space forces in context of the threat instead of the mission.

☐

Space Mission Force (SMF). SMF will train space operators to be expert space tacticians in context of the threat instead of in context of platform specifications.

☐ Joint Interagency Combined Space Operations Center (JICSpOC). JICSpOC will break down barriers in between the DoD and Intelligence Community.

Quiz Score: 60 out of 100