

FreeFlyer® Level 1 Certification: Sample Questions

1. Which of the following forces is not configured through a Spacecraft object's ForceModel?
 - a. Drag
 - b. Lift
 - c. Propulsion
 - d. Solar Radiation Pressure
2. Which of the following are attitude systems available for use with Spacecraft?
 - a. Euler Angles
 - b. Attitude Matrix (DCM)
 - c. Quaternions
 - d. All of the above
3. Which of the following is not directly available as an Orbit Wizard within the Spacecraft object dialog?
 - a. Sun-Synchronous Orbit
 - b. Highly Elliptical Orbit (HEO)
 - c. Molniya Orbit
 - d. Geosynchronous Orbit (GEO)
4. Why might you use a Variable Step Size rather than a Fixed Step Size?
 - a. To increase the fidelity of the simulation
 - b. To achieve consistent data output intervals
 - c. To control step size with a Variable object
 - d. To save run time
5. Which Ephemeris file format is not natively supported?
 - a. Code 500 PC Ephemeris
 - b. CCSDS OEM
 - c. SPICE
 - d. HEO Transfer Ephemeris
6. How can Formation objects be initialized?
 - a. Norad TLE
 - b. SP3 Precise Ephemeris
 - c. Manually
 - d. All of the above
7. Which of the following cannot be used with the Report command?
 - a. ConsoleWindow
 - b. DataTableWindow
 - c. PlotWindow
 - d. External Files

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8. Which command will output a plot in terms of angle and radius pairs?
 - a. Plot
 - b. AngularPlot
 - c. Monitor
 - d. PolarPlot
 9. What is the difference between the View and Map commands?
 - a. The Map command displays only GroundStation data while the View command displays only Spacecraft data
 - b. The Map command displays objects in a 2D view while the View command displays objects in a 3D view
 - c. The Map command includes political boundaries overlayed on the planet while the View command does not
 - d. They can be used interchangeably with different inputs
 10. Why might you use a GraphicsOverlay Object?
 - a. To overlay fixed data on top of a ViewWindow that won't move around even when the Viewpoint is changed
 - b. To display custom graphics as an overlay on a PlotWindow that will update when new values are added to the plot
 - c. To display custom graphics inside a ViewWindow that is attached to objects in the view and will move around when the Viewpoint is changed
 - d. None of the above options describe the use-case for a GraphicsOverlay
 11. Which of the following is not a valid flow control statement?
 - a. Break
 - b. Pause
 - c. Stop
 - d. Hold
 12. Which of the following is a viable means by which to get data into a Procedure?
 - a. Passing the data in as an argument
 - b. Populating a global object with the data
 - c. Reading the data in from a file
 - d. All of the above
 13. Why might you use a VisibilityCalculator instead of a VisibilitySegment?
 - a. To manage VisibilitySegment objects when calculating chain visibility
 - b. To save on computational resources and improve performance
 - c. To perform occultation analyses using terrain data
 - d. To incorporate effects due to refraction into the line of sight calculations

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14. What happens if propagation begins or ends during an interval method event?
- a. FreeFlyer calculates the actual start/end of the event and reports that as the event time
 - b. FreeFlyer will automatically step to the beginning of the next event/end of the current event
 - c. FreeFlyer will report the start/end time of propagation as the start/end time of the event
 - d. FreeFlyer does not process or report partial events
15. Why might you use an ImpulsiveBurn?
- a. To model a complex burn using additional hardware
 - b. To model an instantaneous burn without additional hardware
 - c. To model a burn without mass depletion
 - d. None of the above
16. Which object type exists purely to connect multiple Tank objects to a Thruster object?
- a. Mixer
 - b. Connector
 - c. Valve
 - d. None of the above
17. Which of the following objects is not available for configuration as part of Spacecraft orbit determination?
- a. GPSReceiver
 - b. Antenna
 - c. Transponder
 - d. TDRSTransponder
18. Which object is used to connect with Matlab?
- a. MatlabInterface
 - b. MatlabConnector
 - c. Matlab
 - d. MatlabCOM
19. Which of the following is a valid use-case for a custom CelestialObject?
- a. Asteroid
 - b. Comet
 - c. Planet
 - d. All of the above
20. Which of the following cannot be edited on the Plot User Preferences page?
- a. Time between updates
 - b. Points between update
 - c. Maximum points per plot
 - d. Visibility of the data culling warning