Rank: \_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mandatory Training Day Make-Up

Level – 1 Aerospace

PO 440 – IDENTIFY ASPECTS OF SPACE EXPLORATION

1. Why is pure aluminum unsuitable for use in many applications of aerospace construction?
2. What three characteristics make titanium useful for aerospace components?
3. What two metals are mixed with steel to make stainless steel?
4. What type of glass is used in fibreglass strands?
5. What is the best known aramid material?
6. What method is used to stiffen carbon fibre materials?
7. What are the altitudes of LEO, MEO and GEO orbits?
8. What is the major gas found in LEO?
9. What is the most commonly used metal for spacecraft structure?
10. What was the year of Alouette's first launch?
11. What was Alouette designed to do?
12. What program followed the success of Alouette?
13. What year was that the MOST telescope carried aloft?
14. What sort of orbit does MOST have?
15. What viewing opportunity does MOST's orbit provide?
16. What kind of satellites are RADARSAT satellites?
17. In what year was the first RADARSAT launch?
18. What are three purposes of the RADARSAT program?
19. What job was Alouette designed to do?
20. What does MOST's orbit provide?
21. What are three purposes of the RADARSAT program?
22. The engine case of a model rocket engine can be made from what materials?
23. Why does a model rocket require an ejection charge?
24. How does an igniter work?
25. What purpose does the nose cone serve?
26. What does the launch lug do?
27. How do the fins affect the flight of the rocket?
28. How is a model rocket tracked during its flight?
29. When is the optimum time during a rocket’s flight profile to deploy the parachute or streamer?
30. Why is there a delay or coast phase during the rocket’s flight
31. Why is safety important when launching model rockets
32. Who establishes the rules for model rocketry in Canada?
33. What is the maximum weight of a model rocket?
34. When do the fins help guide the rocket during its flight?
35. How are rocket engines classified?
36. How do we slow a rocket's descent?
37. What purpose does the nose cone serve?
38. What is apogee?
39. Complete the information in the tables found below





1. What is a static load on a structure?
2. What happens to an object under tension?
3. What will torque do to an object?
4. What are autonomous systems?
5. What two modes do robots such as the Canadarm and the Canadarm2 combine?
6. What computer controls the SRMS?
7. What are two properties of robots that make them especially desirable for certain jobs?
8. What was the name of the AI on DS1?
9. Name three possible military missions for robots.
10. What two modes do robots such as the Canadarm and the Canadarm2 combine?
11. What characteristics make autonomous robots different from regular machinery?
12. What are five applications of robots?
13. What is the celestial sphere?
14. What are the NCP and the SCP?
15. Where is the celestial equator located?
16. What are a celestial object's two coordinates called?
17. On what is a celestial object's right ascension measured?
18. What is the plane of the ecliptic?
19. What are two reasons that a star chart is accurate only on a specific date?
20. Why is a star chart accurate only at a specific hour?
21. For orientation, how is a star chart is held?
22. What is the celestial sphere?
23. Why are planispheres specific to latitudes on Earth?
24. Where does the name planisphere come from?
25. How many axes of movement does an equatorial mount have?
26. What is the purpose of a finderscope?
27. What is the purpose of a lens?
28. Why must one never look at the sun through an unfiltered lens?
29. What is seeing?
30. What are three advantages of SCTs?
31. How many axes of movement does an altazimuth mount have?
32. Who invented the Newtonian reflector telescope design and in what year was it invented?
33. What does folding the light path in a SCT allow the manufacturer to do?
34. What was the speed limit for all matter and energy in the universe under Einstein's 1905 Special Theory of Relativity?
35. How many coordinates describe an object's position in Newton's physics?
36. How many coordinates describe an object's position in Einstein's physics?
37. What is meant by rigidity in space?
38. What is geodetic effect?
39. What is frame-dragging effect?