Science Olympiad
Science Olympiad National Tournament 2024

May 25, 2024

Reach for the Stars B Answer Sheet

Exploring the World of Science

Team Name and Number: _____

Participant Name(s): _____

Question 1 (40 points)

a. [2 pts] _____ , _____

b. [2 pts] _____ , _____

c. [2 pts] _____ , _____

d. [2 pts] _____ , _____

e. [2 pts] _____ , _____

f. [2 pts] _____ , _____

g. [2 pts] _____ , _____

h. [2 pts] _____ , _____

i. [2 pts] _____ , _____

j. [2 pts] _____ , _____

k. [2 pts] _____ , _____

l. [2 pts] _____ , _____

m. [2 pts] _____ , _____

n. [2 pts] _____ , _____

o. [2 pts] _____ , _____

p. [2 pts] _____ , _____

q. [2 pts] _____ , _____

r. [2 pts] _____ , _____

s. [2 pts] _____ , _____

t. [2 pts] _____ , _____

Question 2 (20 points)

a. [1 pt] _____

b. [1 pt] _____

c. [1 pt] _____

d. [1 pt] _____

e. [1 pt] _____

f. [1 pt] _____

g. [1 pt] _____

h. [1 pt] _____

i. [1 pt] _____

j. [1 pt] _____

k. [1 pt] _____

l. [1 pt] _____

m. [1 pt] _____

n. [1 pt] _____

o. [1 pt] _____

p. [1 pt] _____

q. [1 pt] _____

r. [1 pt] _____

s. [1 pt] _____

t. [1 pt] _____

Question 3 (18 points)

a. [1 pt] _____

b. [1 pt] _____

c. [2 pts] _____

_____

d. [1 pt] _____

e. [1 pt] _____

f. [2 pts] _____

_____

g. [3 pts] _____

_____

_____

_____

h. [4 pts] The likely structures of this system would be:

(i) _____

_____

(ii) _____

_____

i. [3 pts] Identification:

(i) _____

(ii) _____

(iii) _____

Question 4 (24 points)

a. [1 pt] _____

b. [2 pts] _____

    _____

c. [2 pts] _____

d. [1 pt] _____

e. [4 pts] *Atreides*: _____; *Chani*: _____

f. [4 pts] *Atreides*: _____; *Chani*: _____

g. [2 pts] _____

h. [4 pts] _____

    _____

i. [4 pts] Potential issues in assumptions:

    (i) _____

    (ii) _____

    (iii) _____

    (iv) _____

Question 5 (18 points)

a. [1 pt] _____

b. [2 pts] _____ arcsec^2

c. [2 pts] _____

d. [3 pts] RA: _____ arcsec; Dec: _____ arcsec

e. [3 pts] _____

_____

_____

_____

_____

f. [3 pts] _____

_____

_____

_____

_____

g. [4 pts] _____

_____

_____

_____

_____

_____

Question 6 (30 points)

a. [3 pts]

b. [3 pts]

c. [2 pts]
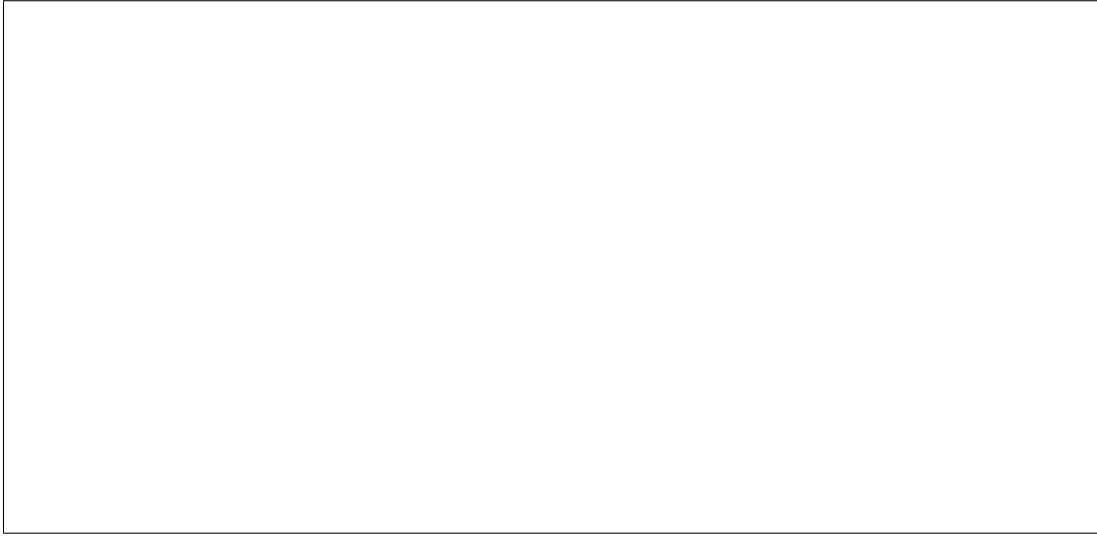
d. [4 pts]

e. [5 pts]

f. [6 pts]

g. [3 pts]

h. [2 pts]

i. [2 pts]

Question 7 (40 points)

a. [4 pts] _____

_____

b. [8 pts] Four Science Requirements:

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

(iv) _____

_____

c. [8 pts] Four Engineering Requirements:

(i) _____

_____

(ii) _____

_____

(iii) _____

_____

(iv) _____

_____

d. [14 pts] Mission Design:

e. [6 pts] Anything Else!