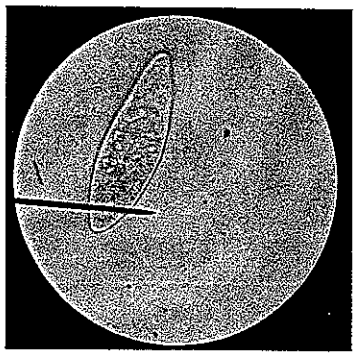
Name: _____ Name: _____ School: _____ Team #: _____

Microbe Mission 2017

/60

1. C
2. A
3. B
4. E
5. C
6. D
7. F
8. H
9. H
10. G
11. H
12. C
13. C
14. H
15. C
16. A
17. B C (2)
18. A D E G (4)
19. F H (2)
20. A
21. A
22. B
23. D
24. C
25. A
26. B
27. D
28. A
29. D
30. D
31. A
32. C
33. B
34. J
35. G
36. H
37. A
38. C
39. C
40. A
41. B

(2) 42. **If the diameter of the field of view is 400 µm, estimate the actual size (length and width) of the paramecium shown here.**



Length ~ 200 µm

Width ~ 80 µm

No ½ pts.

(1) 43. **Which of the following terms apply to the paramecium? Circle all that apply.**

Archaea	(Eukaryote)	Prion	(Protozoan)	Algae
Bacteria	Fungus	Prokaryote	Virus	

(4) 44. **Evidence suggests that two organelles in modern eukaryotes have an evolutionary origin as free-living microbes.**

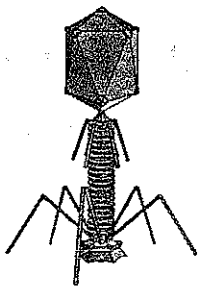
What are these two organelles? mitochondria
chloroplasts

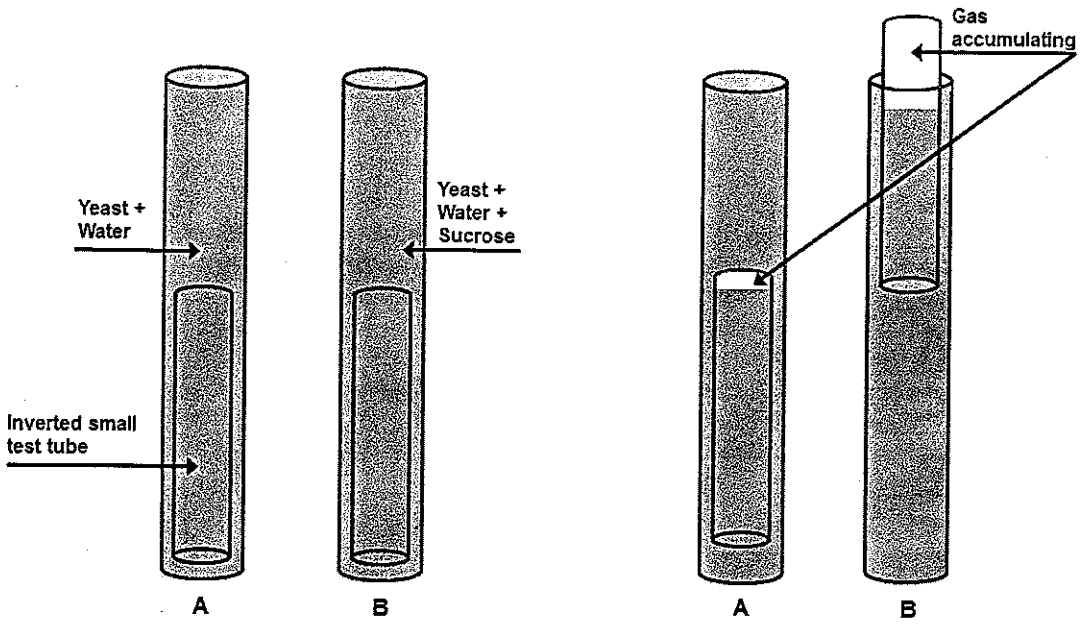
Give (any two) pieces of evidence that support their origin as microbes.

1) - DNA inside these organelles
- Ribosomes

2) - Double Membrane
- Reproduction
- ATP production

(1) 45. **What is the name of the microbe shown below?** bacteriophage (phage)
virus?





A biology student conducted the experiment above in which yeast was mixed with warm water and added to test tube A.
Then, a smaller test tube was inverted and placed inside test tube A as shown.
The same procedure was performed for test tube B, except that sucrose was added to the yeast and water solution.
All four test tubes were incubated at 37°C for 24 hours.
After the 24 hour period, the test tubes appeared as shown above (FINISH).

46. **What type of microbe is yeast?** fungus
47. **What is the independent variable in this experiment?** sucrose
48. **What is the dependent variable in this experiment?** amt of gas produced
49. **What is the gas being formed in test tubes A and B?** CO_2
50. **What is the purpose of test tube A?** control
51. **What is the cellular process demonstrated in this lab?** cellular respiration or fermentation

Tie Breaker Questions

(2) 52. **HIV is a retrovirus. In general, what is a retrovirus?**

- RNA virus.
- Uses enzyme (reverse transcriptase) to convert RNA → DNA.

(2) 53. **Why are drug cocktails used in the treatment of HIV?**

- Drug mixtures tackle different aspects of viral replication.
- Unlikely virus will have multiple random mutations to a mixture of different drugs.