Scientists and Engineers:

Here are some fun questions to test your knowledge of the Reciprocal System of Dewey B. Larson. If you can answer them correctly and in your own words then you have a good grasp of the system; if not, then take the time to delve into it further.

1. Explain Figure 4 of Quasars and Pulsars in your own words; what does each triangle mean?

2. Explain the transition from two inactive dimensions of motion in space in the material sector to two inactive dimensions of motion in time in the cosmic sector.

3. Explain the difference between the stellar temperature limit and the stellar age limit. What is the difference between supernova Type I (Type A) and supernova Type II (Type B)? What is the difference in the amount of radio and optical radiation?

4. Why do violent stellar explosions result in radiation more at radio wavelengths rather than at optical or gamma wavelengths?

5. What are the two explosion results of a galactic explosion? What are the two explosion results of a stellar explosion?

6. Fill in the blanks: A change of space displacement in cosmic matter results in a change of location in _____. A change of time displacement in normal matter results in a change of location in _____.

7. Why do we usually use displacements, rather than actual speeds, in development of the theory?

8. Explain the terms clock time, coordinate time, clock space, coordinate space.

9. Why do we add positive rotational motion to a negative photon or photons, and negative rotational motion to a positive photon or photons to create material and cosmic subatoms and atoms?

10. Why does the concentration of charged neutrinos build up with time in matter?

11. What's going on in radioactive matter? Is radioactivity actually a random process?

12. Explain the two-dimensional ultra-high speed of quasars. Explain how this accounts for the 1/d distribution of the radiation and its polarization.

13. Explain why the big bang, neutron stars, black holes, gravitational collapse, quarks, and atomic nuclei are nonsense.

14. Can one galaxy pass right through another? Why not?

15. What is the general sequence of stellar evolution?

16. Explain the jet that issues from M 87.

17. Is the distribution of energies in the radio radiation thermal or non-thermal (inverse thermal)? Why?

18. Why is conventional science wrong in asserting that the physical speed limit is the speed of light?

19. Why are white dwarfs, pulsars, and quasars so dense? How do we explain "dark matter" and "dark energy"?

20. What is the maximum redshift possible for a normal quasar? Why? What happens when that is reached? What do cosmic observers see?

21. Why is the explosion redshift added to the recession redshift of the quasar to get the total?

22. Derive the factor 3.5 in the excess redshift factor.

23. What's an N-type galaxy? What is a Serfert galaxy?

24. Why does Larson often refer to astronomers Arp and Hoyle?

25. What's going on in a Class II quasar? How is it different from a Class I quasar?

26. Approximately how long is a star on the main sequence? How long does a white dwarf exist? How long does a quasar exist? How long does a pulsar exist?

27. True or false: the greater the speed of the quasar, as measured by the redshift, the less spatial distance it travels, until it reaches the point where the rate of change of spatial location is zero!

28. How would you explain multiple shells of some extragalactic supernovae?

29. Does the Crab Nebula represent a Type I or Type II supernova? Why?

30. Why is the radiation from a pulsar intermittent?

31. Why do the periods of the pulsar radiation increase with pulsar age?

Have fun.

Regards,
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