SAMPLE TEST 2 QUESTIONS
Physics 2022

1. A star has an apparent magnitude of +5.6 and a distance of 18 pc. What is its absolute magnitude, M?

a. +2.7
b. +1.4
c. -0.9
d. +4.3
e. +2.1

2. The spectral type of Star 1 is A8 and that of star 2 is F0. From this information, we know with certainty that Star 1 is

a. intrinsically brighter than Star 2
b. hotter than Star 2
c. cooler than Star 2
d. intrinsically fainter than Star 2
e. larger than Star 2

3. The star Procyon has a parallax of 0.287 arcsec and a proper motion of 1.25 arcsec/yr. What is the tangential velocity of Procyon?

a. 21 km/s
b. 68 km/s
c. 1.7 km/s
d. 16 km/s
e. 4.3 km/s

4. A star at a distance of 80 pc will have a parallax of

a. 0.0125 arcminute
b. 80 arcseconds
c. 0.0125 arcsecond
d. 0.001125 arcsecond
e. 1/80 degree

5. If two stars differ by two magnitudes, what is the ratio of their brightness?

a. 2.5
b. 0.1
c. 2.0
d. 10
e. 6.3

6. The ratio of masses of a binary star is 3:1 and the sum of the masses from Kepler's 3rd Law is 12 solar masses. The individual masses are

a. 12 and 1 solar masses
b. 3 and 12 solar masses
c. 9 and 3 solar masses
d. 12 and 36 solar masses
e. 4 and 12 solar masses

7. What kind of stars are found scattered across the top of the HR Diagram?

a. main sequence stars
b. white dwarfs
c. supergiants
d. giants
e. subdwarfs

8. Compared to a star in the middle of the HR diagram, a star in the lower left part is

a. smaller
b. cooler
c. brighter
d. nearer
e. larger

9. What proportion of visible stars in the nighttime sky are binary or multiple-star systems?

a. about 1%
b. about 10%
c. nearly 50%
d. about 100%
e. only about 1 out of every 1000

10. If the Earth's orbit was shrunk to 0.8 AU, what would its period now be?

a. 1.0 year
b. 0.8 year
c. 0.51 year
d. 0.72 year
e. 0.86 year

ANSWERS

1.	d	6.	c
2.	b	7.	c
3.	a	8.	a
4.	c	9.	c
5.	e	10.	d