

## ASTRONOMY QUIZ NUMBER 11

1. Suppose you measure the parallax of a star and find 0.1 arcsecond. The distance to this star is
  - A) 10 light-years
  - B) 10 parsecs
  - C) 0.1 light-year
  - D) 0.1 parsec
  
2. A star is moving toward Earth with a radial velocity of  $-40$  km/s. Its absorption line spectrum is
  - A) blue-shifted
  - B) red-shifted

## ASTRONOMY QUIZ NUMBER 12

1. Which of the following correctly states the luminosity-distance formula?

A)  $Luminosity = Brightness / (4\pi \text{ Distance}^2)$

B)  $Brightness = Luminosity / (4\pi \text{ Distance}^2)$

2. Which one of the following stellar properties is NOT an intrinsic property?

A) mass

B) brightness

C) chemical composition

D) radius

## ASTRONOMY QUIZ NUMBER 13

1. TRUE or FALSE: A white-dwarf star is more massive than a red-giant star.

2. The logarithm of 1000 is

A)  $-3$

B)  $-2$

C)  $+2$

D)  $+3$

## ASTRONOMY QUIZ NUMBER 14

1. The star spectral sequence in order of decreasing surface temperature is

A) O F B A G M K

B) O B A F G M K

C) O B A F G K M

D) M K G F A B O

2. Which of the following statements about apparent and absolute magnitudes is always TRUE?

A) A star with apparent magnitude  $(-1)$  is brighter than one with apparent magnitude  $(-2)$ .

B) A star with apparent magnitude  $(-2)$  is brighter than one with absolute magnitude  $(-1)$ .

C) A star with apparent magnitude  $(-1)$  is brighter than one with apparent magnitude  $(+1)$ .

## ASTRONOMY QUIZ NUMBER 15

1. Which group falls below the Main Sequence on the Hertzsprung-Russell (HR) diagram?
  - A) Supergiant
  - B) Giant
  - C) White Dwarf
  
2. On a Hertzsprung-Russell (HR) diagram, where on the Main Sequence would we find stars that have the greatest mass?
  - A) upper left
  - B) lower right
  - C) center

## ASTRONOMY QUIZ NUMBER 16

1. On the Hertzsprung-Russell (HR) diagram, what spectral type belongs to stars on the Main Sequence that have the longest MS lifetime?

A) O-type stars

B) A-type stars

C) G-type stars

D) M-type stars

2. On the Hertzsprung-Russell (HR) diagram, what spectral type belongs to stars on the Main Sequence that have the smallest mass?

A) O-type stars

B) A-type stars

C) G-type stars

D) M-type stars

## ASTRONOMY QUIZ NUMBER 17

1. As a one-solar-mass **protostar** approaches the Main Sequence,
  - A) its surface temperature and luminosity increase.
  - B) its surface temperature increases and its luminosity decreases.
  - C) its surface temperature decreases and its luminosity increases.
  - D) its surface temperature and luminosity decrease.
  - E) its surface temperature and luminosity remain the same.
  
2. When does a protostar become a Main-Sequence star?
  - A) when the core temperature of the protostar reaches 1 million degrees K
  - B) the instant when hydrogen fusion begins in its core
  - C) when the rate of hydrogen fusion within its core is high enough to sustain a gravitational equilibrium
  - D) when hydrogen fusion is occurring throughout the star's interior

## ASTRONOMY QUIZ NUMBER 18

1. The ultimate fate of our Sun is to
  - A) become a rapidly spinning neutron star.
  - B) explode as a supernova.
  - C) become a white dwarf that will slowly cool with time.
  - D) become a black hole.
  
2. After a supernova explosion, the remains of the stellar core
  - A) may be either a neutron star or a black hole
  - B) will always be a neutron star
  - C) will always be a black hole
  - D) may be either a white dwarf, a neutron star, or a black hole.

## ASTRONOMY QUIZ NUMBER 19

1. What happens when a star exhausts its core hydrogen supply?
  - A) Its core contracts, but its outer layers expand so that the star becomes bigger and brighter.
  - B) It contracts, becoming smaller and dimmer.
  - C) It contracts, becoming hotter and brighter.
  - D) It expands, becoming bigger but dimmer.
  - E) Its core contracts, but its outer layers expand so that the star becomes bigger but cooler and therefore its luminosity stays the same.
  
2. What type of star is our Sun?
  - A) low-mass star
  - B) high-mass star

## ASTRONOMY QUIZ NUMBER 20

1. Which of the following sequences correctly describes the stages of life for a low-mass star?

- A) red giant, protostar, main-sequence, white dwarf
- B) white dwarf, main-sequence, red giant, protostar
- C) protostar, main-sequence, white dwarf, red giant
- D) protostar, main-sequence, red giant, white dwarf

2. What is a pulsar?

- A) a rapidly rotating white dwarf with a strong magnetic field
- B) a rapidly rotating neutron star with a strong magnetic field
- C) a rapidly rotating black hole with a strong magnetic field

## ASTRONOMY QUIZ NUMBER 21

1. How did Edwin Hubble measure the distance to the Andromeda Galaxy?

- A) He measured stellar parallax
- B) He used spectroscopic parallax
- C) He applied the period-luminosity relation of Cepheid variables
- D) He deduced from its redshift

2. What is a STANDARD CANDLE?

- A) an object for which we are likely to know the true luminosity
- B) an object for which we can easily measure the apparent brightness
- C) a class of objects in astronomy that all have exactly the same luminosity
- D) any star for which we know the exact apparent brightness