

NAME: _____

THIRD EXAM
APAS 1110 SECTION 001
December 4, 2000

DO ALL 25 PROBLEMS.

MARK YOUR ANSWERS ON THE SCANTRON AND TURN IT IN. YOU MAY KEEP THE ORIGINAL EXAM.

$$\begin{array}{llll} c=3 \times 10^{10} & G=6.7 \times 10^{-8} & h=6.6 \times 10^{-27} & \sigma=5.7 \times 10^{-5} \\ 1 \text{ pc}=3 \times 10^{18} \text{ cm} & 1 \text{ AU}=1.5 \times 10^{13} \text{ cm} & M_{\odot}=2 \times 10^{33} \text{ g} & R_{\odot}=7 \times 10^{10} \text{ cm} \\ In = c & E = hn & L = sAT^4 & F=ma & IT = x^7 & x=vt & v=at \\ P = \frac{2p}{v} & P = 2p \sqrt{\frac{r^3}{GM}} & v = \sqrt{\frac{2GM}{r}} & \frac{v}{c} = \frac{dl}{I_0} & R = \frac{2GM}{c^2} \end{array}$$

MULTIPLE CHOICE (4 points each)

- _____ 1. The solar wind emerges from:
a) solar core b) sunspots c) coronal arcs d) coronal holes
- _____ 2. Which planet's spin axis is tilted over 98 degrees?
a) Venus b) Mars c) Uranus d) Neptune e) Pluto
- _____ 3. A torus of hot gas surrounds which planet?
a) Venus b) Jupiter c) Pluto d) Earth e) Saturn
- _____ 4. The sun's energy comes from:
a) fusion of hydrogen into helium
b) fusion of helium into hydrogen
c) fission of hydrogen into helium
d) fission of helium into hydrogen
- _____ 5. You are standing beside a methane ocean. There is little to see because there is smog in all directions. Where are you?
a) Venus b) Earth c) Mars d) Titan e) Ganymede
- _____ 6. Cassini is a NASA mission to which planet?
a) Venus b) Mars c) Jupiter d) Saturn e) Pluto
- _____ 8. How many moons does Venus have?
a) 0 b) 1 c) 2 d) 3 e) 12

- _____ 9. Which planet is brilliant blue, has white clouds, and a Great Dark Spot?
a) Earth b) Jupiter c) Saturn d) Neptune e) Pluto
- _____ 10. Which of these planets has no known ring system?
a) Jupiter b) Saturn c) Uranus d) Neptune e) Pluto
- _____ 11. What is the most common element in the atmosphere of a gas giant?
a) hydrogen b) helium c) nitrogen d) oxygen e) methane
- _____ 12. What gas gives the bluish appearance to some of the gas giants?
a) hydrogen b) helium c) nitrogen d) oxygen e) methane
- _____ 13. The cloud from which the solar system formed was composed principally of:
a) iron and nickel
b) aluminum and oxygen
c) hydrogen and helium
d) carbon dioxide
- _____ 14. The Sun reaches a peak of activity every:
a) year b) 25 days c) 100,000 years d) 11 years
- _____ 15. The temperature of the solar corona is:
a) 270 K b) 5500 K c) ten thousand K d) two million K
- _____ 16. The temperature at the core of the Sun is:
a) 5500 K b) 250,000 K c) 15,000,000 K d) 237,000,000 K
- _____ 17. The temperature of the solar photosphere is:
a) 270 K b) 5500 K c) 10,000 K d) 2,000,000 K
- _____ 18. The sunspot cycle can affect:
a) the Earth's weather b) the solar corona c) the solar wind d) all of the above
e) none of the above
- _____ 19. What percentage of the mass of the Solar System resides in the Sun?
a) 50% b) 90% c) 95% d) 99% e) 99.9%
- _____ 20. The surface of Venus is so hot primarily because:
a) Venus is so close to the Sun
b) the infrared radiation cannot escape
c) Venus does not rotate
d) Venus is heated by volcanoes
e) the sunlight cannot reach the surface

- _____ 21. The primary constituent of Titan's atmosphere is:
a) oxygen b) carbon dioxide c) nitrogen d) methane
- _____ 22. Which body is the most volcanically active body in the solar system?
a) Mercury b) Venus c) Earth d) Saturn e) Io
- _____ 23. Cassini's Division is:
a) a giant canyon on Venus b) a gap in the rings of Saturn c) a resonance of the Jovian moons d) the place occupied by the asteroids e) a broken moon of Neptune
- _____ 24. The white clouds on Neptune are made of:
a) methane ice b) water ice c) steam d) ammonia e) ethylene
- _____ 25. The great red spot of Jupiter is caused by:
a) a concentration of iron
b) a cometary impact
c) a persistent storm
d) a hidden continent
e) swamp gas

Answers: 1d, 2c, 3b, 4a, 5d, 6d, 8a, 9d, 10e, 11a, 12e, 13c, 14d, 15d, 16c, 17b, 18d, 19e
20b, 21c, 22e, 23b, 24a, 25c