

Name \_\_\_\_\_

ASTRONOMY Review Questions - Ch. 11-13

**Ch. 11-13 Jovian Moons and Rings**

1. Which planet has the most massive and bright ring system? \_\_\_\_\_
2. Although it is not the most dense moon around Jupiter, \_\_\_\_\_ is the largest of the Galilean satellites.  
(a) Callisto      (b) Io      (c) Ganymede      (d) Europa      (e) Adrastea
3. Of the two Galilean Moons with large amounts of liquid water, this one has the water closest to the surface.  
(a) Callisto      (b) Io      (c) Ganymede      (d) Europa      (e) Adrastea
4. The brightest parts of planetary ring systems are found within the planet's \_\_\_\_\_  
(a) Roche limit      (b) innermost moon's orbit      (c) auroras      (d) atmospheric haze  
(e) belts and zones
5. T or F. The largest gap (division) in the rings of Saturn is caused by an orbital resonance with Mimas.
6. T or F The majority of the Moons in the mnemonic MET DR THIP are tidally interlocked with Saturn.
7. T or F All but the "IP" in the Moons of the mnemonic MET DR THIP have coplanar orbits (within 2 degrees).
8. Which Moon is like a two-toned walnut?  
(a) Mimas      (b) Tethys      (c) Ganymede      (d) Iapetus      (e) belts and zones
9. The moon Daphnis was found by Cassini in a feature called the \_\_\_\_\_.  
(a) Cassini's Division      (b) G-ring      (c) F-ring      (d) Keeler gap      (e) D ring
10. The moon with chaotic dynamics was called \_\_\_\_\_.  
(a) Rhea      (b) Hyperion      (c) Iapetus      (d) Telesto      (e) Titan
11. Which Saturnian ring feature appears "braided" or "ropey" and is accompanied by Pandora and Prometheus?  
(a) Cassini's Division      (b) the G-ring      (c) the F-ring  
(d) the E-ring      (e) the Encke gap

12. Triton's orbit is unusual because it is backward, or \_\_\_\_\_, and will spiral in toward Neptune.
13. The dark streaks on the moon \_\_\_\_\_ are thought to be caused by Nitrogen geysers.
14. Three rings around Neptune are named after the \_\_\_\_\_ of Neptune.
15. T or F. Neptune has no dynamically regular moons.
16. What does the "P" stand for in MET DR THIP?
17. What does the "H" stand for in MET DR THIP?
18. Which big moon of Saturn has long been the most promising as a home for life? \_\_\_\_\_
19. A good time to find new moons around Saturn is during a \_\_\_\_\_ – \_\_\_\_\_ crossing every  $\sim 15$  years.
20. Which moon of Jupiter is the most promising as a home for life? \_\_\_\_\_
21. Which phenomenon has NOT yet been observed amongst the moons of Saturn?
  - (a) vulcanism supplying ring particles
  - (b) moons residing in Lagrangian points
  - (c) two moon's trading orbits
  - (d) small moons shepherding ring particles
  - (e) medium-size moons colliding periodically
22. The inventor who first understood the rings of Saturn to be orbiting particles and also discovered Titan was \_\_\_\_\_
  - (a) John Locke
  - (b) Rene Descartes
  - (c) Anton Lee van Hoek
  - (d) Giovanni Cassini
  - (e) Christian Huygens
23. The observer who discovered the largest "gap" in the rings of Saturn was \_\_\_\_\_
  - (a) John Locke
  - (b) Rene Descartes
  - (c) Anton Lee van Hoek
  - (d) Giovanni Cassini
  - (e) Christian Huygens
24. Shoemaker-Levy 9 was a \_\_\_\_\_.
  - (a) comet
  - (b) space mission
  - (c) asteroid
  - (d) Jovian moon
25. T or F. The largest gap in the rings of Saturn is caused by the largest moon of Saturn.
26. T or F. Titan has a more opaque and thick (deep) atmosphere than Earth.
27. T or F. While most large moons orbit counterclockwise in their planet's equatorial plane, the smaller moons often show inclined and/or retrograde orbits, suggesting capture.
28. T or F. Resonances never stabilize an orbit, they only eject bodies from certain orbits.