

XF.0a

PHYS-1060 (1) (Kaldon-40837)

WMU - Fall 2008

Final Exam - 300,000 points

1060

Name _____

Section: 1a 1b 1c 1d 1e 1f

A to D E to H I to L M to P Q to S T to Z

Rev. 12/04/08 Th.4

Do Not Open This Test Until Told To Do So

**Select the Answer Which BEST Completes the Statement (30 questions – 5,000 points each)
Unless Stated Otherwise, All Observational Questions Are From West Michigan**

Bubble Sheets – Fill in Your NAME

Use Your 5-digit PID Number Instead of Your Student ID Number (Fill in at RIGHT)

FINAL EXAM [FORM - A]

PHYS-1060 (KALDON-1)

FALL 2008

WMU

Happy End of 2008!

Physics 1060 / Sample Final Exam [Form-A]

Fall 2008

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Post-Thanksgiving Food For Thought? (300,000 points) Multiple-Guess-Fill-In-The-Bubbles

Select the Best Answer from the choices given:

- 1.) Halo stars orbit at angles to the main galactic disk, the risk of our star getting hit by one...
A – is nearly certain at some point because of the sheer number of halo stars.
B – is negligible due to the vast distances between stars.
C – is more of a problem than having a supernova closer than 100 LY.
D – means our solar system might get ejected from the Milky Way.
E – None of the above
- 2.) Halo stars are all small stars because...
A – they are old.
B – they are young.
C – they are metal poor.
D – they are metal rich.
E – None of the above
- 3.) The Milky Way began as one or more...
A – protogalaxies.
B – protostars.
C – planetismals.
D – All of the above.
E – None of the above
- 4.) The “bob-up-and-down” carousel motion of the disk stars in the galaxy is caused by...
A – thermal vibrations from the halo.
B – thermal vibrations from the disk.
C – gravitational attraction from the halo.
D – gravitational attraction from the disk.
E – None of the above
- 5.) Elliptical galaxies can be larger because they...
A – may have consumed other galaxies.
B – have older stars.
C – have lots of very large bright stars.
D – All of the above.
E – None of the above
- 6.) Elliptical galaxies are redder than most spiral galaxies because they...
A – may have consumed other galaxies.
B – have older stars.
C – have lots of very large bright stars.
D – All of the above.
E – None of the above
- 7.) An Irregular Galaxy is a...
A – spiral galaxy.
B – barred spiral galaxy.
C – elliptical galaxy.
D – All of the above.
E – None of the above
- 8.) The Hubble classification scheme would include...
A – E3, Sa, SBc.
B – O, A, G.
C – giant, supergiant, white dwarf.
D – globular cluster, open cluster.
E – None of the above
- 9.) Some of the things found in interstellar gas clouds include...
A – water.
B – Coke Zero.
C – Valvoline.
D – All of the above.
E – None of the above
- 10.) Astronomers studying the Star-Gas-Star cycle rely on information in the _____ spectrum.
A – radio, microwave and infrared.
B – visible.
C – UV, X-ray and gamma ray.
D – All of the above.
E – None of the above
- 11.) Wolf-Rayet stars thought to be up to 200 solar masses in the Carina Nebula have been shown by the HST to be actually...
A – the largest and brightest single stars ever found.
B – massive stars with black hole cores.

C – made up of at least three massive stars, not one single.
 D – small globular clusters.
 E – None of the above

12.) The Canis Major dwarf galaxy, the closest known galaxy to the Milky Way at 25,000 LY away, was only recently discovered because...
 A – dwarf galaxies were created only in the last few years.
 B – it lies in the observational shadow of the galactic center.
 C – it was only recently expelled from the Milky Way galaxy.
 D – it's really hard to measure distances to nearby galaxies.
 E – None of the above

13.) Population II stars are...
 A – metal poor.
 B – live in the halo and bulge.
 C – old and small.
 D – All of the above.
 E – None of the above

14.) Astronomers have been building large telescopes in Chile because...
 A – there are high mountains with clear air.
 B – you can build matched twin telescopes in Chile and, say, Mauna Kea, Hawaii.
 C – Chile is in the Southern Hemisphere.
 D – All of the above.
 E – None of the above

15.) Momentum is...
 A – mass times gravity.
 B – mass times speed.
 C – mass times acceleration.
 D – mass times luminosity.
 E – None of the above

16.) The only way to change your momentum is...
 A – to have speed.
 B – to have velocity.

C – to have time.
 D – to have a force.
 E – None of the above

17.) The Pleiades, with its several spectral type B stars visible to the naked eye, could be described as...
 A – as asterism.
 B – an open star cluster.
 C – relatively young compared to a globular cluster.
 D – All of the above.
 E – None of the above

18.) Star B appears to be 100 times dimmer than Star A. Star A has an apparent visual magnitude of 5.0. The apparent visual magnitude of Star B would be...
 A – -5.0 B – 0.0 C – +5.0
 D – +10.0 E – None of the above

19.) There are many more barred spiral galaxies than unbarred. Further, it has been suggested in class that...
 A – the bar might be failed, stub spiral arms.
 B – the bar might be an elliptical galaxy swallowed by the spiral galaxy.
 C – the bar might be a temporary alignment of stars as the spiral galaxy rotates.
 D – All of the above.
 E – None of the above

20.) Star A has twice the angular size of Star B in a particular telescope. Therefore...
 A – Star A is twice the actual size of Star B.
 B – Star A is four times the actual size of Star B.
 C – Star A is half the actual size of Star B.
 D – Star A is one-quarter the actual size of Star B.
 E – None of the above

21.) Population I stars are...
 A – metal poor.
 B – live in the halo and bulge.
 C – old and small.
 D – All of the above.
 E – None of the above

22.) An Element is...
 A – a neutral object with equal numbers of electrons and protons.
 B – a charged atomic system with either extra electrons (negative ion) or missing electrons (positive ion).
 C – atoms with the same number of protons (Z = atomic number).
 D – same Z, but different number of neutrons (N) (atomic mass $A \sim Z + N$).
 E – None of the above

23.) Faint, low-mass brown dwarf stars have recently been observed in the Pleiades, which is not so unusual considering that...
 A – there should be lots of brown dwarfs.
 B – the Pleiades are only 440 LY away, so high powered telescopes can observe such faint objects.
 C – it's a stellar nursery, so there are lots of things condensed out of the gas clouds.
 D – All of the above.
 E – None of the above

24.) The Pleiades are 440 LY away. The brightest star in the Pleiades is Alcyone, with an apparent magnitude of 2.86. It is spectral type B7 III. This means that Alcyone is ...
 A – a main sequence star.
 B – a supergiant.
 C – a giant.
 D – a very old star.
 E – None of the above

25.) The distance to solar system objects can be measured by...
 A – radar ranging.
 B – parallax.
 C – Cepheid variable stars.
 D – red shift.
 E – None of the above

26.) The distance to nearby galaxies can be estimated by measuring...

A – radar ranging.
 B – parallax.
 C – Cepheid variable stars.
 D – red shift.
 E – None of the above

27.) The distance to distant galaxies can be estimated by measuring...
 A – radar ranging.
 B – parallax.
 C – Cepheid variable stars.
 D – red shift.
 E – None of the above

28.) Most galaxies are _____ old.
 A – 10 million years
 B – 111 million years
 C – 1.2 billion years
 D – 13 billion years
 E – None of the above

29.) The Planck Era refers to...
 A – when astronomers built telescopes out of wood.
 B – when nearly all the protons were used up annihilating all the anti-protons.
 C – the first 10^{-43} seconds of the Universe.
 D – when galaxies started condensing.
 E – None of the above

30.) Evidence for the Big Bang includes...
 A – the suggestion that "running the expanding universe backwards" would bring it to a point.
 B – actual helium content of the universe matches the prediction of helium creation from the era of nucleosynthesis.
 C – detection of the cosmic microwave background radiation.
 D – All of the above.
 E – None of the above