Karthik Raju

Lightning Round

#1 Earth Science *Multiple Choice* Which of the Following scales measures the intensity of an earthquake as a result of the destruction wrought upon the surroundings such as building damage and was invested in 1902?

W) Richiter Scale

X) Modified Mercalli Intesity scale

Y) Body Wave magnitude scale

Z) Enhanced Fujita scale

Answers: X) Modified Mercalli Intensity scale

#2 Earth Science *Short Answer* Name all of the 4 following categories that describe a rock’s texture

1. Fine-grained
2. Coarse-grained
3. Porphytric
4. Glassy

Answer: I, II, III, and IV

#3 Earth Science *Multiple Choice* Which front would a meteorologist most indicate rough or violent weather with?

W) occluded front

X) Stationary Front

Y) Cold Front

Z) Warm Front

Answer: W) occluded front

#4 Astronomy *Short Answer* Uranus’s innermost moon, Miranda, possesses oval patterns of grooves that result from internal heat and convection called what?

Answer: Ovoids

#5 Astronomy *Short Answer* The Sun is now in the middle part of the H-R Diagram on a line called the Main-Sequence. After sometime, when the sun has already passed the stage of red giant and disperses its out layers in the form of a planetary nebula, what corner of the H-R Diagram will it be in?

W) Upper right

X) Lower right

Y) Upper left

Z) Lower Left

Answer: Z) Lower Left

#6 Earth Science *Short Answer* Which of the following is true about Meanders?

I) The water on the outside of the curve Run’s faster than the water on the inside of the curve

II) The water on the outside of the curve is slower than the water on the inside of the curve

III) Meanders usually erode adjacent banks faster than a straight-running river

IV) The erosion that occurs part of meanders accumulate along bends and eventually slow channel down

Answer: I, III, IV

#7 Earth Science *Short Answer* A highway is built along hills. To make the highway more flat, the builder blasts his way through rock to allow passage of a highway that is more level. When the highway is open, you are passing a hill that was formed through the convergence of two parts of the lithosphere. You see its interior rock exposed and notice that the rock have folded up coming in from both sides, forming a peak, and the adjacent rock has formed troughs. Name the two features that you see?

Answer: Anticlines and Synclines

#8 Astronomy *Multiple Choice* Which of the following clusters is an open cluster, has a Japanese name that is also the name of a car, and is nicknamed The Seven Sisters?

W) Hyades

X) Beehive cluster

Y) Pleiades

Z) Omega Centauri

Answer: Y) Pleiades

#9 Earth science *Multiple Choice* Which Law states that all sediments are laid down flat on the surface originally unless acted upon by an outside factor?

W) Darcy’s law

X) Cross-cut Relationship Law

Y) Law of original horizontality

Z) Law of Superposition

Answer: Y) Law of original horizontality

#10 Astronomy *Multiple Choice* When a solar system forms and dust forms a disk, which of the following is true about its angular momentum?

W) The angular momentum increases

X) The angular momentum decreases

Y) The conservation of angular momentum causes the speed of the disk to decrease

Z) The conservation of angular momentum causes the speed of the disk to increase

Answer: Z) The conservation of angular momentum causes the speed of the disk to increase

#11 Astronomy *Multiple Choice* How many protons does the proton-proton chain need first to make a single helium atom?

W) 4

X) 5

Y) 6

Z) 7

Answer: y) 6

#12 Earth Science Short Answer What is the name of the effect that pulls down the water table due to the extraction of water of a well? This effect decreases as the distance from the well increases.

Answer: drawback

#13 Astronomy Multiple Choice Which of the following types of galaxies has active nuclei, lack radio lobes, have unusual bright, tiny cores, are powerful sources of infrared radiation, and fluctuate into brightness?

W) head-tail galaxies

X) double-lobed radio galaxies

Y) Seyfert galaxies

Z) single-lobed radio galaxies

Answer: Y) Seyfert galaxies

#14 Earth Science Multiple Choice One day, God decided to pour water into two dry channels. The have exactly the same dimensions and experience similar weathers. The next day, one river was lower than the other river. This is best explained by what property of the soil?

W) infiltration level

X) Capacity

Y) Soil Profile

Z) competence

Answer: W) infiltration level

#15 Astronomy Multiple Choice Which hypothesis states that the moon formed through to accretion of the debris that resulted from the collision of a huge planetesimals with Earth?

W) fission hypothesis

X) co-accretion hypothesis

Y) capture hypothesis

Z) large-impact hypothesis

#16 Astronomy *Short Answer* Which of the following 4 choices (I, II, III, and IV) best match the definitions a, b, and c pertaining to Mercury’s surface?

1. Greatly curved cliffs that formed when the surface cooled and shrank
2. Regions containing craters larger than 15km in diameter
3. Places with relatively few craters but are believed to be areas of solidified lava flow
4. Smooth plains
5. Intercrater plains
6. Lobate scarps
7. Sub-solar point

Asnwer: a. III b. II c. I

#17 Astronomy Multiple Choice What type of volcano is the largest volcano in the solar system?

W) composite cone

X) cinder cone

Y) stratovolcano

Z) Shield Volcano

Answer: Z) Shield Volcano

#18 Astronomy Multiple ChoiceThe weight of Mauna Loa is so great that the seafloor cannot support it and a moat-shaped depression is created. The fact that Olympus Mons is 2.5 times higher than Mauna Loa but exhibits no depression upon the Martian crust most directly tells us what?

W) Olympus Mons is less dense than Mauna Loa

X) The gravity on Mars is not as strong as the gravity on Earth

Y) Martian crust is stronger than Earth’s

Z) Other factors lead to the depression of Mauna Loa on the seafloor

Answer: Y) Martian Crust is stronger than Earth’s

#19 Astronomy Short Answer What phenomena that came from the sun is most responsible for the barren appearance of the once vibrant surface of Mars?

Answer: Solar Wind

#20 Earth Science Which of the following drainage patterns displays distributaries that are parallel to each other and perpendicular to the main channel?

W) Dendritic

X) trellis

Y) rectangular

Z) radial

Answer: W) Dendritic

#21 Astronomy Multiple Choice You and your buddy are in a spaceship and are surveying a black hole just safe from the event horizon. Suddenly, you feel curious so you make your buddy hold a blue clock and push him out the door, towards the black hole. As your friend nears the event horizon to his doom, what two aspects will you notice about the clock in his hand?

W) Time will slow and become violet

X) The clock will speed up and become green

Y) The clock will slow down and become green

Z) The clock will speed up and more violet

Answer: Y) The clock will slow down and become green

# 22 Earth Science Short Answer What is the name for the mound of sediment that is abundant in the Death Valley and created by the steep change in gradient of a stream?

Answer: Alluvial fans

#23 Astronomy Short Answer What is the name of the Diagram where the sunspot activity of a sun is plotted over time? (Hint: this diagram takes on the shape of butterfly wings)

Answer: Maunder Butterfly diagram

#24 Earth Science Short Answer Which of the following are solid ejecta that are directly sent out of a volcano?

1. welded tuff
2. lapilli
3. blocks
4. bombs

Answer: II, III, IV

#25 Astronomy Multiple Choice What is the difference between Type 1 supernovas and Type II supernovas?

W) Type I supernovas have hydrogen in their spectrum when Type IIs don’t

X) Type I supernovas are brighter than Type IIs

Y) Type II supernovas’ spectrums contain the spectral lines of heavy elements while Type I supernovas don’t

Z) Type II supernovas contain hydrogen while Type I supernovas do not

Answer: Z) Type II supernovas contain hydrogen while Type I supernovas do not