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12/5/12

Science Bowl Questions

Lightning Round

Varied

1. MATH; *Short Answer:* There is a test in 20 days. Today is Friday. What day is the test?

ANSWER: Thursday

1. MATH; *Short Answer:* In a standard deck of 52 cards, what is the probability of drawing a face card, replacing it, and then drawing a spade with a number less than 7, not including the ace of spades? Give you answer in a fraction in simplest form.

ANSWER: 15/10816

1. MATH; *Multiple Choice:* Which of the following is the reference angle for the angle 1667o?

W. 27o

X. 37o

Y. 47o

Z. 57o

ANSWER: Y

1. MATH; *Multiple Choice:* Which of the following angles is not coterminal with the angle 37o?

W. -333o

X. 397o

Y. 757o

Z. 1117o

ANSWER: W

1. MATH; *Short Answer:* What is antilog100 + antilog10?

ANSWER: 3

1. BIOLOGY; *Multiple Choice:* Which of the following is not a phase of meiosis?

W. Prophase I

X. Metaphase I

Y. Anaphase II

Z. Cytophase II

ANSWER: Z

1. BIOLOGY; *Multiple Choice:* Which of the following is not a cause of genetic variation?

W. Independent assortment of chromosomes

X. Mitosis

Y. Crossing over

Z. Random Fertilization

ANSWER: X

1. BIOLOGY: *Short Answer:* Suppose Y is the dominant allele in pea plants, producing yellow seeds, and y is the recessive allele, producing green seeds. R is another dominant allele, producing round seeds, and r is another recessive allele, producing wrinkled seeds. If two true breeding pea plants with the genotypes YYRR and yyrr are crossed, and the next generation crossed, what is the probability that a pea plant in the F2 generation will be green, and wrinkled?

ANSWER: 1/16

1. BIOLOGY: *Short Answer:* The phonotype of heterozygotes is intermediate between the phenotypes of individuals homozygous for either allele.This shows what type of dominance?

ANSWER: Incomplete dominance

1. BIOLOGY: *Pseudo-Multiple Choice:* Denote by name or number, which of the following four are recessively inherited disorders?
2. Huntington’s disease
3. Cystic Fibrosis
4. Achondroplasia
5. Sickle-cell disease.

ANSWER: 2 and 4.

1. CHEMISTRY: *Multiple Choice:* Suppose you have four beakers containing liquids with the vapor pressures 100 torr, 200 torr, 300 torr, and 400 torr. If you slowly reduce the pressure above the beakers, which what is the vapor pressure of the liquid, in torr that will boil first?

W. 100

X. 200

Y. 300

Z. 400

ANSWER: Z

1. CHEMISTRY: *Short Answer:* What term describes a liquid’s tendency to evaporate?

ANSWER: Volatility

1. CHEMISTRY: *Short Answer:* Who was the first chemist to create a noble gas compound?

ANSWER: Neil Bartlett

1. CHEMISTRY: *Multiple Choice;* Atoms in a clathrate molecule are held together by what bond?

W. van der Walls forces

X. ionic bonds

Y. covalent bonds

Z. metallic bonds

ANSWER: W

1. CHEMISTRY: *Short Answer:* The Radium Decay Series begins with what element?

ANSWER: Uranium

1. EARTH AND SPACE SCIENCE: *Pseudo Multiple Choice;* Denote by name or number, which of the following four are types of weather fronts?
2. Cold fronts
3. Warm fronts
4. Stationary fronts
5. Occluded fronts

ANSWER: All of them

1. EARTH AND SPACE SCIENCE: *Short Answer:* What is the minimum speed, in mph a tornado must be?

ANSWER: 40

1. EARTH AND SPACE SCIENCE: *Multiple Choice:* Which of the following best describes a continental polar air mass?

W. Hot, dry, and stable

X. Cold, dry, and stable.

Y. Cold, moist, and unstable

Z. Warm, moist, and unstable

ANSWER: X

1. EARTH AND SPACE SCIENCE; *Multiple Choice:* In which direction does the earth rotate?

W. North

X. South

Y. West

Z. East

ANSWER: Z

1. EARTH AND SPACE SCIENCE; *Short Answer:* What kind of fracture in minerals has a circular pattern, and occurs in obsidian?

ANSWER: Conchoidal fracture.

1. PHYSICS; *Short Answer:* A far-sighted person would need glasses with what kind of lens?

ANSWER: Convex

1. PHYSICS; *Multiple Choice:* A man is standing in a long train that is travelling at 50 mph, and he takes a ball, and throws it 60 mph. What is the speed of the ball, relative to the ground?

ANSWER: 10 mph

1. PHYSICS; *Short Answer:* What is the mass, in kilograms, of a ball weighing 9 newtons?

ANSWER: 0.918 kg

1. PHYSICS; *Multiple Choice:* What type of wave has a wavelength of 10-2 meters?

W. Radio waves

X. Microwaves

Y. Infrared waves

Z. Ultraviolet waves

ANSWER: X

1. PHYSICS; *Short Answer:* What is the index of refraction of a vacuum?

ANSWER: 1