NATIONAL ROUND ROBIN - 2

TOSS-UP

1. **ERSC; Multiple Choice: What is a general term for a very fine textured, fissile, sedimentary rock composed of clay, mud, and silt?**

   (W) Slate
   (X) Schist
   (Y) Arkose
   (Z) Shale

   ANSWER: Z– SHALE

BONUS

1. **ERSC; Short Answer: Fragments within larger rock masses which are older than the rock masses in which they are enclosed are called**

   ANSWER: INCLUSIONS

TOSS-UP

2. **CHEM; Multiple Choice: Alkanes with the same structural formula can have a variety of arrangements because of the**

   (W) sharing of electrons between the carbon atoms.
   (X) breaking and reforming of carbon-carbon bonds.
   (Y) possible rotation about the carbon-carbon bonds.
   (Z) changing strength of the carbon-hydrogen bonds.

   ANSWER: Y– POSSIBLE ROTATION ABOUT THE CARBON-CARBON BONDS

BONUS

2. **CHEM; Multiple Choice: Which of the allotropic forms of carbon is frequently used as a lubricant?**

   (W) graphite
   (X) diamond
   (Y) fullerenes
   (Z) alkanes

   ANSWER: W– GRAPHITE

TOSS-UP

3. COMP; Multiple Choice: The original IBM PC used which of the following Intel microprocessors?

(W) 8086
(X) 8080
(Y) 8088
(Z) 80286

ANSWER: Y– 8088

BONUS

3. COMP; Multiple Choice: In Java, how do you make class A inherit from class B?

(W) A extends B
(X) A inherits B
(Y) B expands A
(Z) B inherits A

ANSWER: W– A EXTENDS B

TOSS-UP

4. BIOL; Short Answer: What is the chemical which is the final electron acceptor in cellular respiration?

ANSWER: OXYGEN

BONUS

4. BIOL; Short Answer: In the dark reaction, carbon dioxide combines with

ANSWER: RIBULOSE DIPHOSPHATE (RuDP)

TOSS-UP

5. PHYS; Multiple Choice: In an electromagnetic wave, electric and magnetic fields oscillate

(W) at right angles to each other and to the direction of wave motion.
(X) at right angles to each other but parallel to the direction of wave motion.
(Y) parallel to each other and to the direction of wave motion.
(Z) parallel to each other but at right angles to the direction of wave motion.

ANSWER: W– AT RIGHT ANGLES TO EACH OTHER AND TO THE DIRECTION OF WAVE MOTION

BONUS

5. PHYS; Multiple Choice: A toy balloon filled with helium is attached by a string inside a vehicle. All the windows of the vehicle are closed. When the vehicle accelerates forward, which way will the balloon appear to move in the vehicle?

(W) Backward
(X) Forward
(Y) It does not move
(Z) Down

ANSWER: X– FORWARD

TOSS-UP

6. GENR; Multiple Choice: The term used to describe a reasoning from cause to effect or from theory to fact is

(W) empirical.
(X) apriori.
(Y) singular.
(Z) causal.

ANSWER: X– APRIORI

BONUS

6. GENR; Short Answer: Name the fish caught for the first time off the coast of Africa in 1938 which was thought to be extinct for millions of years.

ANSWER: COELACANTH (pron: see-luh-kanth)

TOSS-UP

7. ASTR; Multiple Choice: The measurement of the altitudes of only 3 stars at a known universal time allows the calculation of a position on earth. These measurements may be made with a

(W) meridian transit telescope.
(X) sextant.
(Y) compass.
(Z) altimeter.

ANSWER: X– SEXTANT

BONUS

7. ASTR; Multiple Choice: In the sixteenth century, Pope Gregory VIII ordered calendar reform to more precisely measure the leap year cycle. Therefore, the year 2000

(W) will be a leap year.
(X) will not be a leap year.
Y) will cause clocks to stop.
(Z) will be skipped.

ANSWER: X– WILL NOT BE A LEAP YEAR

TOSS-UP

8. CHEM; Multiple Choice: Allotropic forms of carbon include all of the following except

(W) fullerenes.
(X) graphite.
(Y) diamond.
(Z) alkanes.

ANSWER: Z– ALKANES

BONUS

8. CHEM; Multiple Choice: Structures of the same composition that differ by only bond rotations are referred to as

(W) transitions.
(X) conformations.
(Y) variants.
(Z) transformations.

ANSWER: X– CONFORMATIONS

TOSS-UP

9. BIOL; Short Answer: What is composed of stacks of thylakoids?

ANSWER: GRANA

BONUS

9. BIOL; Short Answer: Enzymes for the dark reaction of photosynthesis are located outside the grana in the

ANSWER: STROMA

TOSS-UP

10. MATH; Multiple Choice: When you treat Y as a function of X, and differentiate both sides of the equation, this is called

(W) incorrect.
(X) extrapolation differentiation.
(Y) interpolation differentiation.
(Z) implicit differentiation.

ANSWER: Z– IMPLICIT DIFFERENTIATION

BONUS

10. MATH; Multiple Choice: If F is a continuous function on the closed interval [a,b], then F attains a maximum and a minimum value on [a,b]. What is the name of this theorem?

(W) Rolle's theorem
(X) Mean Value theorem
(Y) Extreme Value theorem
(Z) Continuity theorem

ANSWER: Y– EXTREME VALUE THEOREM

TOSS-UP

11. PHYS; Multiple Choice: Lodestone has magnetic properties because it

(W) attracts materials containing iron.
(X) does not attract materials containing iron.
(Y) swings freely.
(Z) turns toward the west.

ANSWER: W– ATTRACTS MATERIALS CONTAINING IRON

BONUS

11. PHYS; Multiple Choice: The magnetic field of a magnet is strongest

(W) around its north pole.
(X) around its south pole.
(Y) in the middle of the magnet.
(Z) around both of its poles.

ANSWER: Z– AROUND BOTH OF ITS POLES

TOSS-UP

12. CHEM; Multiple Choice: In naming hydrocarbons containing halogens, the first step is to name the

(W) location of the halogen.
(X) name of the halogen.
(Y) hydrocarbon portion.
(Z) number of halogens.

ANSWER: Y– HYDROCARBON PORTION

BONUS

12. CHEM; Multiple Choice: Hydrocarbons containing halogens are generally nonpolar and consequently have

(W) low boiling temperatures.
(X) high solubility in water.
(Y) strong hydrogen bonding.
(Z) all of these

ANSWER: W– LOW BOILING TEMPERATURES

TOSS-UP

13. COMP; Multiple Choice: Which of the following is a superclass-subclass relation?

(W) Computer - Mainframe
(X) Mainframe - Computer
(Y) Computer - Pentium chip
(Z) Pentium chip - Computer

ANSWER: W– COMPUTER - MAINFRAME

BONUS

13. COMP; Multiple Choice: The Intel 80486 Microprocessor has

(W) A 16 bit Address bus and an 8 bit Data bus.
(X) A 32 bit Address bus and an 32 bit Data bus.
(Y) A 32 bit Address bus and an 16 bit Data bus.
(Z) A 16 bit Address bus and an 16 bit Data bus.

ANSWER: X-- A 32 BIT ADDRESS BUS AND AN 32 BIT DATA BUS

TOSS-UP

14. BIOL; Short Answer: The chemical difference between chlorophyll a and b is that a methyl group in chlorophyll b is replaced by what group in chlorophyll a?

ANSWER: FORMYL (-COH)

BONUS

14. BIOL; Short Answer: What is a ring of DNA present in a bacterial cell known as?

ANSWER: PLASMID

TOSS-UP

15. ASTR; Short Answer: The parallels of latitude where the sun passes overhead when it crosses the summer solstice and winter solstice are called

ANSWER: TROPICS OF CANCER AND CAPRICORN

BONUS

15. ASTR; Multiple Choice: As viewed from earth, during the moon phases from new to full, the moon grows in apparent size and is said to be in its

(W) waxing phases.
(X) waning phases.
(Y) dark phases.
(Z) light phases.

ANSWER: W– WAXING PHASES

TOSS-UP

16. PHYS; Multiple Choice: The rotating electromagnet in an electric motor is called the

(W) armature.
(X) solenoid.
(Y) commutator.
(Z) inductor.

ANSWER: W– ARMATURE

BONUS

16. PHYS; Multiple Choice: A motor can be made to run off direct current by using

(W) an armature.
(X) a solenoid.
(Y) a commutator.
(Z) an inductor.

ANSWER: Y– A COMMUTATOR

TOSS-UP

17. CHEM; Multiple Choice: Amines are found in all of the following except

(W) proteins.
(X) cocaine.
(Y) ptomaines. (pron: toe-mains)
(Z) sugars.

ANSWER: Z– SUGARS

BONUS

17. CHEM; Multiple Choice: Acetone's ability to dissolve nail polish is the result of the molecule's

(W) high density.
(X) polar portion.
(Y) nonpolar portion.
(Z) shape.

ANSWER: Y– NONPOLAR PORTION

TOSS-UP

18. ERSC; Short Answer: The most obvious feature of sedimentary rocks is their occurrence in beds or layers called

ANSWER: STRATA

BONUS

18. ERSC; Multiple Choice: What is the name for immature sandstones consisting of significant quantities of dark, very fine-grained material?

(W) Quartzites
(X) Midstones
(Y) Graywackes
(Z) Evaporates

ANSWER: Y– GRAYWACKES

TOSS-UP

19. GENR; Multiple Choice: Albert Einstein won the Nobel prize for his work in the field of

(W) photovoltaics.
(X) relativity.
(Y) time and matter.
(Z) high energy physics.

ANSWER: W– PHOTOVOLTAICS

BONUS

19. GENR; Multiple Choice: The crushed, dry sugar plant, after sugar has been extracted, can be used to manufacture ethanol fuels. It is called

(W) bakelite.
(X) bolata.
(Y) barbate.
(Z) bagasse.

ANSWER: Z– BAGASSE

TOSS-UP

20. PHYS; Multiple Choice: Which of the following devices contains a step-up transformer?

(W) Calculator
(X) Fluorescent light
(Y) Tape player
(Z) Doorbell

ANSWER: X– FLUORESCENT LIGHT

BONUS

20. PHYS; Multiple Choice: Which of the following devices contains a step-down transformer?

(W) Radio
(X) Television set
(Y) X-ray machine
(Z) Calculator

ANSWER: W– RADIO

TOSS-UP

21. BIOL; Short Answer: Genetic engineers use what kind of enzymes like a molecular knife to cut DNA strands?

ANSWER: RESTRICTIVE

BONUS

21. BIOL; Short Answer: Within one year, in what year did Rosalind Franklin demonstrate through X-ray crystallography that DNA is a double helix?

ANSWER: 1952 (ACCEPT 1951-1953)

TOSS-UP

22. CHEM; Short Answer: What temperature scale must be used when working with the ideal gas equation?

ANSWER: KELVIN

BONUS

22. CHEM; Multiple Choice: A characteristic associated with esters is the

(W) bitter taste.
(X) sour taste.
(Y) fruity odor.
(Z) high boiling temperature.

ANSWER: Y– FRUITY ODOR

TOSS-UP

23. PHYS; Short Answer: The inside walls of fluorescent bulbs are coated with substances called

ANSWER: PHOSPHORS

BONUS

23. PHYS; Multiple Choice: Permanent magnets do not contain

(W) aluminum.
(X) copper.
(Y) nickel.
(Z) cobalt.

ANSWER: X– COPPER

TOSS-UP

24. MATH; Short Answer: What is the region between two concentric circles called?

ANSWER: AN ANNULUS

BONUS

24. MATH; Multiple Choice: For the graph of the function f (x) = 1/x what does the line at x = 0 represent?

(W) circle
(X) hyperbola
(Y) vertical asymptote
(Z) horizontal asymptote

ANSWER: Y– VERTICAL ASYMPTOTE

TOSS-UP

25. BIOL; Short Answer: From which embryonic germ layer is the circulatory system derived from?

ANSWER: MESODERM

BONUS

25. BIOL; Short Answer: What animal never develops a mesoderm?

ANSWER: SPONGE OR CNIDARIA (pron: nid-are-ee-a)