**Academic Olympics**  **Preliminary Written 2015**

1. Xylem and phloem are present in ...

 A. Bryophytes B. Rodophytes C. Phaeophytes D. Chlorophytes E. Tracheophytes

2. A googol is a number followed by …

 A. 10 zeros B. 100 zeros C. 1000 zeros D. the infinity sign E. an antilogarithm

3. Which art movement attempted to represent objects and conditions as they actually appear to the senses rather

 than in an idealized way?

 A. realism B. romanticism C. neoclassicism D. expressionism E. postimpressionism

4. Who uttered these words?

 Is it true that liberty is precious – so precious that it must be rationed.

 A. Pericles B. Vladimir Lenin C. Winston Churchill D. Thomas Jefferson E. Dwight Eisenhower

5. Laurence Peter in his book. “The Peter Principle” describes the rise of individuals to their level of …

 A. intelligence B. omniscience C. magnificence D. impertinence E. incompetence

6. Which instrument records changes in heartbeat, blood pressure, and respiration?

 A. polygraph B. pictograph C. coronagraph D. seismograph E. spectrograph

7. Points that lie on a line are …

 A. parallel B. collinear C. inscribed D. equivalent E. supplementary

8. Which tribes carved massive totem poles?

 A. Hopi, Navajo B. Tlingit, Haida C. Arapaho, Crow D. Cheyenne, Sioux E. Creek, Cherokee

9. Which is an example of a boondoggle?

 A. Hoover Dam B. Golden Gate Bridge C. Hindenburg zeppelin

 D. Concorde supersonic aircraft E. National World War II Memorial

10. Which is spelled correctly?

 A. inimitble B. imitiable C. inimitable D. innimbitble E. innimaitable

11. The difference between ammonia and ammonium is one …

 A. quark B. proton C. neutron D. electron E. energy shell

12. What is the algebraic expression for the nth term in the sequence beginning with this? **4, 7, 10, 13 …**

 A. 2n/3 B. n + 3 C. 2n – 1 D. 3n + 1 E. (n squared) + 3

13. Which sculpture was created first?

 A. The Thinker B. Madonna and Child C. Great Sphinx of Giza

 D. The Ecstasy of St. Theresa E. The Winged Victory of Samothrace

14. ---- was not the ---- state admitted to the U.S.

 A. Ohio, 7th B. Alaska, 49th C. Delaware, 1st D. Colorado, 38th E. Rhode Island, 13th

15. How is “sick” use in this statement? **I feel sick.**

 A. subject B. compliment C. direct object D. indirect object E. predicate pronoun

16. Sedimentary rock is formed by two basic processes including compaction and …

 A. intrusion B. lamination C. exfoliation D. cementation E. percolation

17. if g varies inversely as j and g = 21 when j = 3, find g when j = 9

 A. 3 B. 5 C. 7 D. 9 E. 11

18. The art of tying decorative patterns of sheepshanks and bow lines is …

 A. gesso B. montage C. macramé D. decoupage E. scrimshaw

19. Which is a cruise missile?

 A. Nike B. Patriot C. Phoenix D. Tomahawk E. Sidewinder

20. Identify the tense of “had heard”

 A. future B. present C. past perfect D. past participle E. present perfect

21. The total distance traversed by a ball rolling down an inclined plane after starting from rest is

 directly proportional to the:

 A. mass of the ball B. diameter of the ball C. coefficient of friction

 D. Square of time elapsed E. cube of the angle of the plane

22. The largest possible circle is cut from a square 20 feet wide on a side. The closest estimate of the remaining area

 of the square is ---- square feet.

 A. 32 B. 46 C. 58 D. 72 E. 86

23. Who is the central figure in a painting by Emanuel Leutze of small, overloaded boats crossing the Delaware River?

 A. Mike Fink B. Samuel Clemens C. Meriwether Lewis D. Hernando De Soto E. George Washington

24. Prior to Vasco da Gama’s voyage around the coast of Africa, this trip had been successfully undertaken by the …

 A. Celts B. Greeks C. Egyptians D. Etruscans E. Phoenicians

25. The mythical phoenix …

 A. founded Rome B. was a flying horse C. arose from its own ashes

 D. ferried souls across the Styx E. has a woman’s body and a bird’s head

26. The syrinx of a bird …

 A. exudes oil B. covers the eyeball C. stores oxygen D. produces sounds E. grinds food

27. The area of a circle is obtained by multiplying the square of its diameter by …

 A. .6281 B. .7852 C. .4489 D. .9106 E. .2319

28. The Gothic art movement was centered in

 A. Japan B. Russia C. France D. Greece E. Germany

29. Which country was independent prior to 1946?

 A. Angola B. Zambia C. Algeria D. Ethiopia E. Botswana

30. Which prefix was not derived from the Greek language?

 A. cata B. meta C. hyper D. extra E. amphi

31. What derives energy from the heat of vaporization?

 A. lightning B. volcanoes C. hurricanes D. tidal waves E. earthquakes

32. A person would earn the least interest on his money if the compounding period is …

 A. daily B. weekly C. quarterly D. bimonthly E. semiannual

33. Unaccompanied four part singing that involves close chromatic harmony is …

 A. ragtime B. passion music C. spiritual music D. rhythm and blues E. barbershop music

34. Who did not explore the African continent?

 A. Gerhard Rolfe B. Richard Burton C. Hugh Clapperton

 D. James Oglethorpe E. Gustave Nachtigal

35. A series of Persian quatrains comprises …

 A. The Koran B. The Prophet C. The Rubyaiyat D. The Arabian Nights E. Lawrence of Arabia

36. Plasma, the fourth state of matter, is a gas that is highly …

 A. ionized B. purified C. rarefied D. dissipated E. crystallized

37. What is the measure of an angle whose supplement is five times the measure of its compliment?

 A. 65.5 B. 67.5 C. 69.5 D. 71.5 E. 73.5

38. Thomas Jefferson, Charles Bulfinch, Stanford White were all …

 A. muralists B. sculptors C. architects D. portraitists E. silversmiths

39. The sovereign of the U.K. during the late 20th century was Elizabeth II of the House of …

 A. York B. Tudor C. Stuart D. Orange E. Windsor

40. Identify the king of Argos who commanded the allied Greeks in the siege of Troy.

 A. Priam B. Hector C. Daedalus D. Menelaus E. Agamemnon

41. The enzymes that change starch to maltose, fats to glycerol, and proteins to amino acids are produced in the …

 A. spleen B. jejunum C. pancreas D. gallbladder E. parotid glands

42. What is the rule in this relation? **R = { (3,8), (4,11), (5,14), (7,20) }**

 A. y = 3x – 1 B. y = x + 5 C. y = 2x + 2 D. y = x squared – 2 E. y = x + x squared

43. The first American patriotic hymn was …

 A. Over There B. Hail Columbia C. God Bless America

 D. Battle Hymn of the republic E. The Stars and Stripes forever

44. What is not an objective of the Federal Reserve System’s monetary policy?

 A. economic growth B. stable price levels C. quality welfare of employment

 D. a high level of employment E. balance of international payments

45. What phrase is a foundation of the capitalist economic system?

 A. coup de gras B. laissez faire C. hors d’ oeuvre

 D. tour de France E. l’homme propose - et Dieu dispose

46. “Mitosis” refers to the …

 A. division of a cell nucleus B. release of energy in a cell C. storage of energy in a cell

 D. cellular digestion of nutrients E. passing of a liquid through a membrane

47. The approximate surface area of cylinder with a 31 cm radius and an 85 cm height is ---- square centimeters.

 A. 16,421 B. 18,728 C. 20,337 D. 22,594 E. 24,691

48. a(n) ---- has several winged eaves.

 A. pagoda B. minaret C. obelisk D. ziggurat E. campanile

49. In a vote the House of Representatives to expel a member, what is the minimum percentage of nay votes needed

 to remain in office?

 A. 15 B. 26 C. 34 D. 42 E. 51

50. The French term, “belles - letters” means …

 A. fine writing B. female author C. letters to a girl

 D. old manuscripts E. scientific literature

**Answers:**

**1. E 11. B 21. D 31. C 41. C**

**2. B 12. D 22. E 32. E 42. A**

**3. A 13. C 23. E 33. E 43. B**

**4. B 14. A 24. E 34. D 44. C**

**5. E 15. B 25. C 35. D 45. B**

**6. A 16. D 26. D 36. A 46. A**

**7. B 17. C 27. B 37. B 47. D**

**8. B 18. C 28. C 38. C 48. A**

**9. D 19. D 29. D 39. E 49. C**

**10. C 20. E 30. C 40. E 50. A**