

# Iowa State Invitational, 1994

## Director's Packet, IV

October 15, 1994

### Toss-Ups

1. Number, directive, rib, minister, factorization. Mover and meridian. For a quick ten points, what word can precede all of these to create well-known phrases?

prime

2. It is an oval structure designed for various shows and consisting of an arena surrounded by tiered seats, either built-up or using a natural slope. For ten points, name this common building of the Roman Empire.

amphitheater

3. Thrones, Dominations, Virtues, Powers, Seraphs, Cherubs and Principalities, are, according to Dionysios the Areopagite, seven of the nine kinds of what divine being?

angels

4. Built by King Suryavarman II in the 12th century, this gigantic edifice is regarded as the supreme culmination of the Khmer mountain-temple style of architecture. For ten points, what is this temple of Vishnu in Kampuchea?

Angkor Wat

5. Eventually his design for the Louvre lost to Perrault, but he remained in the favor of the papacy and continued to execute sculptures like Aeneas and Anchises, The Rape of Proserpine, Rapture of St. Theresa and the tomb of Alexander VII. For ten points, who was this 17th century sculptor?

Gianlorenzo Bernini

6. Tauons, muons, neutrinos and electrons. For ten points, what are these fermions whose name was taken from the Greek word for "light"?

leptons

7. This piece of music was a Vatican secret for centuries until Mozart heard it in 1770 at the age of 14 and transcribed it in its entirety thereby breaking the Vatican's monopoly. For ten points, what is this piece by Allegri?

Miserere

8. It is the third planet of the Rukbat system in the Sagittarius sector, a Colony world which has lost contact with Mother Earth due to attacks by an organism called the "thread". For ten points, what is this Anne McCaffrey world defended by its dragonriders?

Pern

9. The *liberum veto* which allowed any deputy of the Sejm to veto disliked legislation made governmental reform impossible for decades until it was amended to apply only to matters of diplomacy. For ten points, what is this unlucky country partitioned in 1792 immediately following its first successful reform?

Poland

10. Angst, breadth, bulb, eighth, else, fifth, gospel, liquid, mollusk, ninth, oblige, orange, sixth, sculpts, width, wolf, month and silver; for ten points, what do all of the above words lack in the English language?

rhymes

11. The starting point of all modern study of the Renaissance can be traced to the works of a single Swiss writer in the 19th century. For ten points who is this historian and art critic, author of *Civilization of the Renaissance in Italy*?

Jacob Burckhardt

12. While Geneva, Lyon, Medina del Campo, Frankfurt, Bruges [BROOGE] and Bergen-op-Zoom were extensive, the one at Champagne was the greatest of all these precursors to cities. For ten points, what are these medieval mercantile happenings?

fairs

13. It might be circle made of iron in its +2 state of ionization, or it might be a popular carnival ride. For ten points, what is it?

Ferris Wheel ("Ferrous wheel")

14. Founded by the Great Hero Mahavira in the 6th century B.C., this sect rejected the Vedas and replaced many of the Hindu gods with 24 immortal saints. Members base their life of the principle of *Ahimsa*, the sacredness of all life. For ten points, what is this south Indian sect?

jainism

15. The missing book of Aristotle's *Poetics*, stolen poison and a dour blind monk turn out to be the murderer and his tools in this medieval mystery best known for its labyrinthine library. For ten points, what is this intellectual thriller by Umberto Eco?

The Name of the Rose

16. Every pair of orbiting bodies have five of these; three are unstable, two, located 60 degrees before and after the smaller body, are stable and have been suggested as locations for space stations. For ten points, what are these points named for a French mathematician and physicist?

Lagrange points

17. Black Locust and Osage Orange are excellent in cast and durability but merely mediocre in terms of workability. This makes them good, but not perfect, materials for the practitioners of this sport, which, for ten points, is strongly free-associated with the wood of yew.

archery (Accept: bows or bow-making if answered early)

18. It lasted 460 years and was one of a few Asian Empires to attempt overseas expansion, conquering Sri Lanka, Sumatra, Java and parts of Malay under Rajendra I. For ten points, name this empire centered in deep southern India that produced Ramanuja and the Lingayats and the buildings of Cidambaram, Darasuram and Kodumbalur.

Chola empire

19. People have widely remarked that Geraldine Ferraro was a token, but this has never been said about Nancy Lord. She belonged to the first national party to put a woman on the ticket, have a Hispanic chair, have a female chair, and have several openly gay state chairs. For ten points, what is this economically conservative, socially liberal political party?

Libertarian Party

20. It grows to be about three feet tall, has large, velvety leaves, trumpet-shaped flowers, and spiny pods 1 to 2 inches in diameter that contain dark colored, kidney-shaped seeds about  $\frac{1}{4}$  inch in diameter. For ten points, what is this hallucinogenic, alkaloid-containing, poisonous plant?

jimsonweed

21. The main warring factions are currently [10-15-94] meeting in Quetta for U.N. sponsored peace talks. Khalili represents President Rabbani; other envoys are opposition

Prime Minister Hekmatyar and Pir Gailani, a moderate. For ten points, which war-torn Asian nation may be soon brought nearer to summoning a Loya Jirga and thus nearer to peace?

Afghanistan

22. This treaty stated that international disputes must be solved without resorting to force but there were a number of reservations and exceptions that made it ineffectual. For ten points, what 1928 treaty took its name from the U.S. Secretary of State and the French foreign minister of that time?

The Kellogg-Briand Treaty or Pact

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### Bonuses

1. (30 points) All college bowlers know the Mesopotamia, like Iowa, is the land between two rivers, but how much do you know about those rivers?
  - (a) (10 points) First, out of which mountains does the Tigris flow?  
Taurus Mountains
  - (b) (10 points) Second, which two rivers converge to create the Euphrates?  
Murat Nehri and Kara Su
  - (c) (10 points) Third, which river is formed by the confluence of the Tigris and the Euphrates?  
Shatt-al-Arab
2. (30 points) The Caspian Sea is by far the biggest lake in the world, but, for five points apiece, maximum of 30, can you name the second through seventh largest lakes?  
Lake Superior, Lake Victoria, Lake Aral, Lake Huron, Lake Tanganyika, and Lake Baikal
3. (25 points) This bonus should have universal appeal...I'll describe five parts of the Vatican administration, you name the unit which carries out such work for five points apiece.
  - (a) (5 points) An executive council of cardinals  
curia
  - (b) (5 points) This unit handles papal correspondence  
chancery
  - (c) (5 points) This unit drafts indulgences, absolutions, and dispensations  
datery
  - (d) (5 points) This one handles legal matters  
rota
  - (e) (5 points) This one handles financial matters

camera

4. (25 points) I'll give five pairs of approximate dates and locations, you tell me which ancient civilization flourished there, then, for five points apiece.

(a) (5 points) 2350-2230 BC; Mesopotamia and parts of Syria, Asia Minor and Iran  
Assyria

(b) (5 points) 900-396 BC; Northern Italy  
Etruscans

(c) (5 points) 3000-1100 BC; Crete  
Minoan

(d) (5 points) 800-300 BC; Caucasus  
Scythian

(e) (5 points) 3200-2360 BC; Mesopotamia  
Sumerian

5. (25 points) Which cities have the busiest airports? You'll earn five points apiece for naming each of the five cities that have one of the world's five busiest airports within their city limits.

Chicago, Atlanta, Los Angeles, Dallas/Ft. Worth, London

6. (30 points) Name the work from some quotes; 30-20-10.

(a) (30) It is "A common failing of men not to take account of tempests during fair weather."

(b) (20) "Imitate the fox and the lion for the lion cannot protect himself from traps and the fox cannot defend himself from wolves."

(c) (10) "One ought to be both feared and loved, but as it is difficult for the two to go together, it is much safer to be feared than loved."

The Prince

7. (30 points) Imagine that you are facing a brain with a standard set of three-dimensional Cartesian axes centered within the brain with the x-axis projecting outward and z up. Give me the names of the brain sections parallel to each of the following planes.

(a) (10 points) First, the section parallel to the  $yz$  plane.  
coronal OR frontal

(b) (10 points) Second, the section parallel to the  $xy$  plane

horizontal plane

- (c) (10 points) Third, the section parallel to the  $xz$  plane  
sagittal plane

8. (30 points) Identify this rocky pair from clues given; 30-20-10.

- (a) (30) They were predicted in *Gulliver's Travels* 150 years before their actual discovery.  
(b) (20) Their names mean "fear" and "panic".  
(c) (10) They are the two satellites of Mars.

Phobos and Deimos

9. (25 points) I'll name five natural and anthropogenic sources of methane build-up in the atmosphere which vary widely in their magnitude. Put them in order from greatest to least in magnitude. You'll receive five points for each listed in the correct place. The sources: wetlands outgassing, enteric fermentation, rice paddies, biomass burning, and ocean outgassing.

1. wetlands outgassing; 2. enteric fermentation; 3. rice paddies; 4. biomass burning;  
5. ocean outgassing.

10. (30 points) Name the pair of scientists from the given clues; 30-20-10.

- (a) (30) Erwin Chargraff said of them: "That in our day such giant shadows are cast by such pygmies only shows how late in the day it has become."  
(b) (20) One went on to become the leader of Cold Spring Harbor and led the successful project to clone cancer genes.  
(c) (10) The other correctly predicted the existence of transfer and messenger RNA in cells and deduced the nature of the genetic code.

Watson and Francis Crick

11. (30 points) Time for the dreaded general relativity bonus! Three questions, ten invariant points apiece.

- (a) (10 points) First, what can we deduce about the mass of an object if we know that it travels on a time-like world line?

The mass is positive or nonzero.

- (b) (10 points) Second, what are the geodesics of a sphere?

great circles

- (c) (10 points) Third, what is obtained by contracting the Ricci tensor?  
curvature scalar

12. (30 points) I'll describe the two predominant kinds of modern Greek popular music. You'll earn fifteen points for each you can identify.

- (a) (15 points) This is sometimes called Greek blues because it grew out of a specific urban subculture in which poverty, oppression, drugs and violence played prominent roles. Some of its artists are Toundras, Sotiria Bellou and Rita Abatsi.  
rebetika

- (b) (15 points) This is a looser category comprising many subtypes including folk-songs, songs with minimal acoustic accompaniment and foreign melodies. This is the music "everyone listens to." Some artists include Arleta, George Dalaras and Harris Alexiou.

laika

13. (25 points) Place the following in order of increasing wavelength. You'll receive five points for each listed in the proper place. Listen *very carefully*. The items are: William and Mary of the Glorious Revolution; Richard Outcault's [OUT-kawlt] mischievous, bald boy; Eric the Norsemen; the men on a mission from God; and a cardioid U.S. military honor.

1. Purple heart; 2. Blues brothers; 3. Yellow kid; 4. William and Mary of Orange; 5. Eric the Red

14. (30 points) I'll give cryptic clues to a phrase that joins two other famous phrases or names with the last word of one being the first word of the other. For instance, if I said "Naziss knife round-headed kid" you'd say "Charlie Brownshirts."

- (a) (10 points) First, William of Baskerville gasps out a dying word which solves a series of monastery murders and is published in a number of newspapers.

The Name of the Rosebud

- (b) (10 points) Geoffrey Chaucer and Edgar Allen Poe team up to write ghastly stories about a group of pilgrims.

The Canterbury Tales from the Crypt

- (c) (10 points) The offspring of the baby boomers sign on with NCC-1701D.

Star Trek: The Next Generation X

15. (25 points) The moderator will hand you a reproduction of a painting. Examine it closely and answer the following questions about it.

- (a) (5 points) First, who is the rightmost figure of the foreground?



Peter the disciple

- (b) (5 points) Second, what is he about to do?

deny that he knows Jesus the Christ

- (c) (5 points) Third, who painted this picture?

Gerrit von Honthorst

- (d) (5 points) Fourth, within 40 years, when was it painted?

1580 - 1645 [Moderator: actual date uncertain by five years.]

- (e) (5 points) Fifth, according to standard Biblical typology, what color should Peter's robe be?

yellow [Moderator: And yes, von Honthorst did get it right in the painting.]

16. (30 points) There are places besides College Bowl where speed is important, you know, for instance in algorithms programming. I'll describe three common techniques used to make programs run faster, you name them for ten points apiece.

- (a) (10 points) First, breaking a loop of 100 iterations of a single calculation into 10 iterations of ten calculations.

loop unrolling

- (b) (10 points) Second, replacing procedure calls with the actual subroutine code in the calling segment.

code inlining

- (c) (10 points) Third, precalculating a costly function in appropriate increments and storing them to eliminate future calculation of the function.

look-up table

17. (30 points) Finite, countable or uncountable? I'll name three mathematical sets and you tell me, for ten points each, whether each has a finite, countable or uncountable cardinality.

- (a) (10 points) rational numbers

countably infinite

- (b) (10 points) the Cantor set

uncountably infinite

- (c) (10 points) primes

countably infinite

18. (25 points) Pencils and paper ready. Economists write  $GNP = C + I + G + (X - M)$  and thereby divide the gross national product into five sections. For five points each, maximum of 25, can you identify the quantities that each of the letters  $C$ ,  $I$ ,  $G$ ,  $X$ , and  $M$  stand for?

consumer spending, investment spending, government spending, exports, and imports

19. (25 points) It little profits an idle college bowler not to know his chalcogens. I'll give the words from which each of the chalcogens took its name, you identify them for five points apiece.
- (a) (5 points) earth  
tellurium (do not accept cadmium since it is not a chalcogen)
  - (b) (5 points) acid-forming  
oxygen
  - (c) (5 points) moon  
selenium
  - (d) (5 points) brimstone  
sulphur
  - (e) (5 points) Poland  
polonium
20. (30 points) "Trapped in a twilight zone halfway between humans and apes...the male is unfit even for stud service. To call a man an animal is to flatter him; he is a machine, a walking dildo." This is an blurb from the SCUM Manifesto by Valerie Solanas.
- (a) (20 points) First for five points per word, what does the acronym SCUM stand for?  
Society for Cutting Up Men
  - (b) (10 points) Now for ten more points, whom did Solanas shot in the stomach on June 3, 1968?  
Andy Warhol
21. (25 points) Now that you're in the middle of the game, it seems like a good question topic to ask you about islands that are in the middle of bodies of water. I'll name an island (or maybe more than one) and you are expected to identify the body of water in which it is located for five points apiece.
- (a) (5 points) Bornholm, Öland  
Baltic Sea
  - (b) (5 points) Lesvos, Samos, Rhodes  
Aegean Sea
  - (c) (5 points) Coats, Mansel, Akimiski

Hudson Bay

(d) (5 points) Natuna, Spratly

South China Sea

(e) (5 points) Akpatok Island

Ungava Bay



Figure 1: Visual aid for bonus question #15.