

STATE ROAD SCHOLAR EXAM

Illinois Science Olympiad Invitational

North Shore Country Day

Saturday, February 6, 2010

Welcome to the Illinois Science Olympiad Invitational of the Road Scholar exam at North Shore Country Day school. You are prepared for exploring the state through a review of the **Illinois State Highway Map [HM]** and a topographic map, **Starved Rock Quadrangle, IL [TM]**.

Starting with the state highway map, open it up to the side with the city of Chicago visible, superimposed over Lake Michigan is something called a (1) _____, which helps us understand directions. Looking due West from this across the state, find section A4, the map has a marker stating the highest point in the state called Charles Mound, elevation (2) _____. (Note: if you visit the top of the Willis Tower in Chicago, the tallest building in the Americas, you are at 1,730 feet in elevation – higher than anywhere else in the state.)

Charles Mound is located in historic Jo Davies County, what is the County Seat of this county? (3) _____. What is the population of this town per the index? (4) _____. This town, located near the Mississippi River, is a transportation hub in its own right, and the map notes a road, a river and a railroad passing through it. What is the name of the river? (5) _____. The road passing through town starts in the extreme NW corner of the state in East Dubuque and travels to Chicago, it is assigned the number 20, what kind of route marker does it have? (6) _____. The town also has some gray lines emanating out of it, these represent (7) _____? The town is noted with several historic site markers, can you tell from these which US president once had a home in this town (8) _____?

Let's plan to drive from this historic town south to Savanna, just a little further along the Mississippi. To do so, follow along a route 20 to route 84, this has what kind of route marker (9) _____? What is the distance between the intersection of 20 and 84 to the town of Savanna (10) _____? This road also has a special name and designation because it is a National Scenic Byway, it is known as (11) _____. Carrying on south along this same road, it is (12) _____ miles to the town of Thomson, site of the Thomson Correctional Center, much in the news lately as the proposed new home of Gitmo terrorists. Look at the scale and measure with your ruler the distance to the town of Sterling, as the crow flies, just to the SE. How many miles between the two? (13) _____.

Carrying on south along this road, we come to a town called Cordova, site of a major nuclear power station. What is the distance by road between Thomson and Cordova? (14) _____? Does this check out, roughly, when you measure with the ruler? What county is Cordova found in? (15) _____?

Using the Thomson Correctional Center as a base point, provide the azimuths and bearings to the following locations:

Azimuth to East Dubuque (16) _____

Bearing to East Dubuque (17) _____

Azimuth to Rockford (18) _____

Bearing to Rockford (19) _____

Azimuth to Dixon (20) _____

Bearing to Dixon (21) _____

Azimuth to Cordova (22) _____

Bearing to Cordova (23) _____

Just a little south of Thomson, in Whiteside County, is the Morrison Rockwood State Park. Are visitors allowed to camp and fish in this park? (24) _____. Take a look at the list of Federal Recreation Areas, using the Index Key for reference, name the Northern-most of the group. (25) _____. Just east of this site is the town of Mattoon. Use the Mileage Distance Chart to determine the distance from Mattoon to Springfield, the state's capitol. (26) _____. Also determine the distance from Springfield to Ottawa with this chart. (27) _____. Ottawa is located in Index Key B-7. What major type of route, numbered 80, passes through it just to the North? (28) _____. Just south and west, across the Illinois River, is the Starved Rock State Park.

Picking up the Starved Rock Quadrangle map, it is a (29) _____ Minute Series topographic map, which means it has a scale of (30) _____. The map was produced by the United States Department of the (31) _____. Locate Starved Rock State Park in the center, east sector of the map. Identify the (32) Section # ____, the (33) Township T__S and (34) Range R__E. This can also be located at approximately (35) ___ degrees ___ minutes N latitude and (36) ___ degrees ___ minutes W longitude.

The adjoining quadrangle immediately to the North is called (37) _____.

Is Grid North East or West of Magnetic North? (38) _____. Why does the date the map was made have implications for Magnetic North? (39) _____.

From Starved Rock State Park to the base of the ridge described by the words "South Ottawa", observe the contour lines. If you walked from the park to the letter "U" in the name, would you characterize the walk as gentle/flat or steep/sloping? (40) _____.

Hope you enjoyed learning about maps! Now try your hand at drawing your own notations on the following map.

STATE ROAD SCHOLAR EXAM: Answer Sheet

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Team Name and #: _____

Participant Names: _____

- | | |
|----------------------|---------------------------|
| 1. COMPASS ROSE | 21. S 74° E |
| 2. 1, 235 | 22. 200' |
| 3. GALENA | 23. S 20° W |
| 4. 3460 | 24. YES |
| 5. GALENA RIVER | 25. LAKE SHELBYVILLE |
| 6. U.S. | 26. 83 |
| 7. TWO-LANE HIGHWAYS | 27. 137 |
| 8. GRANT | 28. INTERSTATE |
| 9. STATE | 29. 7.5 |
| 10. 19 | 30. 1:24,000 |
| 11. GRAFT RIVER ROAD | 31. INTERIOR |
| 12. 9 | 32. 20 |
| 13. 25 MILES | 33. 33 |
| 14. 22-24 | 34. 3 |
| 15. ROCK ISLAND | 35. 41° 19' |
| 16. 324° | 36. 88° 54' |
| 17. N 36° W | 37. PRAIRIE CENTER |
| 18.* 69° | 38. WEST |
| 19. N 69° E | 39.* MAGNETIC NORTH MOVES |
| 20. 106° | 40. GENTLE / FLAT |

* tie-breaker questions

STATE ROAD SCHOLAR EXAM: Quadrangle Map

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The square below represents one 1-mile x 1-mile section (Section 24) of the Public Land Survey System. The section is divided into quarter-sections, and then each quarter-section into quarter-quarter-sections. Draw the map features listed below:

1. Draw a two buildings in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ 24.
2. Draw a gravel pit in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ 24.
3. Draw a hill with four contour lines and an elevation of 90 ft in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ 24.
4. Draw a standard guage railroad, single track from the SW $\frac{1}{4}$ SW $\frac{1}{4}$ 24 to NW $\frac{1}{4}$ SE $\frac{1}{4}$ 24 and then continuing to the NW $\frac{1}{4}$ NE $\frac{1}{4}$ 24. The railroad should run north of the hill.
5. Add a marsh on the W side of the river in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ 24.
6. Place a picnic area symbol in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ 24.

