Sleep Patterns and Energy Drinks

A researcher decides to study the relationship between the consumption of energy drinks and the amount of sleep that college students report.  He does a survey of students at a local college where he has used a random numbering scheme to select 100 students to send the survey to. Initially his survey questions included questions about class in school—Freshman—Senior, age, marital status, class load, hours of sleep on average during the week and on the weekend, number of energy drinks consumed on week days and on the weekends.  When he refined his questions, he decided to include questions about consumption of other forms of caffeine as well—coffee, teas, and soda. He believes that students who consume energy drinks are getting less sleep than those who do not, but he decides that he needs the other caffeine data as well and decides to split his group up into three groups once he collects the data—no caffeine use, caffeine use but no energy drinks, and energy drink users (whether or not they use caffeine in other forms).

He gets 72 surveys returned and divides them up into groups according to caffeine use as indicated above with the following results:

No caffeine group n = 15, sleep per night mean = 7.23 hours, sd = 1.72 hours

Caffeine, no energy group n = 27, sleep per night mean = 7.17 hours, sd = 1.58

Energy drink group n = 30, sleep per nigh mean = 6.42, sd = 1.87

He runs a statistical comparison between the groups and finds F= 7.923, p = .032 .

He concludes that there is a significant difference between the groups at p =05 and decides to do further tests to see where the difference lies.

Use the Sleep Patterns and Energy Drinks study below, and answer the following questions:

1. What sampling technique was used for the study?
2. What was the level of measurement for each type of data collected in the study?

C. What descriptive statistics were used in the study? Name them all.

D.  What hypothesis was tested in the study?

What type of test was run on the data?

H.  Were the conclusions appropriate for the study?

1. What were the limitations of the study?