Part 1

1. Make an HR diagram of the 20 brightest stars and the 20 nearest stars given respectively in Table 4 and Table 5 of Appendix 3 of your text book. If the star is binary, plot both the A and B components. X-axis indicating spectral class and Y-axis, the absolute visual magnitude. Show bright stars with a small circle in blue ink, while for the nearest stars use red ink.

In the plot indicate the main sequence, turn-off point, and position of the Sun; and circle the group of white dwarfs, sub giants and red giants.
Based on this HR diagram, answer the following:

2. Write the name of
   White dwarfs: 
   2 Points
   Red giants: 
   2 Points
   Sub giants: 
   2 Points

3. On the Y-axis as we move upwards why is the value of absolute magnitude decreasing?
   2 Points

4. What is the most common kind of a bright star? (cool/ hot) 
   1 Point

5. What is the most common kind of star near the sun? (cool/ hot) 
   1 Point

6. On HR diagram, why don’t giant stars lie on the main sequence.
   2 Points

7. What is the status of our Sun as compared to the brightest stars (compare mass, size, temperature and brightness).
   2 Points

8. What is the status of our Sun as compared to the nearest stars (compare mass, size, temperature and brightness).
   2 Points

9. The stars in the upper right of the diagram are very bright but are also very cool. If the stars are cool, why do you think they are so bright?
   2 Points

10. Looking at the group of stars that you have encircled or indicated in your plot, indicate which kind of stars are more common in our Galaxy.
    2 Points

**Part 2:**

    30 Points

**Note:** Please indicate your name and student number on your assignment.

*Late submissions are not encouraged.*