SELF TEST      UNIT 1

1. The seven stars making up the Big Dipper is an ___________________, while those seven stars are at the same time in a region of the sky called the __________________________ of Ursa Major.

2. Exactly due west on the horizon is the point called the west __________________________.

3. The North Star can also be called ____________________________________________.

4. The Northern Cross is an asterism in the constellation ____________________________.

5. The point directly overhead, without respect to the observer’s location on earth is called his/her ____________________________.

6. The “pointer stars” are in the asterism of the ____________________________ and their names are ____________________________ and ____________________________.

7. Polaris is the end star in the handle of the ____________________________ which is part of the constellation___________________________________.

8. Opposite the zenith lies the ____________________________.

9. If I could fit 3 fingers, held at arm’s length, between 2 stars in the sky as I kept one eye closed, the approximate angle between these stars is ________________.

10. The scientific name of the brightest star in the constellation Aquarius is ____________________________.

11. Match the following by number:

   ____________________________ brightest star
   ____________________________ a red supergiant
   ____________________________ the pole star
   ____________________________ most famous eclipsing binary
   ____________________________ first double star seen in a telescope
   ____________________________ the “pointers”
   ____________________________ a blue-white supergiant
   ____________________________ a pulsating variable

   1. Betelgeuse
   2. Rigel
   3. Dubhe-Merak
   4. Mizar
   5. Sirius
   6. Algol
   7. Delta Cephei
   8. Polaris

12. Match the following by number:

   ____________________________ Open (Galactic) star cluster
   ____________________________ Globular star cluster
   ____________________________ Emission nebula
   ____________________________ Planetary nebula
   ____________________________ Supernova remnant

   1. Crab nebula
   2. Pleiades
   3. Hercules cluster
   4. Orion nebula
   5. Ring nebula
13. Match the following by number:

<table>
<thead>
<tr>
<th>Number</th>
<th>Object Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M 45 - Great Nebula of Orion</td>
</tr>
<tr>
<td>2</td>
<td>M 44 - Hercules Cluster</td>
</tr>
<tr>
<td>3</td>
<td>M 42 - famous cluster in Perseus</td>
</tr>
<tr>
<td>4</td>
<td>M 31 - most famous galactic cluster</td>
</tr>
<tr>
<td>5</td>
<td>M 57 - galactic cluster in Cancer</td>
</tr>
<tr>
<td>6</td>
<td>M 13 - famous galaxy</td>
</tr>
<tr>
<td>7</td>
<td>M 8 - Trifid nebula</td>
</tr>
<tr>
<td>8</td>
<td>M 20 - Lagoon nebula</td>
</tr>
<tr>
<td>9</td>
<td>Double Cluster in Perseus</td>
</tr>
<tr>
<td>10</td>
<td>M 8 - Ring nebula</td>
</tr>
</tbody>
</table>

14. Match the following object types to their respective numbers:

<table>
<thead>
<tr>
<th>Number</th>
<th>Object Type Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M 45 - Spiral Galaxy</td>
</tr>
<tr>
<td>2</td>
<td>M 44 - Emission nebula</td>
</tr>
<tr>
<td>3</td>
<td>M 1 - Open (Galactic) star cluster</td>
</tr>
<tr>
<td>4</td>
<td>M 31 - Globular star cluster</td>
</tr>
<tr>
<td>5</td>
<td>M 57 - Planetary nebula</td>
</tr>
<tr>
<td>6</td>
<td>M 13 - Emission and reflection nebula</td>
</tr>
<tr>
<td>7</td>
<td>M 8 - Open cluster w/ Reflection nebula</td>
</tr>
<tr>
<td>8</td>
<td>M 20 - Supernova remnant</td>
</tr>
</tbody>
</table>

15.

\[ S_1 \]

Star 1 ___________________________
Constellation 1 _______________________

16.

\[ S_1 \] \[ P_1 \]

Point 1__________________________
Star 1__________________________
Asterism________________________
Constellation____________________
21. Match the following method of location:

- Orion’s belt to the upper right
- Orion’s belt to the lower left
- the sword of Orion
- arc of handle of Big Dipper
- between Gemini and Leo
- along the top of Andromeda (the wedge)
- right shoulder of Orion
- left leg of Orion
- upper belt of Orion
- bend of handle of Big Dipper

1. Arcturus-Spica
2. Andromeda Galaxy
3. Pleiades
4. Beehive Cluster
5. Betelgeuse
6. Rigel
7. Mintaka
8. Sirius
9. Mizar-Alcor
10. Great Nebula of Orion
23. On the celestial sphere, draw and label the following: zenith, nadir, celestial meridian, anti-meridian, horizon, and the cardinal points.

Sample Essay Question:
1) Pick one of the deep-sky objects we discussed in lecture and explain in detail what has happened there, what is currently occurring and what should be its fate.