MAINE 2000 C ANSWER KEY

PART 1:

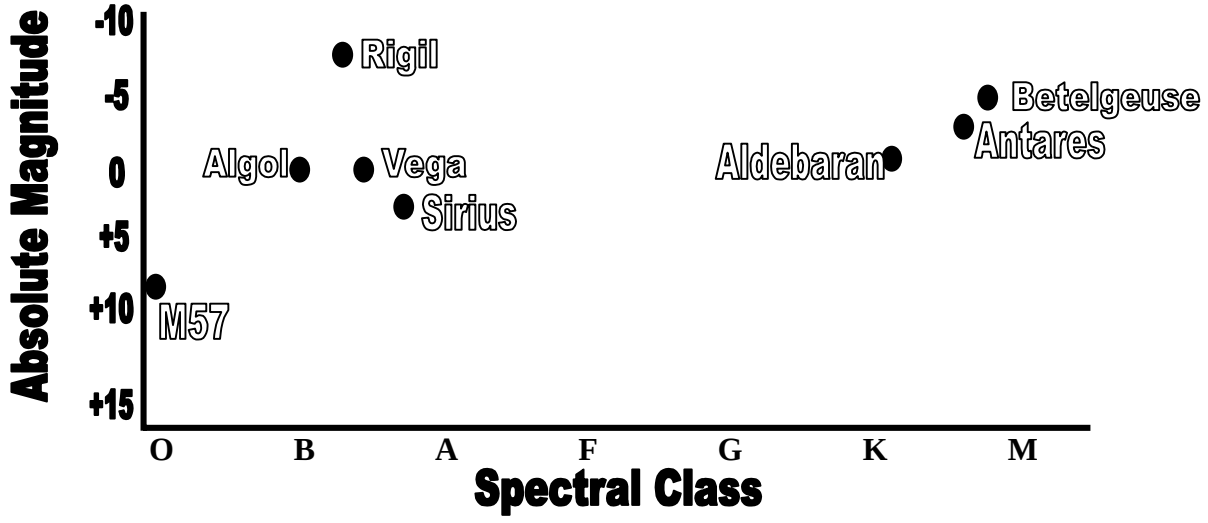
A.

1. (a)_____Antares____
(b)_____Scorpio____
2. (a)_____Vega____
(b)_____Lyra____
(c)_____M57 (Ring Nebula)____
(d)_____Planetary Nebula____
(e)_____Summer Triangle____
(f)_____Deneb, Altair____
3. (a)_____Perseus____
(b)_____Algol____
(c)_____Eclipsing Binary____
4. (a)_____Bootes____
(b)_____Arcturus____
(c)_____$12^h45^m30^0$____
5. (a)_____Taurus____
(b)_____Aldebaran____
(c)_____the Crab (pulsar and/or nebula) and Hyades (open cluster)____
6. (a)_____Betelgeuse (U) and Rigil (E)____
(b)_____Canis Major____
(c)_____Sirius____

B (1)

Object 1_____Algol____
Object 2_____Vega____
Object 3_____Aldebaran____
Object 4_____Betelgeuse____
Object 5_____Antares____
Object 6_____Rigil____
Object 7_____M57____
Object 8_____Sirius____
Object 9_____M100____
Object 10_____Cygnus X-1

B (2)



Part 2:

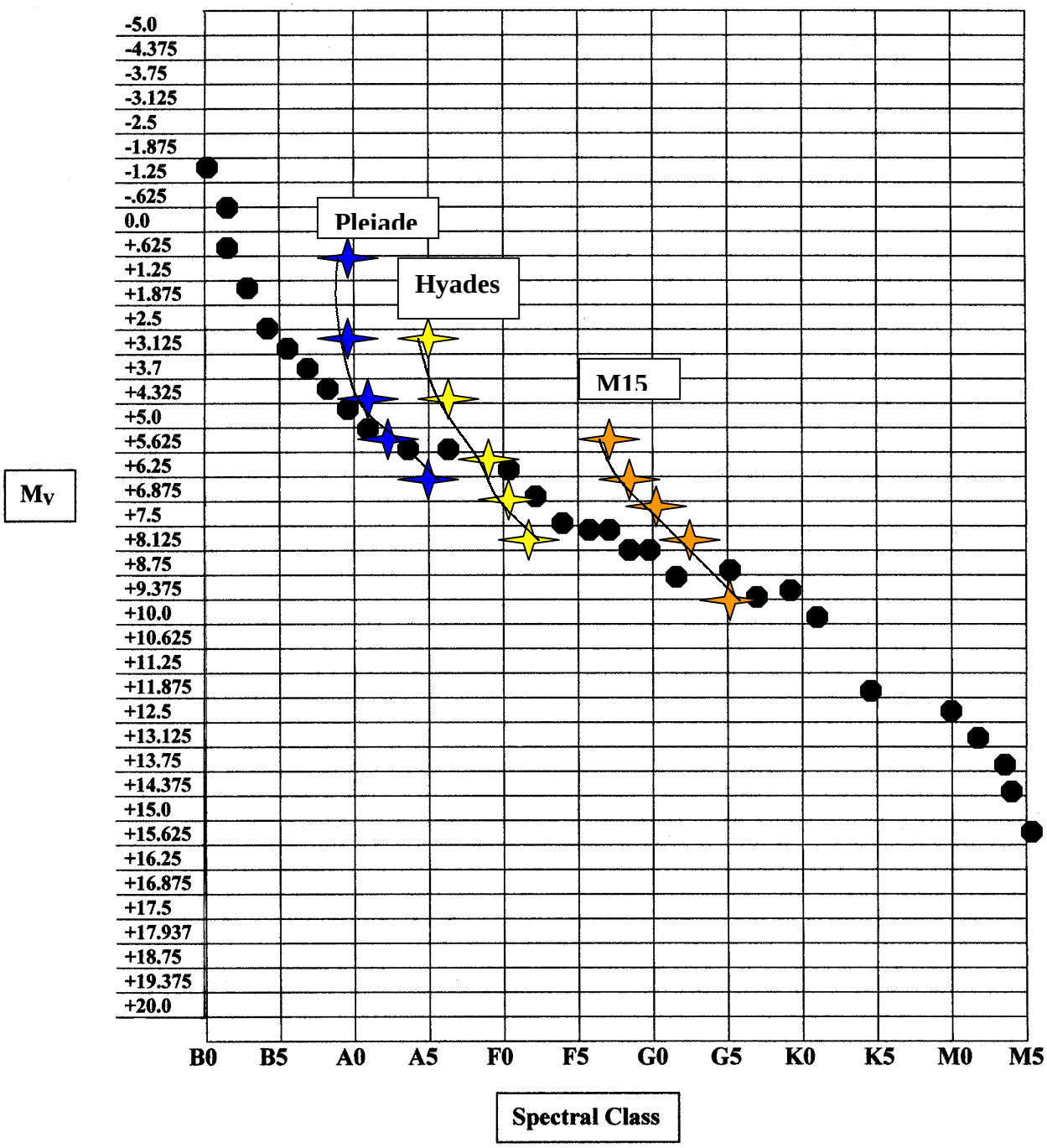
A.

1. (a) _____500 x 10^6 Yrs____
(b) _____280 x 10^6 Yrs____
(c) _____2.7 x 10^9 Yrs____
(d) _____3 x 10^9 Yrs____
(e) _____40 x 10^6 Yrs____
(f) _____the greater the mass the younger the star____

2. (a) See H-R Diagram on following page
(b) See H-R Diagram on following page
(c) Absolute Magnitude at turnoff point for:
Pleiades___+.625____
Hyades____+2.0____
M67_____+3.1____

(d) The age of the clusters are:
Pleiades____~444 x 10^6 Yrs____
Hyades_____~1.2 x 10^9 Yrs____
M67_____~ 3 x 10^9 Yrs____

H-R Diagram



NOTE: these plots are only an approximation of the actual plot due to the limitations of the process used to generate the above graph.