

Science Olympiad

2008

Division B (Jr.

High)

ANSWERS

Constellation maps

A) Lyra B) Tucana C) Cancer D) Taurus
E) Hercules F) Orion G) Canis Major H)
Perseus

I) Cassiopeia J) Andromeda

DSO pictures:

1) M44 Beehive Cluster 2) M31
Andromeda Galaxy 3) Cas A
4) M13 Globular 5) M57 Ring Nebula 6)
M42 Orion Nebula
7) M1 Crab Nebula 8) M45 Pleiades 9)
Hyades Star Cluster
10) Small Magellanic Cloud

0) Label an HR diagram

With this test, you have been given a blank
HR diagram. Provided is a list of objects and
labels to put in the appropriate locations.
After you have labeled it to the best of your

ability, raise your hand and we will exchange
it for a fully-labeled one, and collect your
version.

Label the following:

- (1) units on top scale
- (1) units on left scale
- (1) right scale ticks
- (1) right scale units
- (1) bottom scale ticks
- (1) bottom scale units

- (1) Main Sequence
- (1) Position of Sun
- (1) Red Giant branch
- (1) Red Supergiant branch
- (1) white dwarf stars

I) Constellation and DSO

ID section

- (1) 1. Lyra
- (1) 2. Vega
- (1) 3. L
- (1) 4. #5
- (2) 5,6. Ring Nebula M57
- (1) 7. C (PN)
- (2) 8. (short answer)

Constellation B:

- (1) 9. Tucana
- (1) 10. #10
- (1) 11. SMC
- (1) 12. K
- (2) 13. (short answer)

Constellation C:

- (1) 14. Cancer
- (1) 15. #1

- (2) 16,17. Beehive M44
- (1) 18. A
- (1) 19. B

Constellation D:

- (1) 20. Taurus
- (1) 21. Aldebaran
- (1) 22. C
- (3) 23-25. #7, #8, #9
- (3) 26-28. Crab Nebula M1, M45 Pleiades, Hyades Star Cluster (respectively)
- (3) 29-31. E, A, A
- (3) 32-34. D A (respectively) (34 is blank)

Constellation E:

- (1) 36. Hercules
- (1) 37. #4
- (2) 38,39. Hercules Cluster M13
- (1) 40. B (glob cl)
- (1) 41. E

Constellation F:

- (1) 42. Orion
- (2) 43,44. Betelgeuse and Rigel
- (2) 45,46. B and A, respectively
- (1) 47. #6
- (2) 48,49. Orion Nebula M42
- (1) 50. F or H

Constellation G:

- (1) 51. Canis Major
- (1) 52. Sirius
- (1) 53. L
- (1) 54. Sirius B
- (1) 55. O
- (1) 56. D

Constellation H:

- (1) 57. Perseus
- (1) 58. Algol
- (1) 59. N
- (1) 60. L

Constellation I:

- (1) 61. Cassiopeia
- (1) 62. #3
- (1) 63. Cas A
- (1) 64. E (sn remn.)

Constellation J:

- (1) 65. Andromeda
- (1) 66. #2
- (2) 67,68. Andromeda Galaxy M31
- (1) 69. J (galaxy)
- (2) 70, 71. [Mars – Taurus, Jupiter (and Pluto) – Sagittarius]

II) The Milky Way and Our Sun

- (1) 72. D
- (1) 73. No
- (2) 74. relatively close to alignment. mention ecliptic!

- (1) 75. 1
- (1) 76. 6
- (1) 77. bar
- (1) 78. HII region
- (1) 79. star formation!
- (1) 80. D

- (1) 81. D
- (2) 82. move along the MS, ascend to RGB (C), then become PN, and become a WD (D)

- (1) 83. B
- (1) 84. C
- (1) 85. B
- (1) 86. T
- (1) 87. F
- (1) 88. C
- (1) 89. D
- (1) 90. D
- (1) 91. A
- (1) 92. D
- (1) 93. B

- (2) 117. C
- (1) 118. T
- (1) 119. F
- (1) 120. F

III) Other Stars and the HR diagram

- (1) 94. E
- (1) 95. C
- (1) 96. C
- (1) 97. E
- (1) 98. B
- (1) 99. C
- (1) 100. B
- (1) 101: C
- (1) 102: B
- (1) 103: D
- (1) 104: G
- (1) 105: A
- (1) 106: E
- (1) 107: K
- (1) 108: F
- (1) 109. B
- (1) 110. D
- (1) 111. ABCD
- (1) 112. MKGFABO
- (1) 113. E
- (1) 114. F
- (1) 115. F
- (1) 116. T