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Part I: Answers to questions 1 – 3

1. [2 pts.] Most ellipticals contain little or no gas or dust necessary for star formation.
2. [2 pts.] Spiral arms
3. [2 pts.] Blue stars **and** [2 pts.] the presence of gas and dust. [Answers may be in either order.]

Part II: Answers to Galaxy Classification Activity

Note: The classification scheme for most galaxies includes two parts. The first is an **S** for Spiral, **SB** for Barred Spiral, **E** for Elliptical, **Ir** for Irregular, and **SO** and **SBO**. Those classified as SO or SBO are broken down no further. Award **1 point** for correctly identifying the first part of the galaxy classification. Award **2 points** for correctly identifying the SO and SBO galaxies. The second part of a galaxy’s classification is a small letter – a, b or c – for Spirals and Barred Spirals; a number 1 through 7 for Ellipticals; and I or II for Irregulars. There is a very fine line between the Sb and Sc classifications, so either is acceptable as noted in the key. This is also true for SBb and SBc galaxies. A fine line also distinguishes Elliptical galaxies, so accept any classification as correct if the number chosen is “right on” or a neighboring number on either side, i.e. if the accepted classification is E2, accept E1, E2 or E3 as being correct. Award **1 additional point** if the letter or number following the major class has been correctly identified. Award no points if the second part of the classification is correct, but the major part is incorrect. *Actually, the accepted range is built in to the key to make your task of evaluating easy. The standard classification has been printed in bold-faced type.*

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|------------------------|---|
| 1. Sb or Sc | 12. Sb or Sc |
| 2. Sb or Sc | 13. Sb or Sc |
| 3. Sb or Sc | 14. Ir-II |
| 4. Sa | 15. SO |
| 5. Sb or Sc | 16. SBb or SBc |
| 6. E1, E2 , E3 | 17. SBb or SBc |
| 7. Sb or Sc | 18. SBb or SBc |
| 8. E3, E4 , E5 | 19. Sb or Sc |
| 9. Sb or Sc | 20. Sb or Sc |
| 10. E4, E5 , E6 | Messier numbers and classifications |
| 11. Sa | are included on a separate photo page. |