GENETICS CARD REVIEW ANSWERS

1. E
 2. B
3. C
4. C-hemophilia
5. If mom is O, baby’s B came from dad. Dad can’t be A or O blood type.
6. ½ x ½ x ¼ = 1/16
7. Test cross with C-gg
8. Tay-Sachs, Cystic fibrosis, PKU
9. C - Xlinked dominant
10. A. E-A-D-C-B
11. E. sperm are haploid/need one of each letter
12. D if green , both gotta be yy
13. A- Bb
14. B – BB (could be BB or Bb but all kids normal suggests MOST LIKELY BB)
15. SEX INFLUENCED (on autosome) but shows differently in males and females
16. 100% of males will have white eyed; (100% of females will have red eyes)
17. Incomplete dominance: heterozygote shows blended phenyotype (red X white = pink)
 Codominance- both phenotypes show together side by side (AB blood type has A & B glycoproteins)
18. ½
19. ½ x ½ x ½ x ½ x ½ x ½ = 1/64
20. Down syndrome; can’t see single gene mutations in a karyotype
21.a) Purple eyes is recessive to red eyes and vestigial wings is recessive to long wings
 Genes for purple eyes and vestigial wings are linked on same chromosome
22. a) 18+16/283 = 12%
 b) CO frequency = map units 12% = 12 map units
23. a) mother
 b) Uneven division of cytoplasm during cytokinesis/production of polar bodies results majority of cytoplasm
 (including mitochondria!) going to one egg
24. Malaria resistance
25. Huntington’s, achondroplasia
26.nondisjunction
27. Down syndrome, Turner syndrome, Klinefelter syndrome, Xyy, XXX
28. Males; males don’t have a back up X (no copilot) to cover the mutation; girls have 2 X’s so if one X has mutation they have another to cover for them.
29. Polyplidy
30. Lysosomes
31. D
32. Normal transporter moves Cl- ions out of cell making water potential inside cell higher than outside Water moves out making mucous outside thin and watery. (SOLUTE SUCKS) If transporter doesn’t work, ions stay in cytosol. Water potential is higher outside now than inside. Water moves into cell and mucous on cell surface gets thick and sticky.
33. a) 2 genes both autosomal recessive linked on same chromosome- F1- all wild type/wild type;
 b F2= 9:3:3:1
 c) 0.73 Accept the Null-This is a heterozygous dihybrid cross (9:3:3:1)
 d) not linked 9:3:3:1 ratio only seen if 2 genes on different chromosomes sort independently