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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Hair and Fiber

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1  C |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  P |  | 3  B |  |  |  |  |  |  | U |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | B |  | I |  |  | 4  C |  |  |  | T |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5  M | I | T | O | C | H | O | N | D | R | I | A | L | D | N | A |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | C |  |  | R |  |  |  | C |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | O |  |  | T |  |  |  | L |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 6  M | A | C | R | O | M | O | L | E | C | U | L | E |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | P |  |  | X |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | O |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 7  A |  |  |  |  |  | 8  M |  | N |  |  | 9  A |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | N |  |  |  |  |  | O |  | E |  |  | C |  | 10  L |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | A |  |  |  | 11  N | Y | L | O | N |  |  | R |  | Y |  |  |  |  | 12  C |  |  |
|  |  |  |  |  |  |  |  |  | G |  |  |  |  |  | E |  | T |  |  | Y |  | O |  |  |  |  | A |  |  |
|  |  |  |  |  |  |  |  |  | E |  |  | 13  R |  |  | C |  |  |  |  | L |  | C |  |  |  |  | T |  |  |
|  |  |  |  |  |  |  | 14  M | A | N | U | F | A | C | T | U | R | E | D | F | I | B | E | R | 15  S |  |  | A |  |  |
|  |  |  |  |  |  |  |  |  | P |  |  | Y |  |  | L |  |  |  |  | C |  | L |  | P |  |  | G |  |  |
|  |  |  |  |  |  |  |  |  | H |  | 16  P | O | L | Y | E | S | 17  T | E | R |  |  | L |  | A |  |  | E |  |  |
|  |  |  |  |  |  |  |  |  | A |  |  | N |  |  |  |  | E |  |  |  |  |  |  | N |  |  | N |  |  |
|  |  |  |  |  |  |  |  |  | S |  |  |  |  |  | 18  M |  | L |  |  |  |  |  |  | D |  |  | P |  |  |
|  |  |  |  | 19  N |  |  |  | 20  M | E | L | A | 21  M | I | N | E |  | O |  | 22  P | O | L | Y | M | E | R |  | H |  |  |
|  |  |  |  | U |  |  |  |  |  |  |  | O |  |  | D |  | G |  |  |  |  |  |  | X |  |  | A |  |  |
|  |  |  |  | C |  |  |  |  |  |  |  | D |  |  | U |  | E |  |  |  |  |  |  |  |  |  | S |  |  |
|  | 23  F | O | L | L | I | C | U | L | A | R | T | A | G |  | L |  | 24  N | A | T | U | R | A | L | F | I | B | E | R | S |
|  |  |  |  | E |  |  |  |  |  |  |  | C |  |  | L |  | P |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | A |  | 25  M | O | N | O | M | E | R |  |  | A |  | H |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | R |  |  |  |  |  |  |  | Y |  |  |  |  | A |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | D |  |  |  |  |  |  |  | L |  |  |  |  | S |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | N |  |  |  |  |  |  |  | I |  |  |  |  | E |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Across**  **5.** DNA present in small structures outside the nucleus of a cell  **6.** molecule with a high molecular mass  **11.** exceptionally strong, supple, resists damage from oil and chemicals  **14.** fibers derived from either natural or synthetic polymers  **16.** strong, resistant to stretching and shrinking, crisp when wet or dry  **20.** white, dyeable, flame resistant, low thermal conductivity  **22.** substance composed of a large number of atoms that are usually arranged in repeating units  **23.** Translucent piece of tissue surrounding the hair shaft near the root that contains the richest source of DNA associated with the hair  **24.** fibers derive from animal or plant sources  **25.** basic unit of structure from which a polymer is constructed | **Down**  **1.** Scale structure covering exterior of the hair  **2.** extremely flame resistant, will not burn or melt  **3.** thermal bonding, self bulking, unique cross sections  **4.** Main body of the hair shaft  **7.** Initial growth phase during which the hair follicle actively produces hair  **8.** two or more atoms held together by chemical bonds  **9.** soft, warm, wool-like, quick drying, retains shape  **10.** strong, soft, absorbent, good dyeablity  **12.** Transition stage between the anagen and telogen phases of hair growth  **13.** highly absorbent, versatile, good drapability  **15.** can be stretched 500% without breaking  **17.** The final growth stage in which hair naturally falls out of the skin  **18.** Cell column running through the center of the hair  **19.** DNA that is present in the nucleus of a cell and that is inherited from both parents  **21.** soft, abrasion and flame resistant, resists acids |