

BIOL-8 Practice Test 02 — Answer Key

Modules 5-15: Membranes through Body Systems

Part A: Multiple Choice Answers

Q	Answer	Explanation
1	A	Hydrophilic heads face outward (toward water)
2	B	Endocytosis = taking materials into cell
3	B	Exocytosis exports materials from cell
4	B	Anabolic = building molecules
5	B	Competitive inhibitor blocks active site
6	B	Chromatin condenses in prophase
7	C	Sister chromatids separate in anaphase
8	C	Meiosis produces 4 haploid cells
9	B	Independent assortment = random homolog alignment
10	B	Crossing over increases genetic variation
11	B	$Aa \times Aa = 3:1$ phenotypic ratio
12	C	Test cross uses homozygous recessive
13	B	Sex-linked traits on sex chromosomes
14	C	Four tissue types include nervous tissue
15	D	Bones do not produce hormones
16	B	Skeletal muscle is voluntary
17	B	Sliding filament = muscle contraction
18	C	Red blood cells are not pathogens
19	D	Right ventricle pumps to lungs

Q	Answer	Explanation
20	B	Arteries carry blood away from heart
21	B	Red blood cells carry oxygen
22	C	Gas exchange occurs at alveoli
23	B	Diaphragm is used for breathing
24	B	Nose → Trachea → Bronchi → Alveoli
25	B	White blood cells fight infection

Part B: Fill in the Blank Answers

Q	Answer
26	pinocytosis (or endocytosis)
27	S
28	haploid
29	nervous
30	calcium
31	myosin
32	immune (or integumentary)
33	aorta
34	alveoli
35	oxygen

Part C: Short Answer Key

36. Mitosis vs. Meiosis:

- Mitosis: produces 2 identical diploid cells; for growth and repair
- Meiosis: produces 4 unique haploid cells; for sexual reproduction

37. Muscular-Skeletal Interaction:

- Bones provide support and attachment points for muscles
- Muscles contract and pull on bones to create movement at joints

38. Blood Pathway:

- Deoxygenated blood enters right atrium → right ventricle → pulmonary artery → lungs
- Oxygenated blood returns via pulmonary veins → left atrium → left ventricle → aorta

39. Gas Exchange:

- O₂ diffuses from alveoli into blood (binds to hemoglobin)
- CO₂ diffuses from blood into alveoli and is exhaled

40. Defense Against Pathogens (any 2):

- Physical barriers (skin, mucus membranes)
- Immune cells (white blood cells, antibodies)
- Inflammatory response

End of Answer Key