

Part 1: Crosses, Pedigrees, & Karyotypes

General Knowledge

1. 100%
2. 1/64
3. c
4. b
5. a, c (0.2 pts per option correct)
6. a
7. d
8. X^AX^a (capitalization matters)
9. a
10. b

Investigation: Pass the Peas

11. Yy (capitalization matters)
12. 96
13. 192
14. Green & blue (½ pt for g, ½ for b)
15. c
16. enzymes D & E (½ pt for g, ½ for b)
17. pp (capitalization matters)
18. PP (capitalization matters)
19. 3/16
20. 72

Challenge Problems

21. 0.72 or 72%
22. 7
23. 2:1 (ratio must be in this order)
24. 1/2 or 0.5
25. c

Part 2: DNA Structure & Replication

General Knowledge

1. deoxyribonucleic acid
2. b
3. a
4. uracil
5. b
6. 5' end
7. guanine
8. purine
9. d
10. b

Investigation: *C. urchinis*

11. 18%
12. 36%
13. Chargaff
14. 14%
15. 36%
16. 16 million
17. 2.78 ± 0.02 hours
18. 11.11 ± 0.02 hours
19. 40,000
20. 3.22 ± 0.05 hours

Challenge Problems

21. a, b, d, c (1/3 pt per blank)
22. I. c II. d
23. conservative model
24. Test Tube C
25. DNA ligase

Part 3: Mitosis & Meiosis

General Knowledge

1. a
2. c
3. c
4. a
5. d
6. c
7. a
8. c
9. b
10. a

Challenge Problems

11. 900 polar bodies
12. I. II II. IV
13. metaphase
14. a
15. b

		Second Base in Codon				
		U	C	A	G	
First Base in Codon	U	UUU } Phe UUC } UUA } Leu UUG }	UCU } UCC } Ser UCA } UCG }	UAU } Tyr UAC } UAA Stop UAG Stop	UGU } Cys UGC } UGA Stop UGG Trp	U C A G
	C	CUU } CUC } Leu CUA } CUG }	CCU } CCC } CCA } Pro CCG }	CAU } His CAC } CAA } Gln CAG }	CGU } CGC } Arg CGA } CGG }	U C A G
	A	AUU } AUC } Ile AUA } AUG } Met or Start	ACU } ACC } ACA } Thr ACG }	AAU } Asn AAC } AAA } Lys AAG }	AGU } Ser AGC } AGA } Arg AGG }	U C A G
	G	GUU } GUC } Val GUA } GUG }	GCU } GCC } GCA } Ala GCG }	GAU } Asp GAC } GAA } Glu GAG }	GGU } GGC } Gly GGA } GGG }	U C A G

Part 4: Protein Synthesis

General Knowledge

1. d
2. c
3. a
4. a
5. b
6. b
7. a
8. c
9. c
10. b

Challenge Problems

11. e
12. c
13. 2400
14. Ala or alanine
15. d

Scores	
Part 1: _____ / 30	Total: _____ / 100 Rank: _____
Part 2: _____ / 30	
Part 3: _____ / 20	
Part 4: _____ / 20	