

# Biology Final Exam Review

## The Scientific Method

- 1) An educated guess is a:
- Hypothesis
  - Data
  - Experiment
  - Conclusion

## Match the vocab words to their definition.

2) Independent Variable	a. Being able to see or touch the evidence
3) Direct Measurement	b. The group that is kept normal
4) Control Group	c. The different thing you try
5) Blind Experiment	d. What you believe affects how you feel
6) Placebo Effect	e. The group you try one new thing with
	f. No one knows which group they are in

## The Characteristics of life

### True or False – Bubble a for True or b for False on the answer sheet

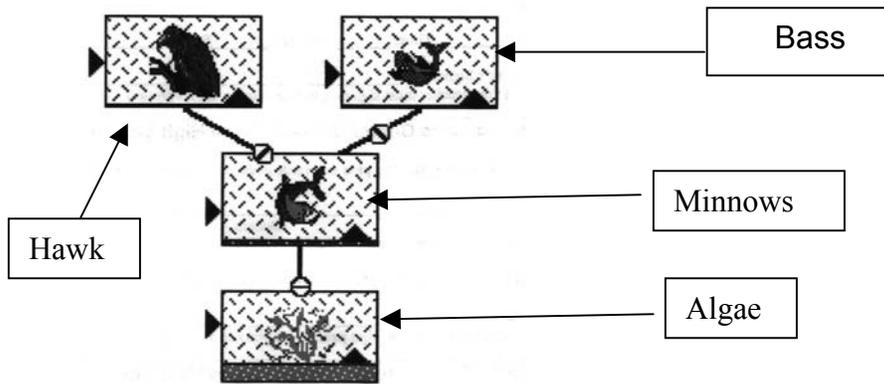
- A Plant dropping a seed is an example of movement.
- Multicellular means that you are made of many cells.
- You get cold and shiver to warm up. This is an example of adaptation or response (they mean the same thing)

## Matching – What life is made of

- |                                |                  |
|--------------------------------|------------------|
| 10) Used for energy            | a. Protein       |
| 11) Energy storage in the body | b. Carbohydrates |
| 12) Found in meat and beans    | c. Lipids        |
| 13) Keeps chemicals working    | d. Water         |
| 14) Builds most body parts.    |                  |

**Matching - Vocabulary**

15) Commensalism	A. One organism eating another
16) Ecosystem	B. A habitat and all of the things living there
17) Trophic level	C. When two organisms help one another out
18) Predation	D. An organisms place in the food chain
19) Carrying capacity	E. The numbers of an organism that an ecosystem can support
20) Equilibrium	AB. Two organism that both eat the same food
21) Competition	AC. Populations in an ecosystem level off

**Short Answer - Ecology Lab**

22) Explain the impact on the population of the minnows, bass and hawk if there was a sudden increase in the population of algae.

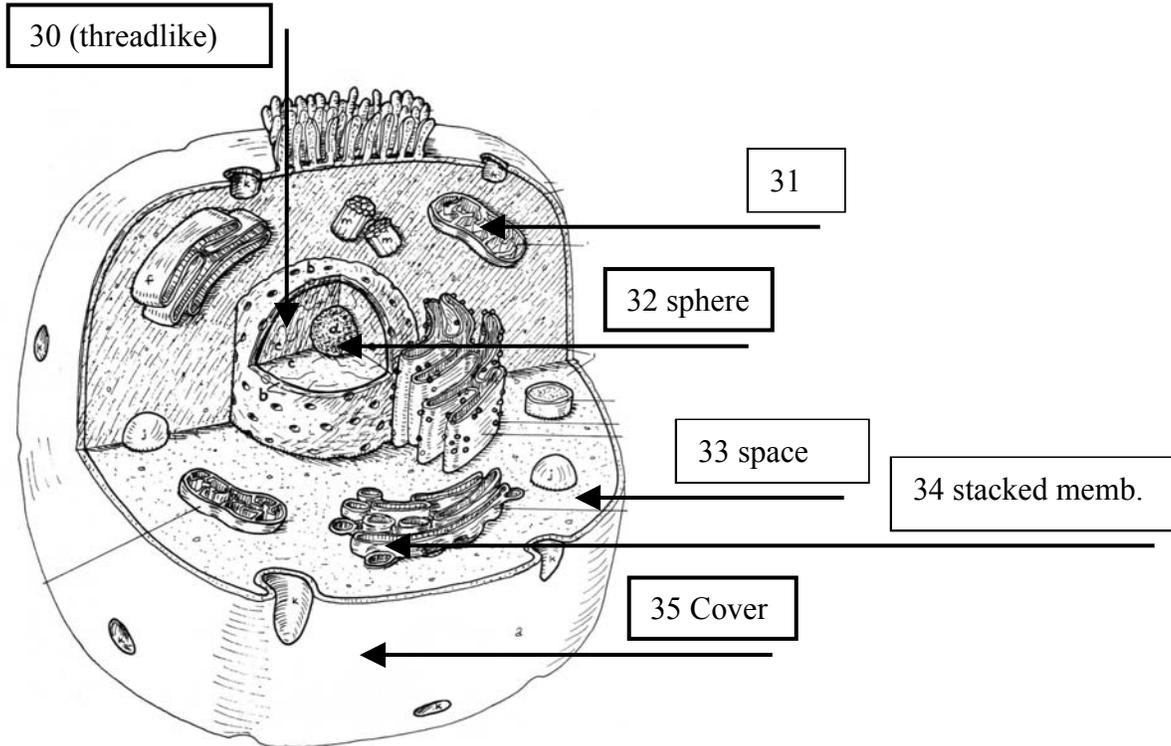
23) Explain the impact on the bass if the number of algae, bass and hawk if cold weather killed off half of the minnow population.

**Matching****Column A**

- 24) Chromatin
- 25) Cell membrane
- 26) Nucleolus
- 27) ER
- 28) Golgi
- 29) Ribosome

**Column B**

- A. Transports materials around the cell
- B. Outer covering of cell
- C. Liquid guts of cell
- D. where energy is made
- E. DNA instructions for cell
- ab. Produce protein and other products
- ac. Storage container
- ad. Produces ribosomes
- ae. Protein Packaging and shipment

**Label the parts of the cell diagram.****Respiration and Cell Energy****Multiple Choice**

- 36) What gas do we need to make energy?  
 a. Carbon Dioxide b. Unleaded c. Oxygen
- 37) How long can you live without oxygen?  
 a. 10 minutes b. sixty minutes c. 9 hours
- 38) What effect does warming your body up have on your ability to make energy?  
 a. Increases it b. Decreases it c. Has no effect on it

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**multiple choice**

- 39) The process of converting sugar into energy is called:  
a. Glycolation b. Respiration c. Procreation d. Energizing
- 40) The source of all of the sugar on the earth can be traced back to:  
a. The sun b. Sugar cane c. Cows d. The store
- 41) Respiration takes place in the:  
a. Golgi body b. Endoplasmic reticulum c. Blood d. Mitochondria
- 42) Aerobic respiration means:  
a. Done using lycra b. Done using carbon dioxide  
c. Done by Jane Fonda d. Done using oxygen

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**True or false**

- 43) Respiration only happens when your body has insufficient energy to do active things like running.
- 44) Respiration is a reaction that requires more energy to do than you get out of it.
- 45) Only animals, not plants, do cellular respiration.
- 46) Respiration that is done without enough oxygen produces less energy and harmful waste products like Lactic Acid.
- 47) You do more respiration when you are active.
- 48) Respiration is the breaking down of sugar, using oxygen, to release energy.

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**Photosynthesis**

- 49) Photosynthesis takes place so that plants can make their own food.
- 50) A plant is an autotroph.
- 51) An animal is an autotroph sometimes.
- 52) Photosynthesis uses the sun's energy to assemble carbon dioxide and water into sugar.
- 53) Plants need to do both photosynthesis and respiration to stay alive.
- 54) The three things plants need to do photosynthesis are energy, water and carbon dioxide.
- 55) The word autotroph means feeder of other organisms in Latin.
- 56) Plants collect sunlight in the daytime and make sugar at night.
- 57) Plants get the energy back out of sugar by doing respiration.

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**Matching - Genetics Terminology**

- |                   |   |
|-------------------|---|
| 58) Homozygous    | a. The appearance of an organism                                    |
| 59) Phenotype     | b. Having one Dominant and one Recessive allele                     |
| 60) Allele        | c. One of two possible variations of a trait                        |
| 61) Genotype      | d. The combination of letters that stand for the genes you inherit. |
| 62) Heterozygous  | e. Having two of the same trait                                     |
| 63) To cross      | ab. Sex linked trait  |
| 64) Punnet Square | ac. when two organisms mate   |
|                   | ad. an aid in determining the results of a cross                    |

Using the following punnet square, answer the questions

	A	a	
A	AA	Aa	A = normal
a	Aa	aa	a = albino

65) What is the genotype of the parent on the left side?  
 a. Aa      b. AA      c. aa      d. None of these

66) What is the phenotypic ratio of normal to albino mice?  
 a. 4:1b. 1:1      c. 3:1

67) What Phenotype is the parent on the top?  
 a. Albino      b. Normal

Use this 16 box punnet square to answer the next 3 questions.

	TB	Tb	tB	tb	
TB					T = tall t = short B = Black b = white
Tb					
tB					
tb					

68) What was the genotype of the parent on the left?  
 a. TtBb      b. Tall, Black

69) What is the Phenotype of the parent on the top?  
 a. TtBb      b. Tall, Black

70) How many of the offspring will be short and white?  
 a. 1      b. 4      c. 9      16

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**Multiple Choice - Human and Non-Mendelian Genetics**

71) How many pairs of chromosomes do a human have?

- a. 12    b. 23    c. 52

72) Which combination of sex chromosomes determines that a baby will be a man?

- a. XX    b. XY    c. YYZ

73) What are the abnormal characteristics a person who is XXY?

- a. Overly violent    b. overweight    c. Some male, some female

74) What does it mean if a trait is Sex Linked?

- a. The trait only affects the sex organs  
b. The trait is found on the sex chromosomes  
c. The trait makes you more sexy

75) Which is NOT one of the four possible blood types?

- a. A    b. B    c. C    d. O

76) Which blood type is the universal donor?

- a. A    b. B    c. C    d. O

77) Type A+ blood can be given to a person who has type \_\_\_\_\_ blood without a problem.

- a. B+    b. O-    c. AB+

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**Multiple Choice- mitosis and meiosis**

78) Mitosis is the process of:

- a. Making more body cells    b. Dying  
c. Claiming your sisters toes    d. Making sex cells

79) The cell at the beginning of mitosis is called the:

- a. Mother cell    b. Father Cell    c. Daughter Cell    d. Second Cousin cell

80) The cells which are made by mitosis are called:

- a. Mother cell    b. Father Cell    c. Daughter Cell    d. Duplicates

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**True or false**

81) Cells formed by mitosis are different than the fertilized egg you started as.

82) DNA that is coiled up for transport is called chromatin.

83) A normal somatic (body) cell has one pair of each chromosome, one from your mother and one from your father.

84) Your cells are helpless during mitosis because you cannot read the DNA's instructions while it is all coiled up.

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**Matching - Each Letter can be used more than once.**

- |   |               |
|---|---------------|
| 85) Nucleus disappears and DNA coils up                   | A. Interphase |
| 86) Cell splits into two new cells                        | B. Prophase   |
| 87) Chromosomes line up in the middle                     | C. Metaphase  |
| 88) Spindle Pulls Chromosomes to poles                    | D. Anaphase   |
| 89) Cell Doubles its DNA, Usually doing normal activities | ab. Telophase |
| 90) Nucleus Disappears                                    |               |

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**True or False - Meiosis**

- 91) Cells formed by Meiosis have 1/2 as much DNA as normal Cells.
- 92) Brain cells are an example of cells made by Meiosis.
- 93) The joining of two cells from meiosis to make a new person is called fertilization.
- 94) The chromosome number of a cell made by meiosis is  $n$ .

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**True or false - Evolution Questions**

- 95) Only competition with other organisms will cause things to evolve (change).
- 96) Evolution stopped happening hundreds of thousands of years ago.
- 97) Extinction happens when a species cannot adapt to changes in the environment.
- 98) In normal populations, every individual is identical to one another.
- 99) Genetic Mutations are always bad for an organism, never beneficial.
- 100) Our current theory of Evolution was originally described by Charles Darwin.

# DSTP Biology Review

Question #	Correct Answer
1	a
2	c
3	a
4	b
5	f
6	d
7	f
8	t
9	t
10	b
11	c
12	a
13	d
14	a
15	c
16	b
17	d
18	a
19	e
20	ac
21	ab
22	Minnow, bass and hawk populations should all increase.
23	Algae population should increase. Bass and Hawk populations should decrease.
24	e
25	b
26	ad
27	a
28	ae
29	ab
30	Chromatin
31	Mitochondria
32	Nucleolus
33	Cytoplasm
34	Golgi Body (complex)
35	Cell (plasma) membrane
36	c
37	a
38	a
39	b
40	a
41	d
42	d
43	f
44	f
45	f
46	t
47	t
48	t
49	t
50	t

51 f  
52 t  
53 t  
54 t  
55 f  
56 t  
57 t  
58 e  
59 a  
60 c  
61 d  
62 b  
63 ac  
64 ad  
65 a  
66 c  
67 b  
68 a  
69 b  
70 a  
71 b  
72 b  
73 c  
74 b  
75 c  
76 d  
77 c  
78 a  
79 a  
80 c  
81 f  
82 f  
83 t  
84 t  
85 b  
86 ab  
87 c  
88 d  
89 a  
90 b  
91 t  
92 f  
93 t  
94 t  
95 f  
96 f  
97 t  
98 f  
99 f  
100 t