Example Items

Biology
Pre-AP

Biology Pre-AP Example Items are a **representative set** of items for the ACP. Teachers may use this set of items along with the test blueprint as guides to prepare students for the ACP. On the last page, the correct answer, content SE and SE justification are listed for each item.

The specific part of an SE that an Example Item measures is NOT necessarily the only part of the SE that is assessed on the ACP. None of these Example Items will appear on the ACP.

Teachers may provide feedback regarding Example Items.

(1) Download the Example Feedback Form and email it. The form is located on the homepage of the Assessment website: https://assessment.dallasisd.org.

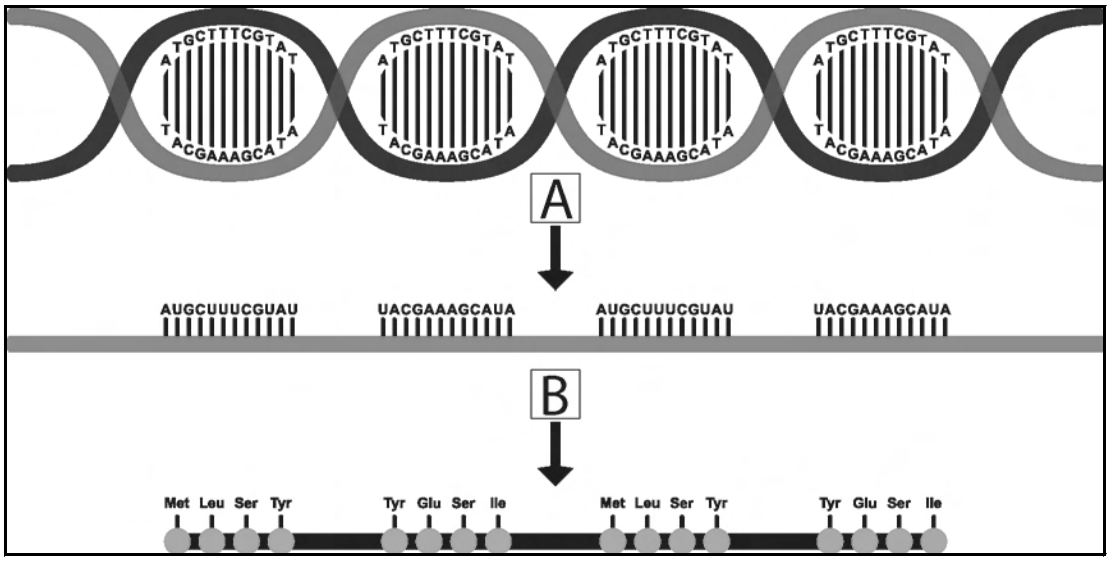
OR

(2) To submit directly, click "Example Feedback – online form" **after** you click the Example Items link under ACP Resources on the ACP tab on the Assessment website.

First Semester
2020–2021
Code #: 3191

EXAMPLE ITEMS Biology Pre-AP, Sem 1

Use the diagram to answer the next question.



1 The process that is labeled with an 'A' is —

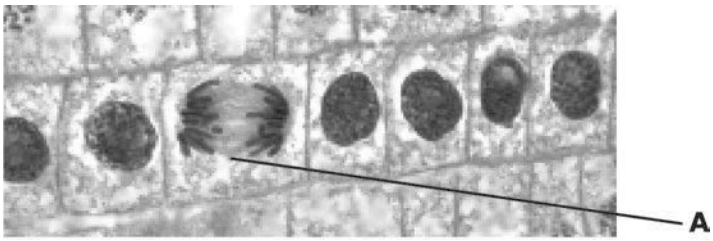
A replication, which is the formation of new alleles

B translation, which is the process that converts mRNA into protein

C transcription, which is the process of copying a sequence of DNA to RNA

D recombination, which ensures that each cell has one complete set of instructions

Use the image to answer the next question.



2 In this photomicrograph of an onion root tip, what phase of mitosis is cell A in?

A Anaphase

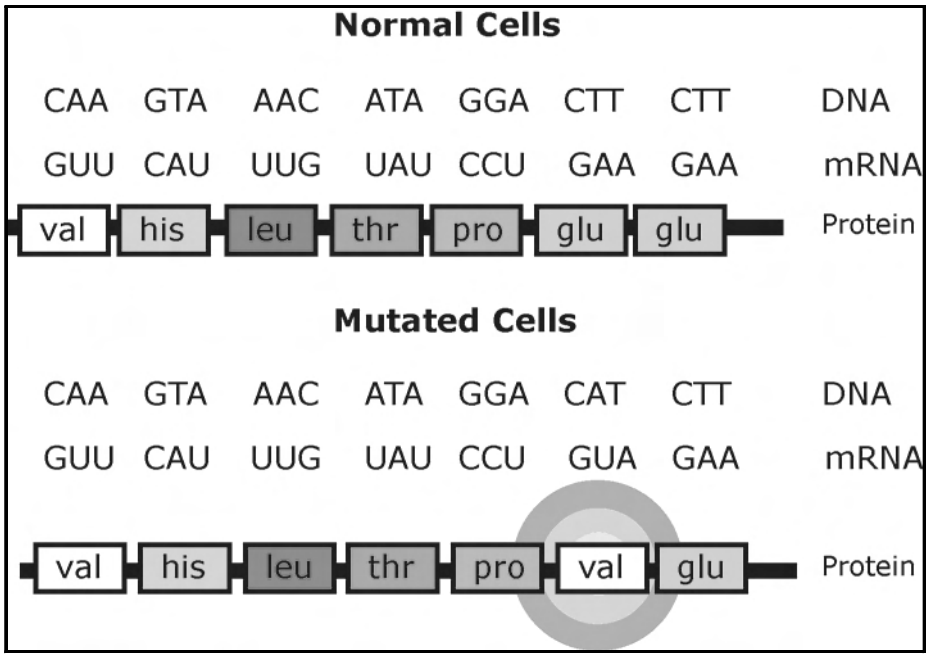
B Interphase

C Prophase

D Telophase

Dallas ISD - Example Items

3 On the hemoglobin gene, glutamic acid is sometimes replaced by valine.



Source: ptbeach.com

What is the significance of this change?

A A point mutation causes sickle cell anemia, which results in disfigured red blood cells.

B A chromosomal mutation causes Klinefelter's syndrome, which results in reduced fertility.

C A translocation mutation causes chronic myeloid leukemia, which affects blood circulation.

D A deletion mutation causes muscular dystrophy, which results in muscle degeneration and death.

4 Which statement is true about the process of photosynthesis?

A Carbon dioxide is produced.

B Sugar is produced.

C Oxygen is consumed.

D It occurs in the mitochondria.

EXAMPLE ITEMS Biology Pre-AP, Sem 1

5 To maintain homeostasis, cells absorb and excrete substances through the phospholipid bilayer of the cell membrane. In which process do cells use vesicles to excrete substances?

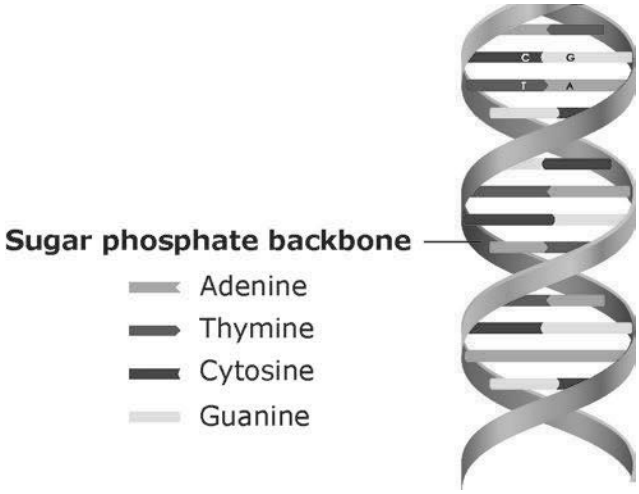
A Facilitated diffusion

B Endocytosis

C Exocytosis

D Simple diffusion

⇨ **Use the picture to answer the next two questions.**



6 Components of DNA include a phosphate backbone and base pairs connected by —

A hydrogen bonds

B carbon bonds

C nitrogen bonds

D phosphate bonds

7 The order of the nitrogenous bases in DNA determines —

A the genetic code

B the presence of polarity

C the presence of a hydrogen bond

D if there is a fifth nitrogen base

8 Which statement is incorrect?

A Some molecules diffuse through transport proteins.

B Molecule transport across a membrane can occur through endocytosis or exocytosis.

C Osmosis is a type of passive transport and requires no energy input from the cell.

D An isotonic solution has a higher concentration of dissolved particles than the cell.

⇨ **Use the table to answer the next question.**

	Organism 1	Organism 2	Organism 3	Organism 4
Reproduction	Mitosis/Meiosis	Binary Fission	Mitosis/Meiosis	Sexual/Asexual
Nuclear membrane	Yes	No	Yes	Yes
Level of organization	Multicellular	Unicellular	Multicellular	Most are unicellular
Photosynthesis in a chloroplast	Yes	No	No	Yes

9 Which organism is prokaryotic?

A Organism 1

B Organism 2

C Organism 3

D Organism 4

10 Which process does not describe a function or role of DNA?

A Storing instructions to build proteins

B Changing due to mutation and recombination

C Encoding genetic information

D Controlling environmental conditions

EXAMPLE ITEMS Biology Pre-AP, Sem 1

11 Which biomolecule is correctly paired with its function?

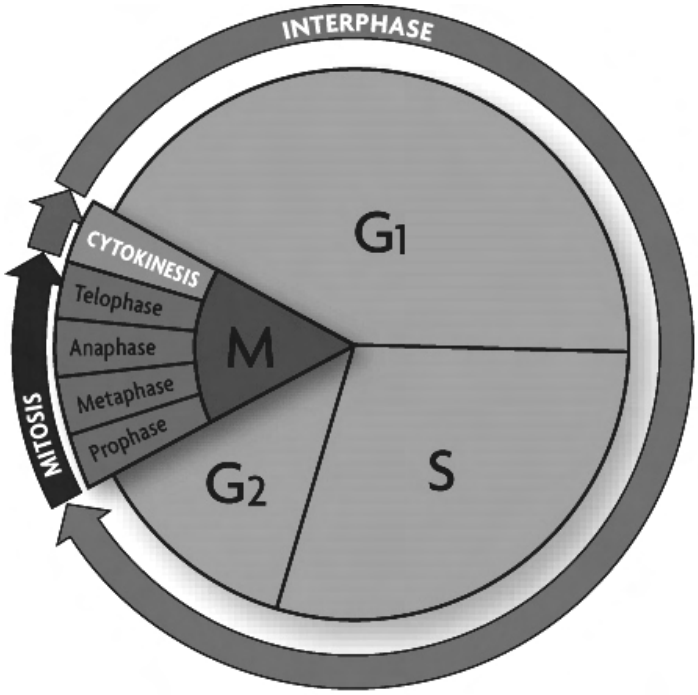
A Lipids—express genes

B Proteins—form enzymes

C Carbohydrates—create hormones

D Nucleic acids—insulate animal tissue

⇨ **Use the diagram to answer the next question.**



Source: my.hrw.com

12 An anticancer drug stops a cancer cell from dividing after the 2nd checkpoint. During which stage is this drug most effective in the cell cycle?

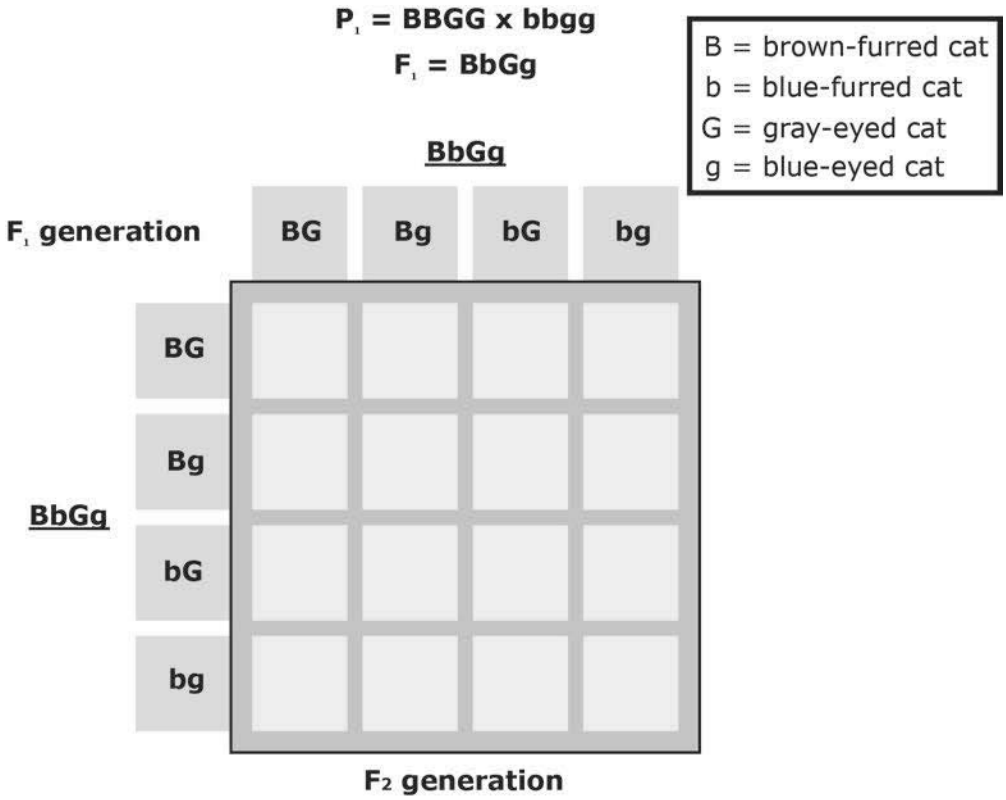
A Gap 1 (G1)

B Synthesis (S)

C Gap 2 (G2)

D Mitosis (M)

13 A homozygous brown-furred, gray-eyed cat was crossed with a blue-furred and blue-eyed cat. All of the F_1 generation were heterozygous for fur and eye color.



If two of the F_1 cats are crossed, how many cats of the 16 offspring are predicted to have blue fur and gray eyes?

A 2

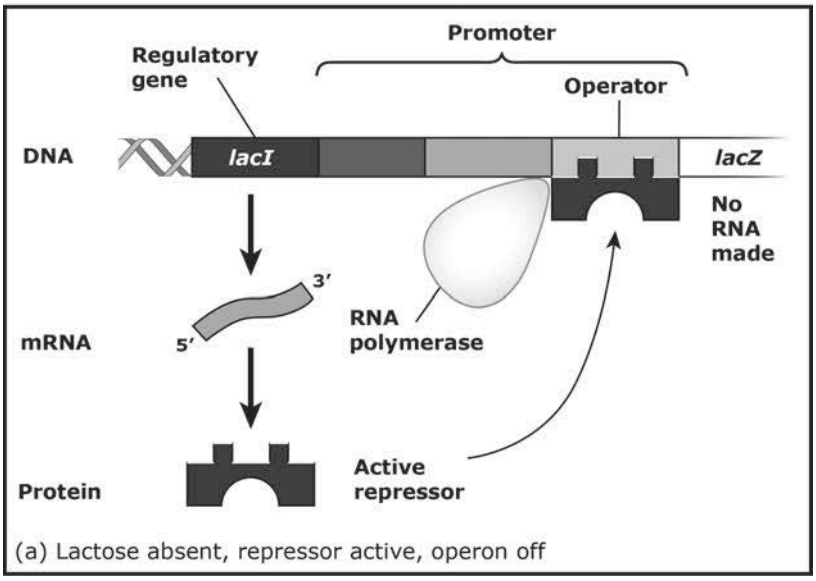
B 3

C 4

D 9

14 Some bacteria are able to digest milk because they have genes that code for proteins to help break down the sugar, lactose, in milk.

A Diagram of the Lac Operon



Source: slideshare.net

To code for the production of these enzymes in prokaryotes, the promoter and operator work as switches that activate or deactivate genes on the lac operon. This occurs during —

A reproduction

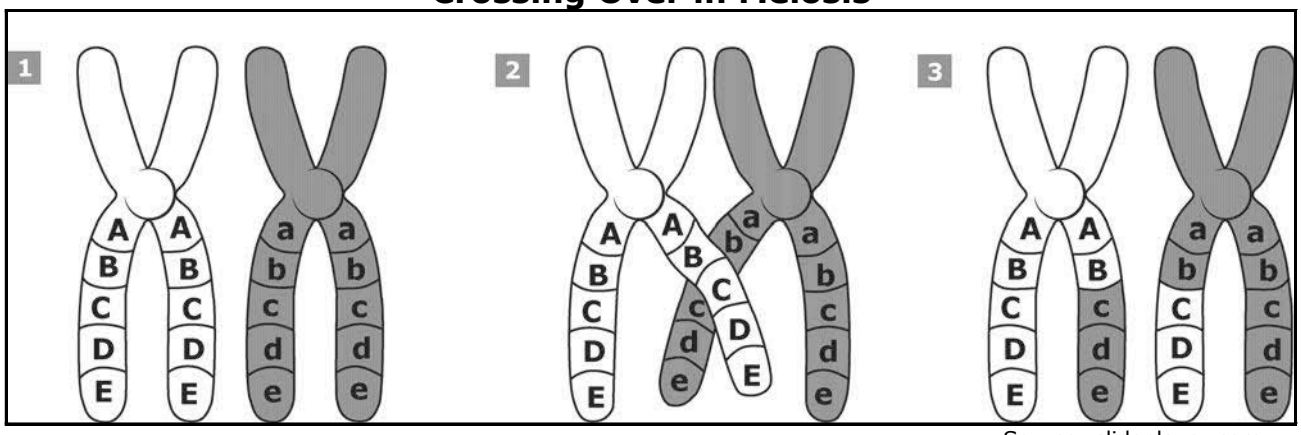
B replication

C transcription

D translation

Use the sequence to answer the next question.

Crossing Over in Meiosis



Source: slideplayer.com

15 What is the significance of crossing over during meiosis?

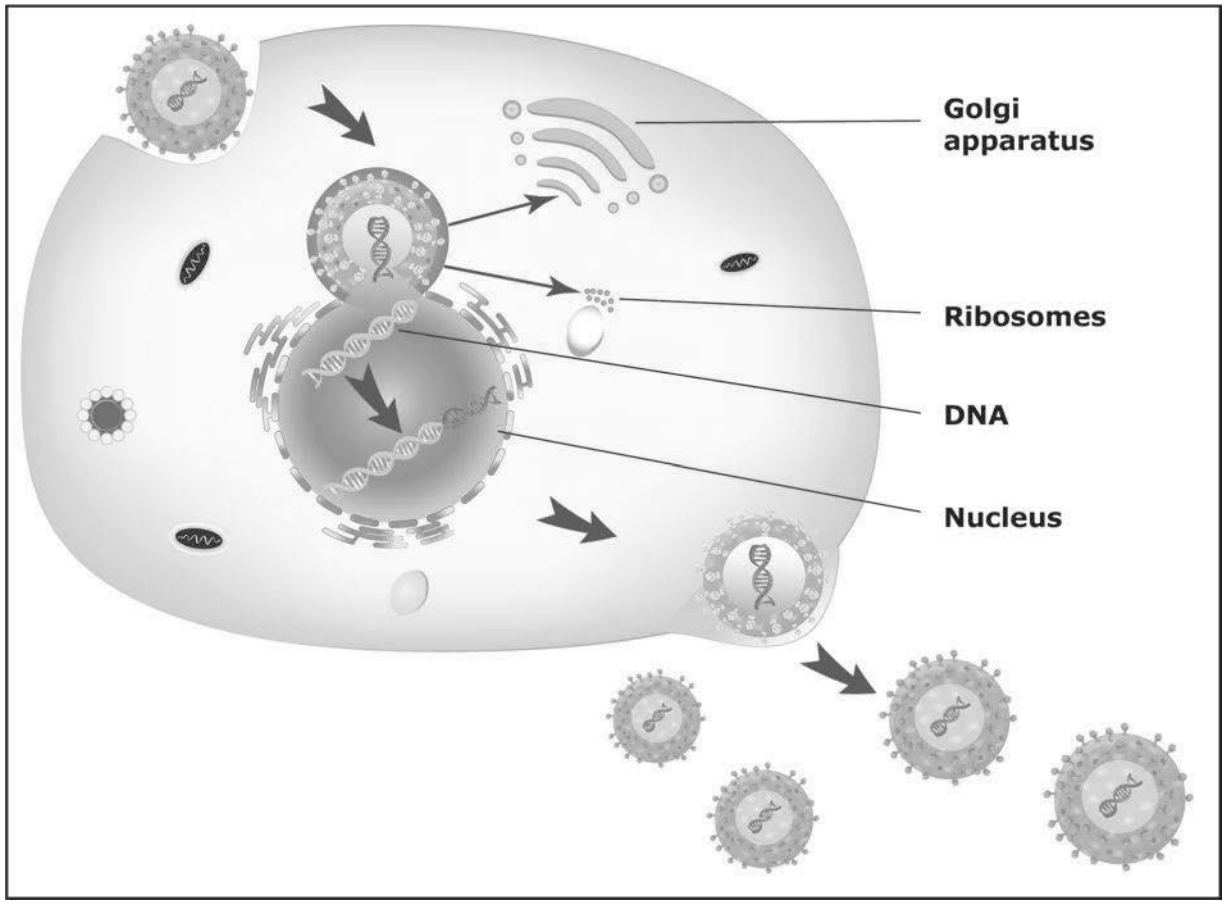
A Genes in the gametes recombine to increase genetic variation.

B Gametes duplicate and alter the number of chromosomes present at the end of meiosis.

C Gametes begin with 48 chromosomes and still have 48 at the end of meiosis.

D Genes replicate and ensure that the offspring have the same traits as the parents.

Use the diagram to answer the next question.



16 Which term describes the process illustrated in the diagram?

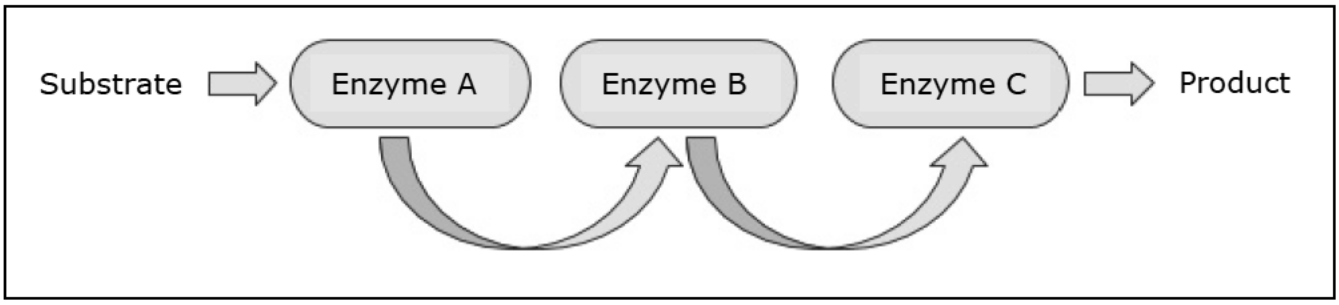
A Sexual reproduction

B Viral reproduction

C Mitotic reproduction

D Meiotic reproduction

17 Enzymes are molecules that speed up specific chemical reactions that occur in an organism. The diagram shows an enzymatic metabolic pathway.



What happens to this metabolic pathway when enzyme B is removed?

A The reaction skips enzyme B and goes to enzyme C.

B The reaction slows down.

C The reaction speeds up.

D The reaction stops.

EXAMPLE ITEMS Biology Pre-AP Key, Sem 1

Item#	Key	SE	Process Skills	SE Justification
1	C	B.6C	B.2H	Explain the…process of transcription…using models of DNA and RNA
2	A	B.5A	B.2F, B.2G	Describe the stages of the cell cycle, including…mitosis…
3	A	B.6E	B.2G	Identify changes in DNA and evaluate the significance of these changes
4	B	B.9B	--	Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, conversions, and matter
5	C	B.4B	--	Explain cellular processes, including homeostasis and transport of molecules
6	A	B.6A	--	Identify components of DNA…
7	A	B.6A	--	Identify…how information for specifying the traits of an organism is carried in the DNA
8	D	B.4B	--	Explain cellular processes, including homeostasis and transport of molecules
9	B	B.4A	B.2G	Compare…prokaryotic and eukaryotic cells…
10	D	B.5B	--	Describe the roles of DNA…
11	B	B.9A	--	Compare the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids
12	D	B.5C	--	Recognize that disruptions of the cell cycle lead to diseases such as cancer
13	B	B.6F	B.2G, B.2H	Predict possible outcomes of various genetic combinations such as…dihybrid crosses…
14	C	B.6D	--	Recognize that gene expression is a regulated process
15	A	B.6G	--	Recognize the significance of meiosis to sexual reproduction
16	B	B.4C	--	Compare the structures of viruses to cells, describe viral reproduction…
17	B	B.9C	--	Identify the role of enzymes