Victorian Certificate of Education
2017

STUDENT NUMBER | | | | | | | | | | Letter | |

BIOLOGY

Written examination

2017

Reading time: 15 minutes
Writing time: 2 hours 30 minutes

QUESTION AND ANSWER BOOK

Structure of book

Section	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	40	40	40
B	12	12	80
			Total 120

• Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
• Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.
• No calculator is allowed in this examination.

Materials supplied
• Question and answer booklet.
• Answer sheet for multiple-choice questions.

Instructions
• Write your **student number** in the space provided above on this page.
• Unless otherwise indicated, the diagrams in this booklet are **not** drawn to scale.
• All written responses must be in English.

At the end of the examination
• Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.
Choose the response that is **correct** or that **best answers** the question.
A correct answer scores 1, an incorrect answer score 0.
Marks will **not** be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

Use the following information to answer Questions 1 and 2.

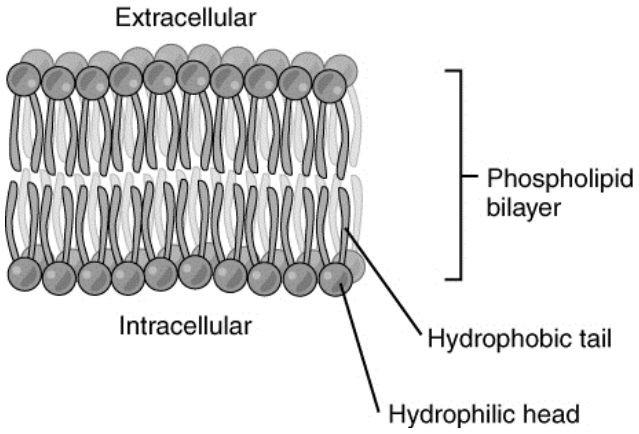
Jessie hypothesised that if she increased the amount of fertiliser given to her plants, then this would make them grow faster. She decided to conduct an experiment to test her prediction.

Question 1
The independent variable in Jessie's experiment would be
A. the speed of growth of the plants.
B. the amount of light the plants would be exposed to.
C. the type of plant used.
D. the amount of fertiliser given to the plants.

Question 2
If the measurement tool used by Jessie to assess speed of plant growth was faulty and produced consistently incorrect results, this would be an example of a
A. random error.
B. systematic error.
C. human error.
D. sample size error.

Question 3
Which of the following is not an example of an ethical principle when undertaking and reporting investigations?
A. respect privacy and confidentiality
B. do no harm
C. do not fabricate or falsify data or results
D. do not experiment on humans

Use the following information to answer Questions 4 and 5.

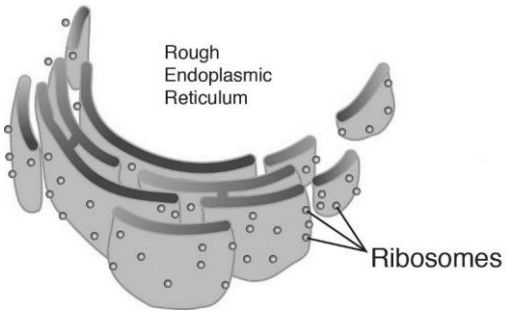


Source: http://www.macroevolution.net/fluid-mosaic-model.html

Question 4
The image above represents a section of a plasma membrane. Identify the molecule that would not be able to pass through this section.
A. water
B. glucose
C. carbon dioxide
D. lipid

Question 5
In which of the following processes does the plasma membrane play no role?
A. transcription
B. active transport
C. signal transduction
D. phagocytosis

Use the following information to answer Question 6.



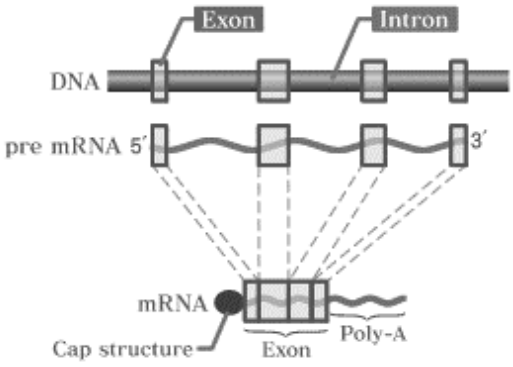
Source: https://www.emaze.com/@AIQOLRQW/Eukaryotic-Cells

Question 6
A function of the organelle above includes
A. to carry out photosynthesis.
B. packaging and transport of DNA.
C. synthesis and transport of proteins.
D. synthesis and transport of carbohydrates.

Question 7
DNA and RNA are both similar in that they
A. are both composed of a double helix.
B. both contain the sugar deoxyribose.
C. are both translated at the ribosome.
D. are both composed of nucleotides.

Question 8
Tertiary structure
A. involves amino acid side chains bonding in a number of ways.
B. does not influence the function of a protein.
C. is composed of one or more polypeptide chins.
D. is characterised by alpha helices and beta pleated sheets.

Use the following information to answer Question 9.

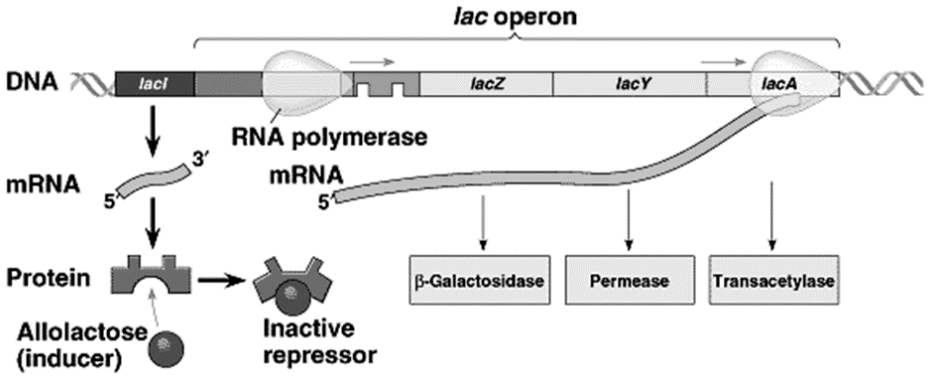


Source: http://csls-text.c.u-tokyo.ac.jp/images/fig/fig03_8.gif

Question 9
The image above depicts
A. translation.
B. RNA processing,
C. reverse transcription.
D. the polymerase chain reaction.

Question 10
The genetic code is a degenerate triplet code; this means
A. there are three parts of a nucleotide.
B. that DNA and RNA are composed of only three different bases.
C. one codon may code for three different amino acids.
D. several different codons may code for the same amino acid.

Use the following information to answer Questions 11 and 12.



Source: http://www.namrata.co/wp-content/uploads/2013/05/Lac-operon-On.png

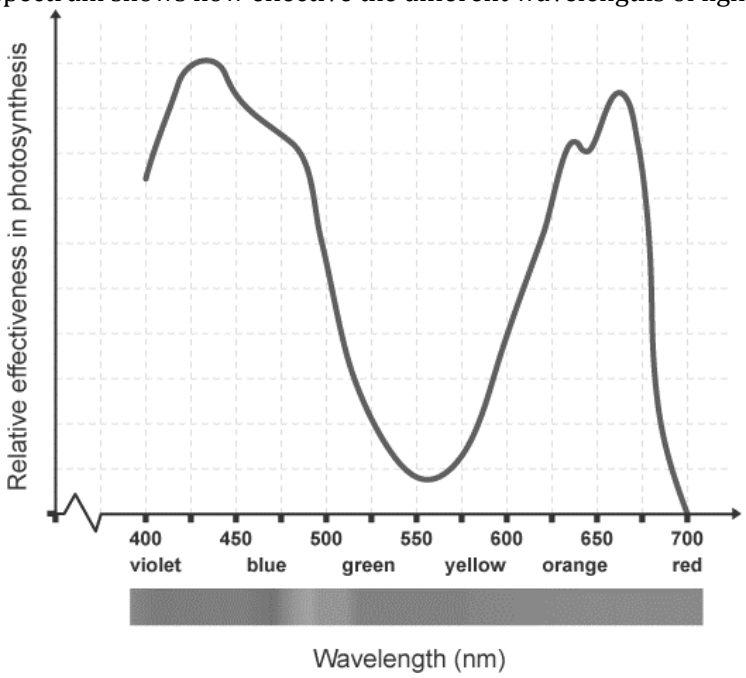
Question 11
In the image above lacZ, lacY and lacA are examples of
A. structural genes.
B. enzymes.
C. regulatory genes.
D. inhibitors.

Question 12
The site where RNA polymerase attaches is the
A. regulatory gene.
B. operator region.
C. promoter region.
D. ribosome.

Question 13
Coenzymes
A. only have a loaded form.
B. only move energy between reactions in the cell.
C. move energy and electrons between reactions in the cell.
D. move energy, electrons and protons between reactions in the cell.

Use the following information to answer Question 14.

The following action spectrum shows how effective the different wavelengths of light are for photosynthesis.



Source: http://www.bbc.co.uk/education/guides/z23ggk7/revision/2

Question 14

Which of the following statements is most consistent with the information presented in the graph?

A. photosynthesis is likely to occur at the highest rate at midday when the wavelengths of light being absorbed by a plant are most likely to be 670nm

B. the light dependent stage of photosynthesis would not occur if wavelengths of light of only 550nm were present

C. it would be expected that a plant will produce the highest rate of glucose if exposed to approximately 425nm wavelengths of light

D. photosynthesis would continue throughout the night as moonlight contributes light of wavelength approximately 650nm

Question 15

Evidence that supports the bacterial origin of chloroplasts includes the

A. presence of ribosomes.

B. presence of a double membrane.

C. both A and B.

D. presence of a cell wall.

Question 16

Anaerobic respiration

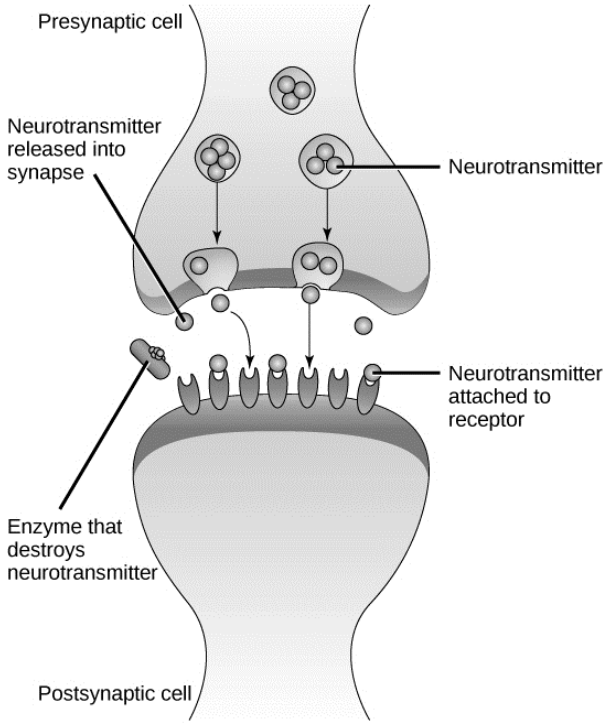
A. is the body's preferred form of energy production.

B. is more efficient than aerobic respiration.

C. is carried out in the mitochondria.

D. requires more than one input.

Use the following information to answer Question 17.



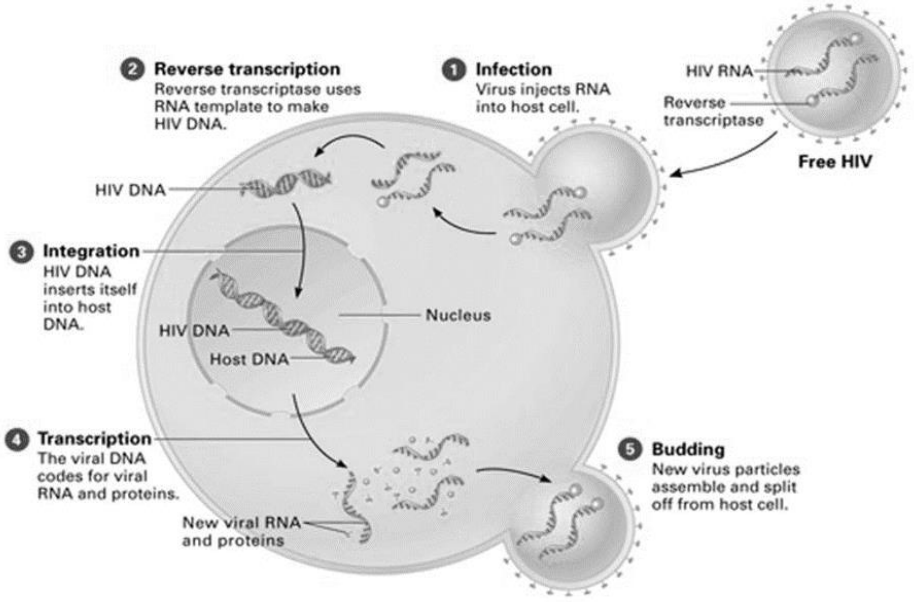
Source: https://qubeshub.org/groups/summer2017

Question 17
The image above depicts
A. pheromones in action.
B. a hydrophilic signalling molecule in action.
C. a hydrophobic signalling molecule in action.
D. rational drug design in action.

Question 18
Apoptosis
A. is tightly regulated.
B. can only be triggered by an external signalling molecule.
C. is the only cell process that can malfunction and result in cancer.
D. is less likely to malfunction as people age.

Question 19
Different antigen-binding sites on different antibodies
A. is a result of the type of pathogen that infects a host.
B. is a result of the recombination of genetic material that codes for this region.
C. leads to an individual being able to produce many types of T helper cells.
D. is a form of passive immunity.

Use the following information to answer Question 20.



Source: http://slideplayer.com/slide/10260209/

Question 20

This image demonstrates that HIV

A. is cellular.
B. is an adenovirus.
C. is a retrovirus.
D. is unlikely to kill its host cell.

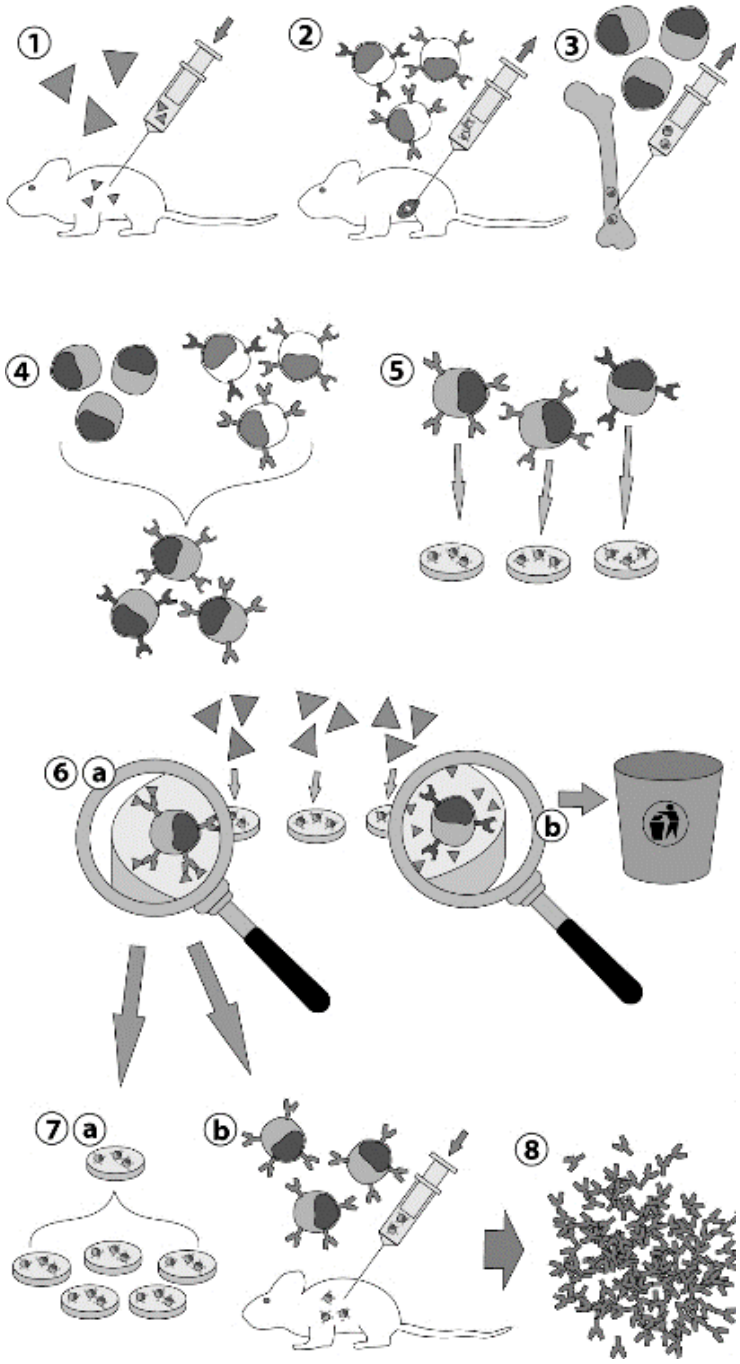
Question 21

A doctor may prescribe a broad-spectrum antibiotic to treat a suspected bacterial infection. A disadvantage of using a broad-spectrum antibiotic is

A. it may contribute to the development of antibiotic resistance.
B. it will slow the ability of a doctor to treat an infection quickly.
C. it will kill only one type of bacteria.
D. it will also remove the lining of the stomach.

Use the following information to answer Questions 22 and 23.

The steps below outline the steps that may be taken to create monoclonal antibodies.



Source: http://www.antibodies-online.com/resources/16/1209/monoclonal-antibodies/

Question 22

At step 2

A. an antigen is injected into the mouse.
B. cancer cells are taken from the mouse.
C. B cells are taken from the mouse.
D. only antibodies are removed from the mouse.

Question 23

Monoclonal antibodies used to treat cancer in a human patient are a form of

A. passive immunity.
B. active immunity.
C. natural passive immunity.
D. artificial active immunity.

Use the following information to answer Questions 24 and 25.

A population of rabbits was thriving in its habitat until the introduction of a new family of foxes by the local farmer. The farmer wanted to reduce the rabbit numbers as they were eating much of his wheat crop. Prior to the introduction of the fox family, the rabbit population contained a 0.8 allele frequency for light fur (a) and a 0.2 allele frequency for dark fur (A). The fox family tended to hunt at night time where the light fur rabbits were easier to detect and capture.

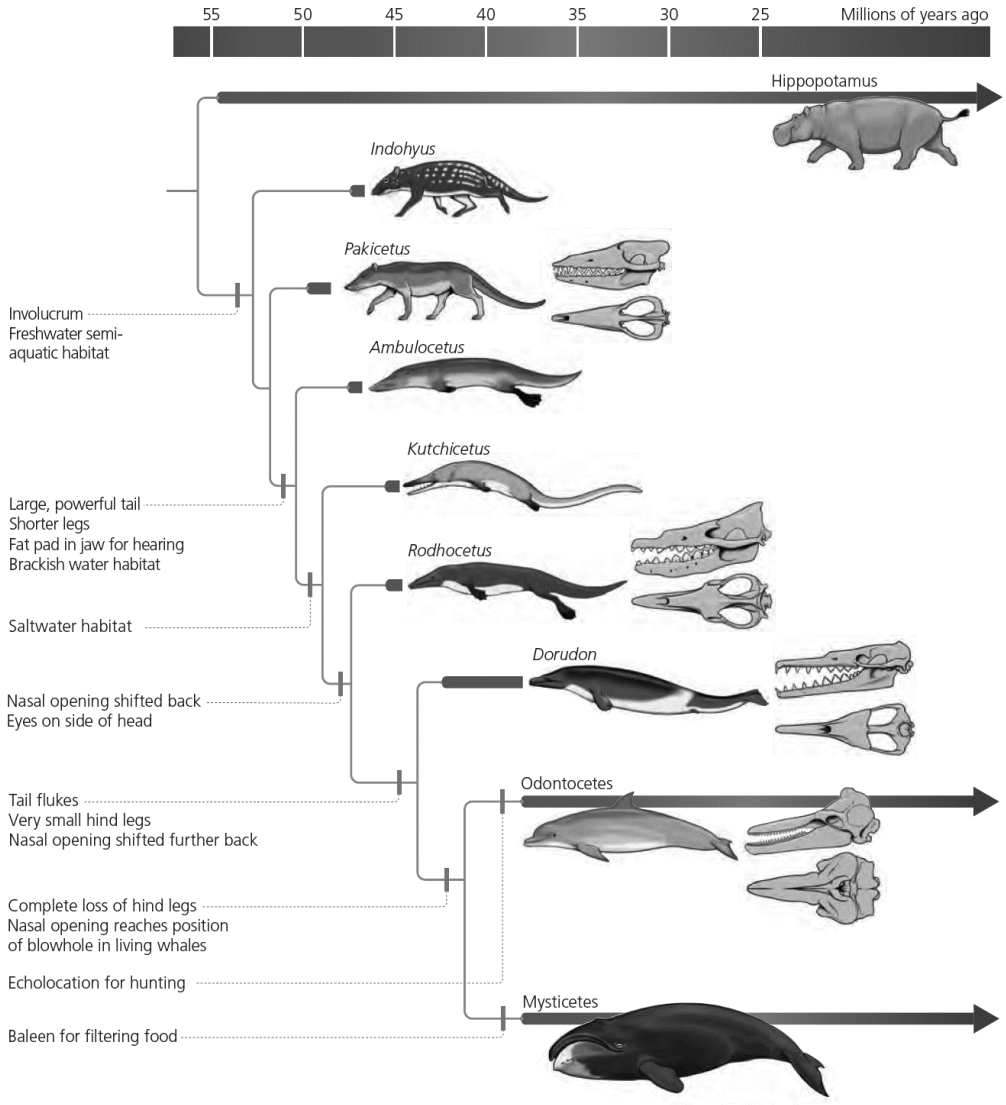
Question 24
After the introduction of the foxes, it is likely that over time
A. the allele frequency for fur colour would remain unchanged.
B. the allele frequency for dark fur would decrease.
C. the allele frequency for light fur would decrease.
D. a new type of fur colour would develop.

Question 25
The likely effect on the rabbit population over time due to the introduction of the foxes is an example of
A. the founder effect.
B. convergent evolution.
C. gene flow.
D. natural selection.

Question 26
Selective breeding
A. always increases genetic variation.
B. has no impact on the gene pool.
C. can have health implications for some species.
D. is limited to animal populations.

Question 27
The first flowering plants appeared in the
A. Precambrian period.
B. Cretaceous period.
C. Cambrian period.
D. Quaternary period.

Use the following information to answer Questions 28 and 29.



Source: http://phenomena.nationalgeographic.com/bigger-whale-tree/

Question 28

The information above suggests that Kutuchicetus

A. used echolocation for hunting.
B. was most closely related to mysticetes.
C. lived in saltwater.
D. hunted mainly freshwater fish.

Question 29

The image above depicts

A. divergent evolution.
B. convergent evolution.
C. analogous structures.
D. allopatric speciation.

Question 30

The following are all examples of trends in hominin evolution except

A. the anterior movement of the foramen magnum.
B. an increase in brain case size.
C. a decrease in size of the teeth.
D. a decrease in size of the heel bone.

Use the following information to answer Question 31.

Many biologists and social scientists have noted that with the development of human culture, the biological evolution of *Homo sapiens* was taken over by socio-cultural evolution. The construction of artificial environments and social structures created new criteria for selection, and biological fitness was replaced by 'cultural fitness', which is often different for different cultures and is generally not measured by the number of offspring. Moreover, the mechanism of socio-cultural evolution is different from the model of biological evolution that was proposed by Charles Darwin (1809–1882), and refined by many others. In essence, socio-cultural evolution is 'Lamarckian' in nature—it is an example of acquired inheritance, as described by the French naturalist Jean-Baptiste Lamarck (1744–1829)—because humans are able to pass on cultural achievements to the next generation.

Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3327546/

Question 31

This information suggests

A. cultural evolution is solely linked to one's gene.
B. cultural evolution is likely to be quicker than biological evolution.
C. biological evolution is likely to be taken over by cultural evolution in all species.
D. Lamarck was more correct than Darwin when explaining the nature of evolution.

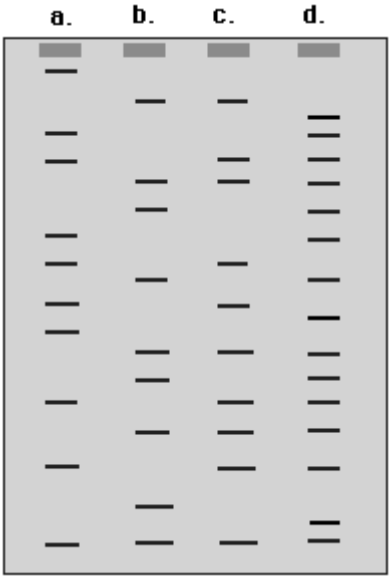
Question 32

The similarity between DNA and RNA polymerase is that

A. they both lead to the production of semi-conservative molecules.
B. they both act outside the nucleus.
C. they both create a nucleic acid strand consisting of complementary nucleotides in a 3' – 5' direction.
D. they both read DNA in a 3' – 5' direction.

Use the following information to answer Question 33.

The image below depicts a gel electrophoresis run from a husband (a) and wife (b).



Source: http://www.pleasanton.k12.ca.us/avhsweb/thiel/bio/labs/gel_lab.html

Question 33

From the information above, which of the following statements is correct?

A. neither lane c or d is likely to be a child of the husband or wife
B. lane d is likely the child of the husband and wife
C. lane c is likely the child of the husband and wife
D. lane c and d are identical twins

Question 34

Transgenic organisms

A. contain genes from other species.
B. have had their own genetic material altered.
C. cannot be used to increase resistance to disease.
D. are restricted to plant species.

Use the following information to answer Question 35.

Late in the spring of 1918 the Spanish wire service Agencia Fabra sent cables of an unusual nature to Reuter's news service headquarters in London. "A strange form of disease has appeared in Madrid," it said. "The disease is of a mild nature, no deaths having been reported." The illness began with a cough, then headache and backache, fatigue, high fever, racing heart, loss of appetite and labored breathing. It usually lasted about three days. Cases had cropped up over the spring and summer in other countries, too, from Norway to India, China to Costa Rica. But in Spain, suddenly 8 million people were down with the bug. And as the summer of 1918 turned to fall, the disease lost its mildness: people started to die.

The influenza commonly called "Spanish flu" killed more people than the guns of World War I. Estimates put the worldwide death toll at 21,642,274. Some one billion people were affected by the disease -- half of the total human population. It came at a time when 19 nations were at war and the disruption, stress, and privation of war certainly aided the flu's transmission. It killed people on every continent except Antarctica, with the most lives lost in Asia and the highest percentage of population killed in India. From August 1918, when cases of the flu started looking abnormally high, until the following July when they returned to about normal, 20 million Americans became sick and more than 500,000 died. In October, 1918, the flu reached its peak, killing about 195,000 Americans. About 57,000 American soldiers died from influenza while the U.S. was at war; about 53,500 died in battle.

Source: http://www.pbs.org/wgbh/aso/databank/entries/dm18fl.html

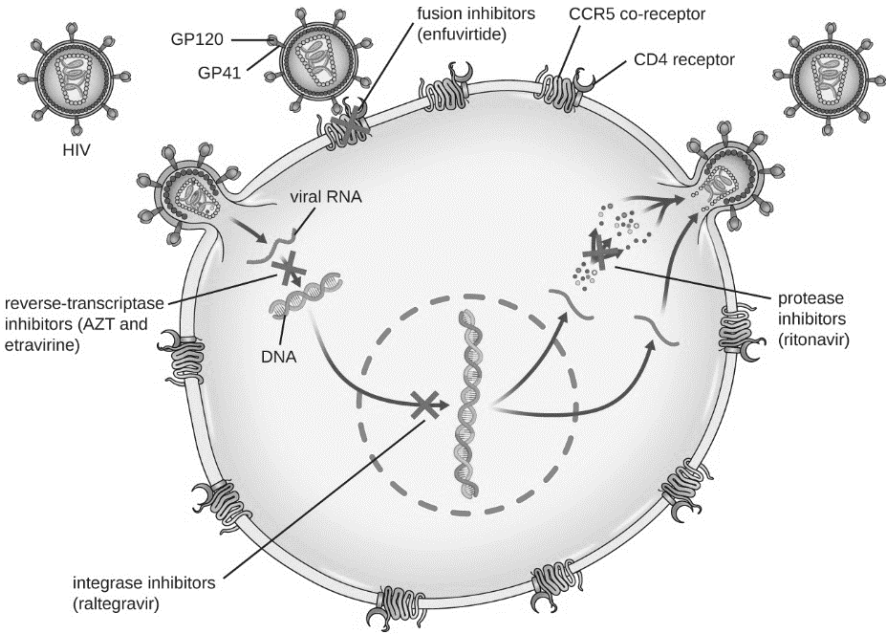
Question 35

The 'Spanish flu' is an example of a/an

A. epidemic.
B. pandemic.
C. vector.
D. genetically modified organism.

Use the following information to answer Question 36.

The image below depicts HIV infection and locations where antiviral drugs can act in an attempt to limit the infection.



Source: http://cnx.org/contents/3IiHYUow@3/Mechanisms-of-Other-Antimicrob

Question 36

This image demonstrates that antiviral drugs cannot

A. inhibit viral entry to a host cell.
B. inhibit the production of proteins essential to the assembly of new viruses.
C. inhibit the insertion of the viral genome into the host cell DNA.
D. inhibit new viruses from leaving the host cell.

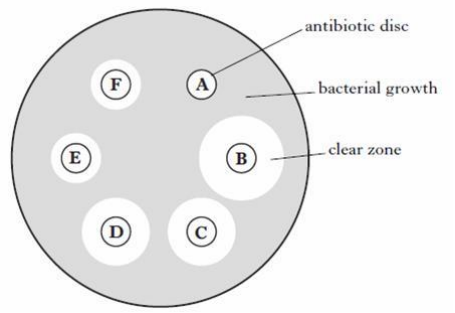
Question 37
Which of the following statements is correct concerning experimental design?
A. qualitative data is usually concerned with measuring things
B. qualitative data is usually concerned with analysing themes
C. semi-structured interviews are usually the method of choice for quantitative data collection
D. a hypothesis is a statement of fact

Question 38
In a scientific report
A. acknowledgement of references is not required.
B. scientists should consider all data collected when determining a conclusion, even data that has been manipulated to achieve a desired outcome.
C. when drawing a graph the independent variable is represented on the horizontal axis while the dependent variable is represented on the vertical axis.
D. possible sources or error are not acknowledged.

Question 39
A measurement is valid if
A. it measures what it claims to be measuring.
B. controlled variables have been allowed to change in an experiment.
C. the results are reproducible.
D. all of the above.

Use the following information to answer Question 40.

A patient was found to be suffering from a bacterial infection caused by unknown bacteria. The bacteria's sensitivity to different antibiotics (A-F) was tested. The results are shown in the plate below.



Source: https://blogs.glowscotland.org.uk/gc/hydnsecscis2revision/microbiology-1/

Question 40
From the image, it can be concluded that
A. antibiotic A was more effective than antibiotic E.
B. antibiotic B was least effective.
C. antibiotic C and D were equally effective.
D. none of the antibiotics should be used to treat this bacterial infection.

SECTION B – Short-answer questions

Instructions for Section B

Answer **all** questions in the spaces provided. Write using blue or black pen.

Question 1 (4 marks)

a. Draw and label a cell engulfing material via the process of endocytosis. 3 marks

b. Outline why a cell may engage in endocytosis. 1 mark

Question 2 (7 marks)

Messenger RNA Codons and Amino Acids for Which They Code

First base	Second base: U	Second base: C	Second base: A	Second base: G	Third base
U	UUU, UUC: PHE UUA, UUG: LEU	UCU, UCC, UCA, UCG: SER	UAU, UAC: TYR UAA, UAG: STOP	UGU, UGC: CYS UGA: STOP UGG: TRP	U C A G
C	CUU, CUC, CUA, CUG: LEU	CCU, CCC, CCA, CCG: PRO	CAU, CAC: HIS CAA, CAG: GLN	CGU, CGC, CGA, CGG: ARG	U C A G
A	AUU, AUC, AUA: ILE AUG: MET or START	ACU, ACC, ACA, ACG: THR	AAU, AAC: ASN AAA, AAG: LYS	AGU, AGC: SER AGA, AGG: ARG	U C A G
G	GUU, GUC, GUA, GUG: VAL	GCU, GCC, GCA, GCG: ALA	GAU, GAC: ASP GAA, GAG: GLU	GGU, GGC, GGA, GGG: GLY	U C A G

Source: http://iamqc.blogspot.com.au/2010/05/programming-fundamentals-in-biomedical.html

The following DNA sequence comes from a gene found on chromosome 4.

TTACTGGAACTGCGA

This DNA sequence contributes to producing a polypeptide which forms part of an enzyme involved in the breakdown of a specific carbohydrate.

a. Name the enzyme that is involved in converting this sequence of DNA to RNA via the process of transcription. 1 mark

---

b. List the anticodon sequence that corresponds with this DNA sequence. 1 mark

---

c. List the amino acid sequence that corresponds with this DNA sequence. 1 mark

---

A mutation occurred to the original DNA sequence and the following is the new DNA sequence following the mutation:

TTACTGG**C**AACTGCGA

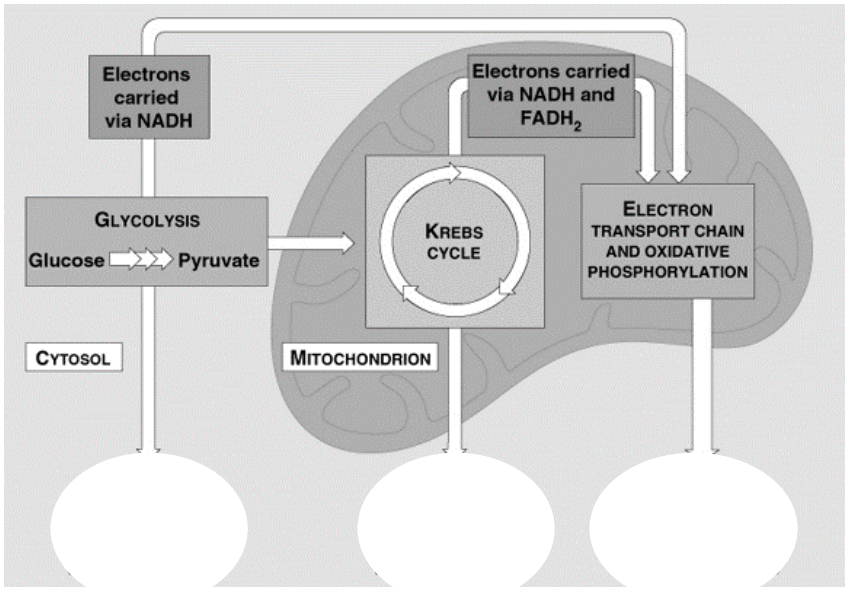
d. Name the type of mutation that occurred. 1 mark

---

e. Describe the impact that this mutation would have on the polypeptide produced. How may this then impact on an individual? 3 marks

Question 3 (8 marks)

The following diagram depicts the stages in aerobic respiration. Several of the outputs from each stage have been obstructed from view.



Source: http://www.instruction.greenriver.edu/kmarr/Biology%20211/Lecture%20Notes/Cellular%20Respiration%20Webpage/Respiration%20Web%20Notes.html

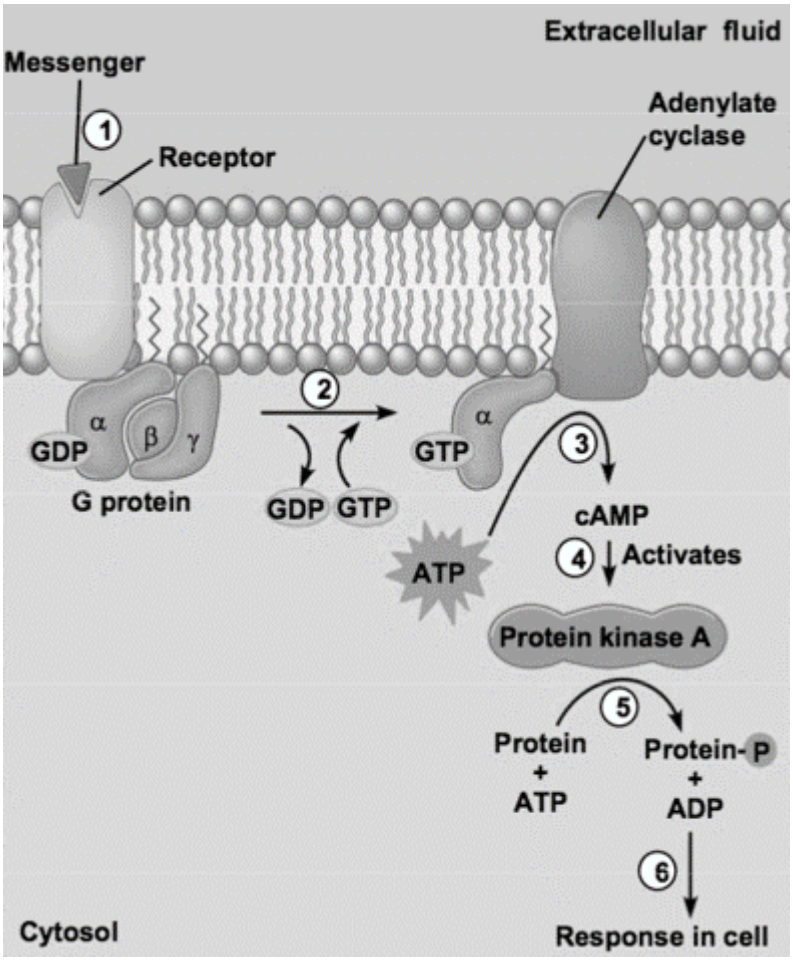
a. Describe the purpose of cellular respiration. 1 mark

b. List two outputs of the electron transport chain. 1 mark

c. Design an experiment that could test the effect of temperature on the rate of cellular respiration. 4 marks

d. What is a controlled variable? List one controlled variable from the experiment you have described in 3c. 2 marks

Question 4 (8 marks)
The following depicts a cell response following activation by a signalling molecule.



Source: http://classconnection.s3.amazonaws.com

a. List the nature of the signalling molecule in the diagram. 1 mark

b. List two features of the type of signalling molecule depicted in the image. 2 marks

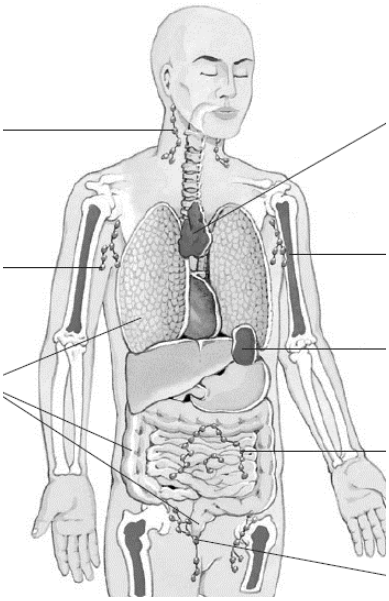
c. Steps 2-5 in the diagram are the part of the second step in signal transduction. Name this step and describe it. 2 marks

d. A scientist wished to prevent the particular cellular response depicted in the diagram. She decided to do this following the steps in rational drug design, targeting the enzyme protein kinase. Outline the steps the scientist would need to follow to achieve her aim. 3 marks

Question 5 (9 marks)

a. Outline the purpose of the lymphatic system. 1 mark

b. Label the location of the two primary lymphoid tissues. 2 marks



Source: https://www.lymphnet.org/sites/files/styles/inline-left/public/images/inline-images/lymphatic_system.jpg?itok=1iKMwxf

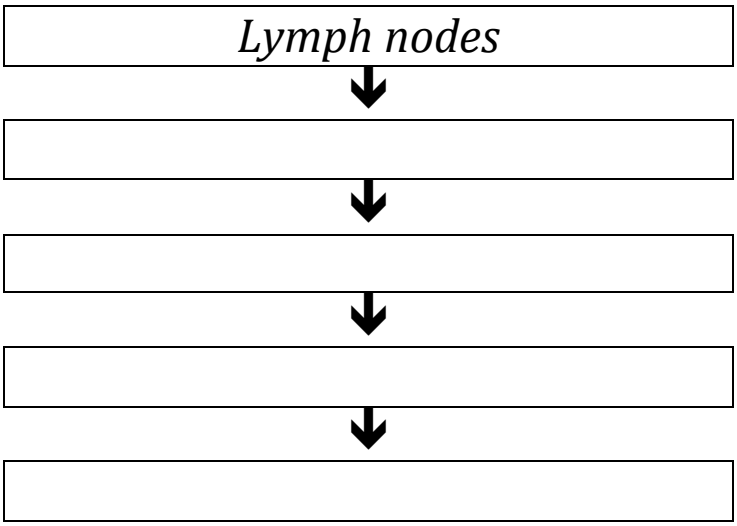
c. Complete the flow chart below using the following statements. 4 marks

Memory cells created

Site of antigen recognition

Secondary lymphoid tissue

B cells stimulated to undergo clonal expansion



d. The lymphatic system is different and similar in several ways to the circulatory system. List one difference and one similarity. 2 marks

Question 6 (8 marks)

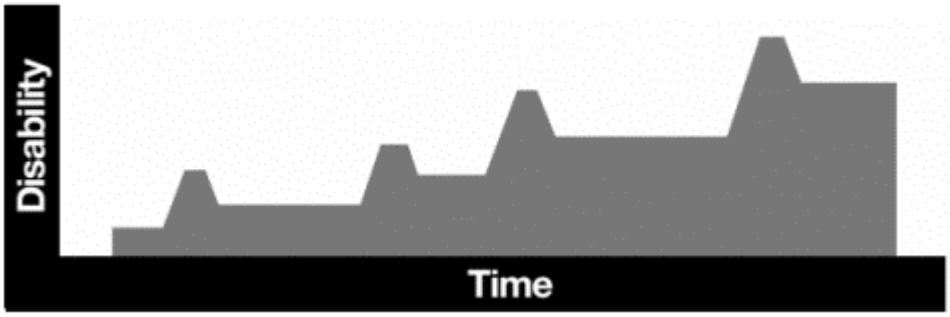
Multiple sclerosis (MS) is a condition of the central nervous system, interfering with nerve impulses within the brain, spinal cord and optic nerves. It is characterised by sclerosis; a Greek word meaning scars. These scars occur within the central nervous system and depending on where they develop, manifest into various symptoms.

MS affects over 23,000 in Australia and more than two million diagnosed worldwide. Most people are diagnosed between the ages of 20-40, but it can affect younger and older people too. Roughly three times as many women have MS as men.

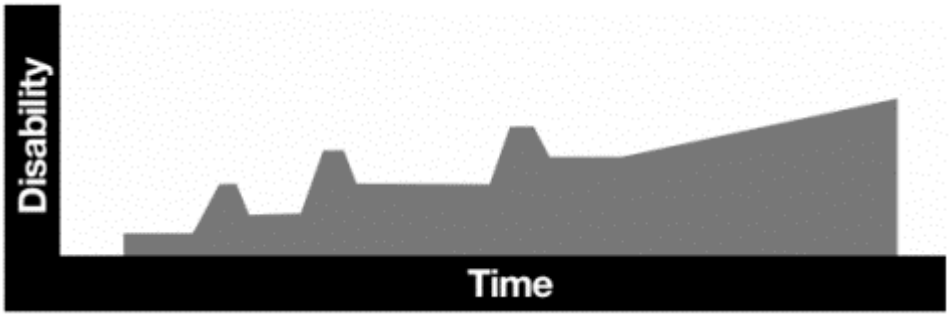
There is currently no known cure for MS however there are a number of treatment options available to help manage symptoms and slow progression of the disease.

Types of MS

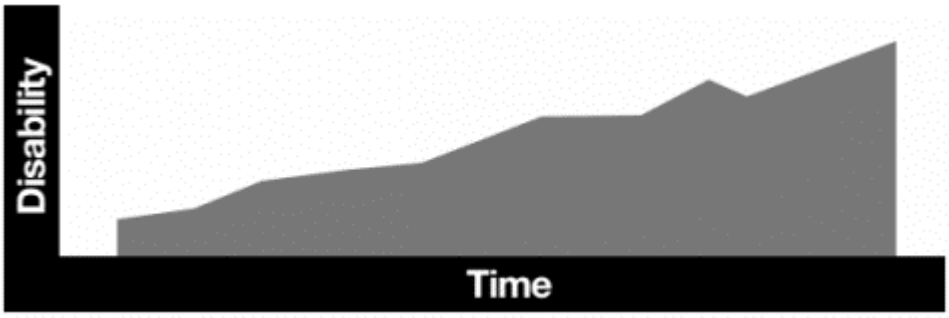
1. Relapsing-remitting (RRMS)
Relapsing-remitting (RRMS) - characterised by partial or total recovery after attacks (also called exacerbations, relapses, or flares). The most common form of MS. 70 to 75% of people with MS initially begin with a relapsing-remitting course.



2. Secondary progressive (SPMS)
Secondary progressive (SPMS) – a relapsing-remitting course which later becomes steadily progressive. Attacks and partial recoveries may continue to occur. Of the 70-75% who start with relapsing-remitting disease, more than 50% will develop SPMS within 10 years; 90% within 25 years.



3. Primary progressive (PPMS)
Primary progressive (PPMS) - a progressive course from onset. Symptoms generally do not remit. 15% of people with MS are diagnosed with PPMS, although the diagnosis usually needs to be made after the fact, when the person has been living for a period of time with progressive disability but not acute attacks.



Source: https://www.msaustralia.org.au/about-ms/types-ms

a. List and define the type of immune disease that MS is an example of. 2 marks

b. Scientists wished to trial a new drug to treat MS with the intention to prevent its progression. Explain which type of MS is likely to be easiest to monitor for improvement during a drug trial. 2 marks

c. Describe the evidence that scientists would need to gather to indicate that the drug is effective in treating the type of MS you named in 6b. 1 mark

d. A student suggested that a vaccination would be an easy method of treating MS. Outline whether or not you agree with this student and justify your response. 3 marks

Question 7 (6 marks)

a. Define evolution. 1 mark

b. List a source of new alleles in a population. 1 mark

c. Describe how your answer to 7b may lead to a new species. Use allopatric speciation as the basis of your response. 4 marks

Question 8 (5 marks)

1. The fossils remain within the rock until uncovered through erosion or excavation.

2. An organism dies and is buried before the remains are completely destroyed.

3. Dissolved minerals, transported by ground-waters in the sediment, fill tiny spaces in the bones. The combination of pressure, chemical reactions and time eventually turns the sediments into rock and the bones into mineralised fossils.

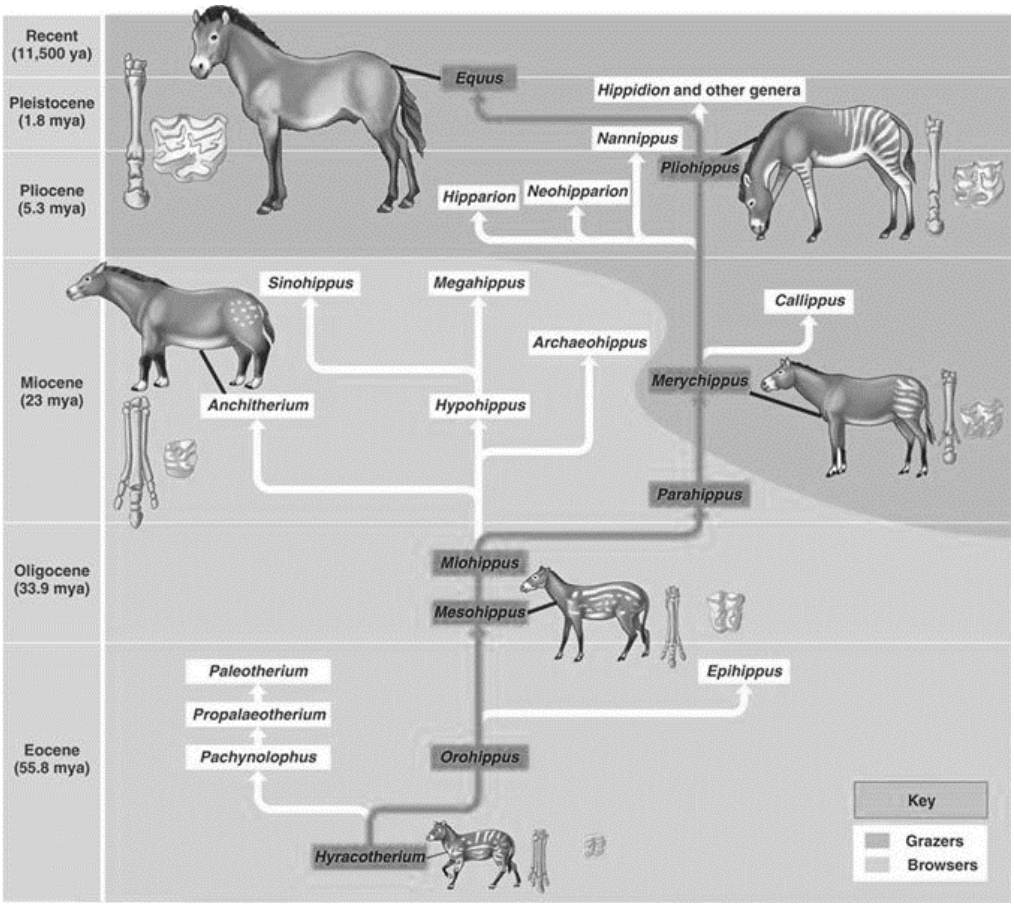
4. Over time, layers of sediment build up and press down on the buried remains.

a. List the numbers from the information above that would correspond with the correct sequence of steps in fossilisation. 1 mark

b. List two trends in life forms in Earth's geological history that can be observed from examining the fossil record. 2 marks

c. Describe the evidence in the fossil record that would indicate a mass extinction event is likely to have occurred. List an example of an event that may have led to mass extinction. 2 marks

Question 9 (5 marks)



Source: https://s-media-cache-ak0.pinimg.com/736x/1f/bb/20/1fbb2013fa69d034e23c38261eaa271e--prehistoric-animals-extinct-animals.jpg

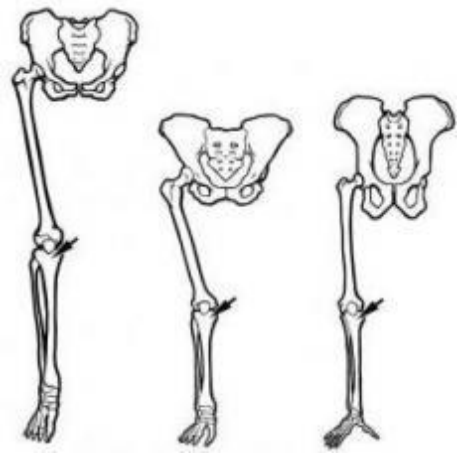
a. Name the type of diagram above that is used to demonstrate relatedness between species. 1 mark

b. The DNA hybridisation technique was used to establish the relatedness between some of the species in the diagram above. List the species that is most likely to have the most similar DNA to Hipparion. 1 mark

c. Describe the steps in the DNA hybridisation technique. 3 marks

Question 10 (7 marks)

Below are drawings of lower knee bones of a chimpanzee (right), early human (middle), and modern human (left). The chimpanzee knee joint is lightly built, so chimpanzees cannot rest their weight on one leg at a time to walk for long periods. The early human knee joint was strong, enabling this early human to regularly support its weight on one leg at a time during walking.



Source: http://humanorigins.si.edu/human-characteristics/walking-upright

a. Use the image above to provide an **additional** reason why modern day humans are better suited to walking upright for long periods than chimpanzees. 1 mark

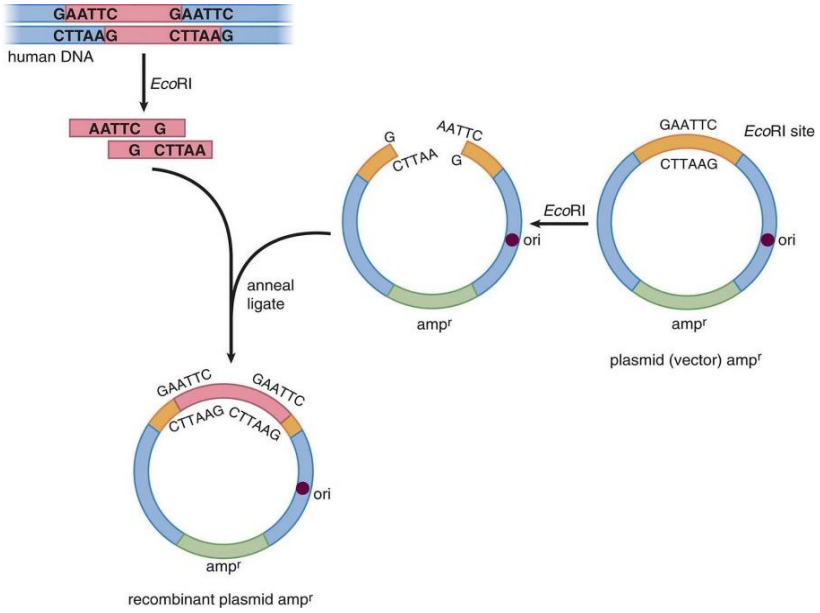
b. List two reasons why walking upright may have assisted early humans to survive. 2 marks

c. Describe how walking upright may have influenced cultural evolution in modern day humans. 2 marks

d. A chimpanzee is an example of a primate, as are modern day humans. List two other examples of primates. 2 marks

Question 11 (10 marks)

The following is a summary of part of a process that can be used to clone a gene. The recombinant plasmid can be taken up by a bacterial cell and then copies of the required gene can be made. The 'amp^r' gene provides resistance to the antibiotic ampicillin.



Source: http://schoolbag.info/chemistry/mcat_biochemistry/mcat_biochemistry.files/image149.jpg

a. What is EcoRI an example of? Describe the function of this molecule in the given scenario. 3 marks

b. Why may scientists have incorporated the amp^r gene into the plasmid? 2 marks

c. List two modes of action regarding how antibiotics may kill bacteria or prevent them replicating. 2 marks

d. Bacteria are often the choice of scientists for gene cloning and studying gene expression. Provide two reasons why this may be the case. 2 marks

e. Name the process where bacterial cells take up a plasmid and express the genes of the plasmid. 1 mark

Question 12 (3 marks)

a. What is a genetically modified organism? 1 mark

b. List two examples of why a farmer may want to genetically modify a food crop. 2 marks

END OF QUESTION AND ANSWER BOOK

Extra space for responses

Clearly number all responses in this space.

VCE BIOLOGY

Written Examination

ANSWER SHEET – 2017

STUDENT NAME:

Use a **PENCIL** for **ALL** entries. For each question, shade the box which indicates your answer.

Marks will **NOT** be deducted for incorrect answers.

NO MARK will be given if more than one answer is completed for any question.

If you make a mistake, **ERASE** the incorrect answer – **DO NOT** cross it out.

1	A	B	C	D	15	A	B	C	D	29	A	B	C	D
2	A	B	C	D	16	A	B	C	D	30	A	B	C	D
3	A	B	C	D	17	A	B	C	D	31	A	B	C	D
4	A	B	C	D	18	A	B	C	D	32	A	B	C	D
5	A	B	C	D	19	A	B	C	D	33	A	B	C	D
6	A	B	C	D	20	A	B	C	D	34	A	B	C	D
7	A	B	C	D	21	A	B	C	D	35	A	B	C	D
8	A	B	C	D	22	A	B	C	D	36	A	B	C	D
9	A	B	C	D	23	A	B	C	D	37	A	B	C	D
10	A	B	C	D	24	A	B	C	D	38	A	B	C	D
11	A	B	C	D	25	A	B	C	D	39	A	B	C	D
12	A	B	C	D	26	A	B	C	D	40	A	B	C	D
13	A	B	C	D	27	A	B	C	D					
14	A	B	C	D	28	A	B	C	D					