

# Template with Answers



## ASMR Medical Research Week® 2009 Medical Research Quiz

### 1. Medical Researchers



*Dr Ian Frazer*

<https://grants.innovation.gov.au>

**Australian Scientist, Dr Ian Frazer, received the 2008 Prime ministers prize for science for his ground breaking work on:**

- A) Kidney transplantation
- B) Human herpes viru
- C) Avian influenza
- D) Human papilloma virus

### 2. Medical researchers



[www.australianoftheyear.org.au](http://www.australianoftheyear.org.au)

**Which of the following winners of the Australian of the Year award also won the Nobel prize for medicine?**

- A) Sir John Cornforth AC CBE
- B) Sir Gustav Nossal AC CBE FAA FRS
- C) Professor Peter Doherty AC FAA
- D) Professor Fiona Stanley AC FAA

### 3. Stem Cells

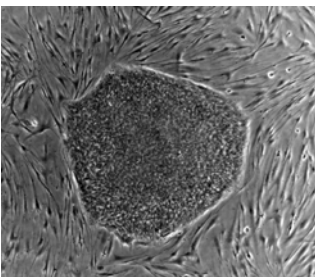


*Laboratory mice*

**If a scientist used the somatic cell transfer method of cloning to clone a mouse, what colour would the baby mouse be if: The egg cell donor mouse is brown, the somatic cell donor mouse is black and the surrogate mother mouse is white?**

- A) Brown
- B) Black
- C) White
- D) A mixture of brown, black and white

### 4. Stem cells

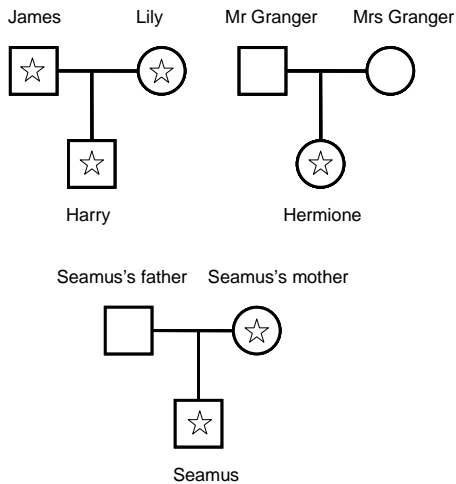


**Which of the below correctly describes the stem cell differentiation pathway?**

- A) Totipotent – pluripotent – progenitor – terminal
- B) Pluripotent – totipotent– progenitor – terminal
- C) Progenitor – totipotent – pluripotent – terminal
- D) Progenitor – pluripotent – totipotent – terminal

Embryonic stem cells in a culture dish

### 5. Genetics



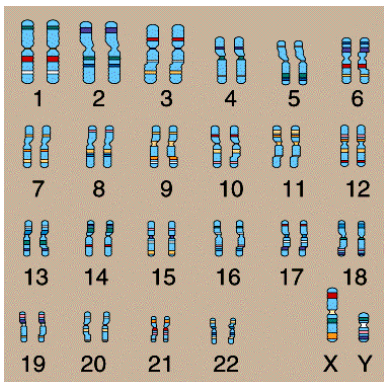
*Pedigrees for Harry, Hermione and Seamus, with a star indicating a wizard or a witch*

© Murdoch Childrens Research Institute 2008

**In the Harry Potter book series, the pattern of inheritance for being a wizard or a witch is:**

- A) X-linked dominant
- B) X-linked recessive
- C) Autosomal dominant
- D) Autosomal recessive

### 6. Genetics



<http://www.treachercollins.co.uk/gene/chrom.gif>

**Treacher Collins syndrome is a disorder that affects the development of the face. The mode of inheritance is:**

- A) Autosomal
- B) X-linked
- C) Autosomal dominant
- D) Autosomal recessive

### 7. Human Development

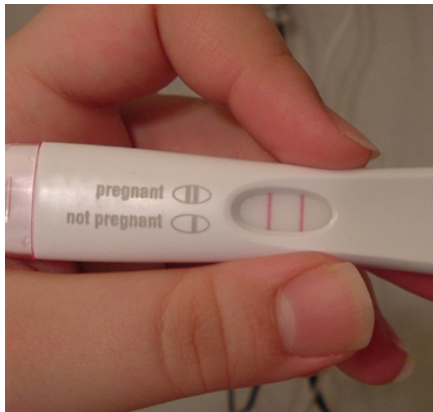


Leonardo da Vinci's Embryo in the Uterus

**What is the length of a normal human pregnancy?**

- a) 30 weeks
- b) 36 weeks
- c) 40 weeks
- d) 44 weeks

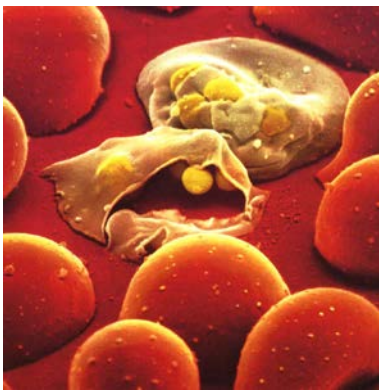
## 8. Human Development



**Pregnancy tests are based on detecting which hormone in urine?**

- A) Estrogen
- B) Follicle stimulating hormone
- C) Gonadotrophin releasing hormone
- D) Human chorionic gonadotrophin

## 9. Health



*Cells infected with malaria*

<http://www.biology.ccsu.edu/don/ProjectHope/Malaria%20red.jpg>

**Malaria is an infectious disease that kills 2 million people each year. The malaria infection causes illness is due to**

- A) Plasmodium falciparum
- B) Trypanosoma cruzi
- C) Toxoplasma gondii
- D) Giardia lamblia

## 10. Health



*Consumption of alcohol during pregnancy affects embryonic development*

**In 2009, the National Health and Medical Research Council of Australia recommended that the safe level for alcohol consumption during pregnancy is:**

- A) Less than seven standard drinks per week
- B) No alcohol
- C) Less than three standard drinks per day
- D) Less than a blood alcohol reading of 0.05%

## 11. The Immune System

**Human immunodeficiency virus type I (HIV-1) causes acquired immune deficiency syndrome (AIDS) and is thought to have originated by cross-species transmission into**



The HIV virus

<http://wever.files.wordpress.com/2008/03/3d-hiv-model.jpg>

humans. From which animal did the closest relative of HIV-1 come from?

- A) Sheep
- B) Bats
- C) Chimpanzee
- D) Gorilla

**12. The Immune System**



The dengue fever virus is transmitted by which species of mosquito in North Queensland?

- A) Aedes aegypti
- B) Culex annulirostris
- C) Anopheles gambiae
- D) Aedes vigilax

**13. The Scientific Method**



Sir Isaac Newton “discoverer” of gravity.

What type of scientific reasoning starts with specific observations and then develops a general theory?

- A) Deductive
- B) Inductive
- C) Conductive
- D) Conclusive

**14. The Scientific Method**



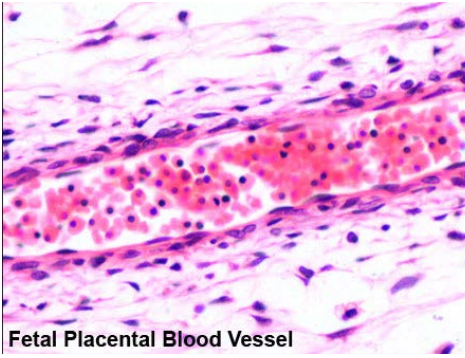
Ockhams razor?

After a heavy thunderstorm, you notice a tree has fallen over in the park. Applying Ockham’s razor leads you to conclude that:

- A) The tree was infected with a rare tropical disease that caused it to rot and fall over
- B) A car lost control and knocked it over
- C) The tree was struck by lightning
- D) A pink elephant fell out of a passing plane and hit the tree

**15. Blood**

A blood vessel is made up of several layers. Which of the



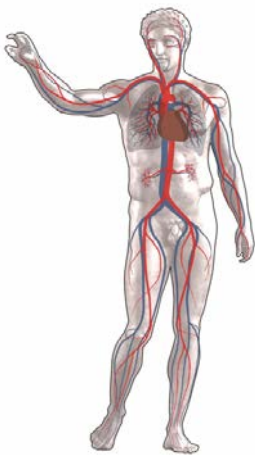
Fetal Placental Blood Vessel

<http://embryology.med.unsw.edu.au/notes/Placenta.htm>

following is not part of a blood vessel?

- A) Intima
- B) Decidua
- C) Media
- D) Adventitia

### 16. Blood

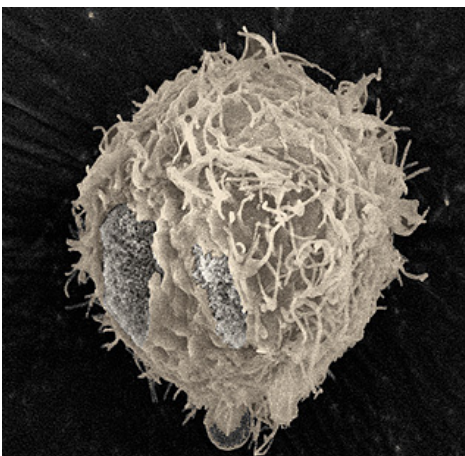


[http://en.wikipedia.org/wiki/Circulatory\\_system](http://en.wikipedia.org/wiki/Circulatory_system)

Arteries and veins carry blood around the body. Which of the following is correct?

- A) The pulmonary artery carries oxygenated blood from the heart and the pulmonary vein carries deoxygenated blood to the heart
- B) The vena cava carries oxygenated blood to the heart and the aorta carries deoxygenated blood from the heart
- C) The vena cava carries oxygenated blood to the heart and the pulmonary vein carries deoxygenated blood from the heart
- D) The aorta carries oxygenated blood from the heart and the pulmonary vein carries oxygenated blood to the heart

### 17. Cancer



A prostate cancer cell

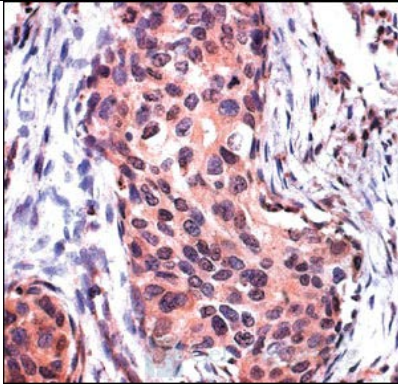
Prostate cancer has one of the largest mortality rates of all cancers. The prostate is part of the:

- A) Male reproductive system
- B) Female reproductive system
- C) Nervous system
- D) Digestive system

### 18. Cancer

What form of cancer can be prevented by the Australian developed vaccine, Gardasil?

- A) Breast cancer



*Human Breast tumor histological section*

- B) Melanoma
- C) Multiple myeloma
- D) Cervical cancer

**19. Medical Research in Australia**



*Medical research in Australia is governed by strict ethical standards*

**According to current ethical standards for Australian Universities, which of the following animals or animal groups does not require ethics committee approval before they can be used in experiments?**

- A) Wildlife
- B) Fish
- C) Insects
- D) Crustaceans

**20. Medical Research in Australia**



<http://www.asmr.org.au>

**The Australian Society for Medical Research (ASMR) is the peak professional society representing and promoting Australian medical research. ASMR holds special events during Medical Research Week® every year. The 2009 Medical Research Week dates are:**

- A) Feb 29 – March 5
- B) March 29 – April 5
- C) April 29 – May 5
- D) May 29 – June 5

**Please direct your any queries to the ASMR quizmaster at [adam.hart@med.monash.edu.au](mailto:adam.hart@med.monash.edu.au)**

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**Some generic health, science and medical research websites**

Molecular Biology of the Cell

<http://www.betterhealth.vic.gov.au/>

<http://www.abs.gov.au/>

<http://www.health.gov.au/>  
<http://www.abc.net.au/science/>  
<http://www.science.org.au/nova/index.htm>  
[http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)  
<http://www.bbc.co.uk/sn/>

**ASMR 2009 QUIZ Answers and Web links:**

Website/s with background information required to answer the question

**1. D**

[https://grants.innovation.gov.au/SciencePrize/Pages/Doc.aspx?name=previous\\_winners/PM2008Fraser.htm](https://grants.innovation.gov.au/SciencePrize/Pages/Doc.aspx?name=previous_winners/PM2008Fraser.htm)

**2. C**

<http://www.australianoftheyear.org.au/pages/page22.asp>

[http://nobelprize.org/nobel\\_prizes/medicine/laureates/](http://nobelprize.org/nobel_prizes/medicine/laureates/)

**3. B**

[http://en.wikipedia.org/wiki/Somatic\\_cell\\_nuclear\\_transfer](http://en.wikipedia.org/wiki/Somatic_cell_nuclear_transfer)

**4. B**

<http://stemcells.nih.gov/info/scireport/chapter1.asp>

<http://www.csa.com/discoveryguides/stemcell/overview.php>

**5. D**

<http://www.nature.com/nature/journal/v436/n7052/full/436776a.html>

**6. C**

<http://www.treachercollins.co.uk/gene/genes.htm>

**7. C**

<http://en.wikipedia.org/wiki/Pregnancy>

**8. D**

<http://en.wikipedia.org/wiki/Pregnancy>

**9. A**

[www.who.int/topics/malaria/en/](http://www.who.int/topics/malaria/en/)

**10. B**

[http://www.nhmrc.gov.au/your\\_health/healthy/alcohol/alcoholqa.htm#q1](http://www.nhmrc.gov.au/your_health/healthy/alcohol/alcoholqa.htm#q1)

**11. C**

<http://www.thefreelibrary.com/HIV-related+viruses+still+cross+species.-a072058398>

<http://www.ncbi.nlm.nih.gov/pubmed/9989410>

**12. A**

[http://www.health.qld.gov.au/dengue/dengue\\_fever/mosquito.asp](http://www.health.qld.gov.au/dengue/dengue_fever/mosquito.asp)

**13. B**

[http://en.wikipedia.org/wiki/Inductive\\_reasoning](http://en.wikipedia.org/wiki/Inductive_reasoning)

**14. C**

**<http://www.utm.edu/research/iep/o/ockham.htm>**

**15. B**

**[http://en.wikipedia.org/wiki/Blood\\_vessel](http://en.wikipedia.org/wiki/Blood_vessel)**

**16. D**

**[http://en.wikipedia.org/wiki/Systemic\\_circulation](http://en.wikipedia.org/wiki/Systemic_circulation)**

**17. A**

**[www.prostate.org.au](http://www.prostate.org.au)**

**18. D**

**<http://www.gardasil.com/>**

**19. C**

**[http://www.nhmrc.gov.au/health\\_ethics/index.htm](http://www.nhmrc.gov.au/health_ethics/index.htm)**

**20. D**

**<http://www.beamedicalresearcher.org>**