

1. The number of bones in the human foot is:

- (a) 6;
- (b) 18;
- (c) 26;**
- (d) 38.

2. The number of cells in the human body is approximately:

- (a) 10-50 billion;
- (b) 100-500 billion;
- (c) 1-5 trillion;
- (d) 10-50 trillion.**

3. Growth hormone is produced in the:

- (a) liver;
- (b) pituitary gland;**
- (c) hypothalamus;
- (d) spleen.

4. Lack of growth hormone leads to:

- (a) gigantism;
- (b) dwarfism;**
- (c) obesity;
- (d) anorexia.

5. Across the world, one child dies from malaria every:

- (a) 30 seconds;**
- (b) 3 minutes;
- (c) 30 minutes;
- (d) 3 days.

6. The “common cold” is caused by:

- (a) influenza virus;
- (b) calcivirus;
- (c) rhinovirus;**
- (d) herpesvirus.

7. Australian of the Year, Dr Fiona Wood, is known for her role in the development of:

- (a) spray-on skin for the treatment of burns;**
- (b) antibiotics for the treatment of stomach ulcers;
- (c) growth-factors for the treatment of blood cell disorders;
- (d) coclear implants for the treatment of hearing disorders.

8. The Nobel Prize in Physiology or Medicine for 1996 was awarded to which Australian-born researcher?

- (a) Fiona Stanley;
- (b) Rolf M. Zinkernagel;
- (c) Howard Florey;
- (d) Peter Doherty.**

9. Collagen, a protein that forms the molecular cables that strengthen the tendons and vast and resilient sheets that support the skin and internal organs, contains the unusual modified amino acid:

- (a) **hydroxyproline;**
- (b) methylxanthine;
- (c) phosphatidylcholine;
- (d) cholesterol.

10. Synthesis of this modified amino acid requires which Vitamin?

- (a) A;
- (b) B12;
- (c) **C;**
- (d) K.

11. Vitamin D is important for the absorption of:

- (a) iron;
- (b) zinc;
- (c) selenium;
- (d) **calcium.**

12. A common disease caused by Vitamin D deficiency is:

- (a) **rickets;**
- (b) osteoarthritis;
- (c) anaemia;
- (d) skin cancer.

13. Mesothelioma is a normally rare cancer, whose incidence is significantly increased following exposure to:

- (a) ultraviolet light;
- (b) radiation;
- (c) **asbestos;**
- (d) viral infection.

14. The most frequently occurring cancer in Australia is:

- (a) bowel cancer;
- (b) breast cancer;
- (c) **lung cancer;**
- (d) skin cancer.

15. Germ cells are special in that:

- (a) they are the only cells that continue to divide in adults;
- (b) **they are the only cells that undergo meiosis;**
- (c) they are the only cells in the gonad;
- (d) they are the only diploid cells in most organisms.

16. Implantation of the mammalian embryo occurs:

- (a) before fertilization;
- (b) after fertilisation, but before development can begin;
- (c) **after development has begun, but before organ formation;**
- (d) after organ formation.

17. Homologous genes are:

- (a) varying forms of a gene found in diploid organisms;
- (b) genes in different species derived evolutionarily from a common ancestral gene;**
- (c) genes which cooperate to carry out a developmental process;
- (d) genes which code for proteins.

18. RNA polymerase and general transcription factors bind to what part of a gene?

- (a) the intron;
- (b) the promoter;**
- (c) the enhancer;
- (d) the polyadenylation site.

19. The mutation of genes in the production of "knock-out" mice is accomplished by:

- (a) chemical mutagenesis of adult mice;
- (b) radiation treatment of cultured mouse embryos;
- (c) homologous recombination in embryonic stem cells;**
- (d) breeding experiments between different mouse lines.

20. In humans, an individual with an XXY chromosomal complement will develop as:

- (a) a male;**
- (b) a female;
- (c) an hermaphrodite;
- (d) a super-female;
- (e) an individual with no secondary sexual characteristics.