

Multiple choice 80% (單選，每題 4 分)

1. ( ) Without blood typing before transfusion, severe hemolysis (destruction of red blood cells) will happen in which of the following situations?
  - a. Donor: type AB, recipient: type A
  - b. Donor: type O, recipient: type B
  - c. Donor: type B, recipient: type AB
  - d. Donor: type O, recipient: type AB
  - e. Donor: type AB, recipient: type AB
  
2. ( ) Which of the following conditions does not lead to edema ?
  - a. Malnutrition
  - b. Sodium retention
  - c. Heart failure
  - d. Local inflammation
  - e. All of the above lead to edema
  
3. ( ) Which of the following is not among the factors that promote the invasiveness of a tumor ?
  - a. Overexpression of growth factor receptors
  - b. Secretion of proteins that promote new vessel formation
  - c. Suppression of sensors that increase cell death (apoptosis) when cells are detached from their original site
  - d. Decrease in proteases that degrade extracellular matrix proteins
  - e. Decrease in the function of tumor suppressor genes
  
4. ( ) Which of the following cells are least potent in regeneration after trauma?
  - a. Hepatic cells
  - b. Bone marrow cells
  - c. Neurons
  - d. Fibroblasts
  - e. Epithelial cells
  
5. ( ) Which is not among the common clinical organs transplanted in human ?
  - a. Cornea
  - b. Testes
  - c. Heart
  - d. Lung
  - e. Kidney

6. ( ) Which kind of hypersensitivity is induced after receptors on mast cells are triggered by antigens?
- Type I
  - Type II
  - Type III
  - Type IV
  - None of the above
7. ( ) Which subpopulation of leukocytes will increase in number after parasite infection?
- NK cells
  - Basophils
  - Eosinophils
  - Monocytes
  - CD8+ T cells
8. ( ) Mary (blood type AB) and Sammy (blood type B) got married and had a son (blood type A). What is the chance that they will have a blood type B baby in their next delivery?
- 0
  - 10%
  - 25%
  - 50%
  - 100%
9. ( ) Abnormalities in which chromosome lead to Down syndrome?
- 11
  - 12
  - 21
  - 22
  - Sex chromosomes
10. ( ) Which of the following is caused by the same microorganism that causes chicken pox ?
- Herpetic keratoconjunctivitis
  - Herpes zoster
  - Gonorrhoea
  - Tinea pedis
  - Oral thrush

11. ( ) Which of the following is not among the risk factors for cervical cancer?
- Smoking
  - Low socio-economic status
  - Oral contraceptives
  - Late onset of sexual activity
  - Recurrent sex-transmitted diseases
12. ( ) Thalassemia is a disease caused by defects in which of the following genes?
- Immunoglobulin
  - $\beta 2$  microglobulin
  - G6PD
  - Hemoglobin
  - Thyroid stimulating hormone
13. ( ) The definition of glaucoma is...
- High intra-ocular pressure
  - Opacity in optic lens
  - Degeneration of retina
  - Ulceration on cornea
  - Paralysis of extra-ocular muscles
14. ( ) Which of the following is not among the symptoms of right heart failure?
- Lung edema
  - Ascites
  - Lower leg edema
  - Hepatosplenomegaly
  - All are symptoms of right heart failure
15. ( ) Low-dose aspirin is used to deter the development of chronic vascular diseases because it inhibits the function of...
- Neutrophils
  - B cells
  - Vascular endothelial cells
  - Mast cells
  - Platelets

16. ( ) Which of the following is not part of routine vaccination in our country ?
- Tetanus toxoid
  - BCG
  - Chicken pox
  - Poliomyelitis
  - Hepatitis B
17. ( ) Which of the following is incorrect regarding type I diabetes mellitus ?
- Low insulin production
  - Significant contribution of genetic factors
  - Onset usually in pediatric age
  - Association with obesity
  - High blood sugar
18. ( ) Deficiency of vitamin C (ascorbic acid) leads to... ?
- Night blindness
  - Pernicious anemia
  - Achondroplasia
  - Rickets
  - Scurvy
19. ( ) Which kind of inflammation characterizes the lesion of pulmonary TB ?
- Purulent inflammation
  - Necrotic inflammation
  - Granulomatous inflammation
  - Serous inflammation
  - Allergic inflammation
20. ( ) Albinism is usually inherited as a(n)...
- Autosomal dominant
  - Sex linked dominant
  - Autosomal recessive
  - Autosomal dominant
  - Multifactorial
- gene.

Essay Questions 20%: (問答，每題十分)

1. What are the potential complications of poor controlled diabetes mellitus?
2. What is stem cell technology? List 3 human diseases that can be better treated with this new technology and explain the advantages.