Human Biology Practice Test – Cells and Circulatory System

Name:
Date:

Circle the following multiple choice questions

1. What is systole?
   a) When the heart muscles relax
   b) The contraction of the atria causing the blood into the ventricles
   c) The pumping phase of the cycle, when the heart muscles contract
   d) Forces blood in the arteries

2. What is blood pressure?
   a) Is the pressure of blood on the walls of the arteries as the heart pumps it around the body.
   b) Systolic blood pressure is the number on top
   c) The pressure that causes the blood to flow
   d) The pressure determining how high or low the blood flow is

3. What causes blood to clot?
   a) Platelets
   b) Erythrocytes
   c) When there is a damaged vessels
   d) Coagulation

4. One function of a blood is:
   a) Transporting oxygen
   b) Clotting when vessels damaged
   c) Maintaining the pH of body fluid
   d) All above

5. What is the average life span of an erythrocyte?
   a) Few minutes
   b) For years when infection is not present
   c) One day
   d) Forever

6. What happens in diastole?
   a) Chamber contracts
   b) Pushes blood out of the chamber
   c) Chamber shrinks
   d) Chamber fills with blood

7. What are capillaries?
   a) Blood vessels
   b) Tiny blood vessels
   c) Carry blood back to the heart
   d) Carry blood away from heart
8. What is the function of the mitochondria?
   a) Provides surface on which chemical reactions can take place
   b) Releases energy for the cell through the process of respiration
   c) The powerhouse of cells
   d) That break down the material taken into the cell or breakdown worn out organelles.
   e) Make proteins such as amino acids

9. How is the structure of the endoplasmic reticulum?
   a) Spherical and usually ovoid
   b) Are small and spherical
   c) Pairs of parallel membranes
   d) Flattened, membranous bags
   e) Thick

10. What is vesicular transport
    a) Pinocytosis
    b) Phagocytosis
    c) Endocytosis
    d) The movement of substances across the cell membrane in the vesicles
    e) Is when the contents of a vesicle inside the cell are passed to the outside.

Write responses to the following short answers

11. What is active transport and give an example. (2 marks)

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12. Briefly explain what is facilitated diffusion? (2 marks)

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13. What is diffusion? Explain using the diffusion gradient. (2 marks)

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14. Explain how the structure of the cell membrane makes it permeable to some molecule but not to other? (3 marks)

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15. A red blood cell placed in distilled water swell up and bursts, but a red blood cell placed in sea water (about 3% salt) shrivels. Explain what happens. (3 marks)

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16. What is this process called? (Be specific) (1 mark)

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17. Write any two differences between veins and arteries. (2 marks)

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18. What is the function of the lymphatic system? (3 marks)

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19. Explain vasoconstriction and vasodilation? (2 marks)

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20. What are the functions of the atrioventricular valves? (2 marks)

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T. Ishra
21. Label the diagram and explain the circulation of the heart below (10 marks)

22. What happens when blood types are mixed? (3 marks)
23. Which blood groups can mix and which blood groups cannot. Explain? (3 marks)

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24. Explain the structure of the cell membrane. (2 marks)

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25. A medical scientist measured the pulse rate of a person while the subject was immersed in a bath of water. The temperature of the water was gradually changed as indicated in the table below. Study the data and answer the questions that follow.

<table>
<thead>
<tr>
<th>Water Temperature in Bath (°C)</th>
<th>Subject’s pulse rate (bpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>95</td>
</tr>
<tr>
<td>15</td>
<td>83</td>
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<tr>
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<tr>
<td>40</td>
<td>83</td>
</tr>
<tr>
<td>45</td>
<td>115</td>
</tr>
</tbody>
</table>

What hypothesis was the scientist testing? 1 mark
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Name the independent and dependent variables. 2 marks
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Draw the graph on the page below and answer the questions 4 marks

Give one conclusion that can be made from these results. 1 mark
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How could the experiment be improved so that the data becomes more reliable? (1 mark)
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What is a control in this experiment? (1 mark)

Graph Paper – draw the graph here

End of test

Marks: / 60

Comment: