

Example of a Sample Entrance Exam Paper. Biology

Question 001 Which science studies cell structure and cell activity?

- a. cytology
- b. ethology
- c. biometry
- d. histology

Question 002 The cell theory states

- a. cells form as organelles, and molecules become grouped together in an organised manner.
- b. the normal functioning of an organism does not depend on its individual cells.
- c. the cell is the basic unit of life for all living things.
- d. only animals are made of cells.

Question 003 The small size of cells is best correlated with

- a. the fact that they are self-reproducing.
- b. an adequate surface area for the exchange of materials.
- c. their vast versatility.
- d. All of these are correct.

Question 004 During ventricular diastole,

- a. blood flows into the aorta.
- b. the ventricles contract.
- c. the semilunar valves are closed.
- d. Both a and b are correct.

Question 005 When the atria contract, the blood flows

- a. into the attached blood vessels.
- b. into the ventricles.
- c. through the atrioventricular valves.
- d. to the lungs.
- e. Both b and c are correct.

Question 006 Heart valves located at the bases of the pulmonary trunk and aorta are called

- a. atrioventricular valves.
- b. semilunar valves.
- c. mitral valves.
- d. chordae tendineae.

Question 007 Which of these associations is incorrect?

- a. left ventricle—aorta
- b. right ventricle—pulmonary trunk

- c. right atrium—vena cava
- d. left atrium—pulmonary artery
- e. Both b and c are incorrectly matched.

Question 008 Which statement is not correct concerning the heartbeat?

- a. The atria contract at the same time.
- b. The ventricles relax at the same time.
- c. The AV valves open at the same time.
- d. The semilunar valves open at the same time.
- e. First the right side contracts; then the left side contracts.

Question 009 If a person's blood pressure is 115 mm Hg over 75 mm Hg, the 75 represents

- a. systolic pressure.
- b. diastolic pressure.
- c. pressure during ventricular relaxation.
- d. Both b and c are correct.

Question 010 Accumulation of plaque in an artery wall is

- a. an aneurysm.
- b. angina pectoris.
- c. atherosclerosis.
- d. hypertension.
- e. a thromboembolism.

Question 011 Which of the following is not a formed element of blood?

- a. leukocyte
- b. eosinophil
- c. fibrinogen
- d. platelet

Question 012 Which of the following substances would not normally be filtered from the blood at the glomerulus?

- a. water
- b. urea
- c. protein
- d. glucose
- e. sodium ions

Question 013 An oocyte is fertilized in the

- a. vagina
- b. uterus
- c. oviduct
- d. ovary

Question 014 If a parent cell has 18 chromosomes before mitosis, how many chromosomes will the daughter cells have?

- a. 18
- b. 36
- c. 9
- d. 27

Question 015 In humans, mitosis is necessary to

- a. grow and repair damaged tissue.
- b. form the gametes.
- c. maintain the same number of chromosomes in body cells.
- d. Both a and c are correct.

Question 016 If a parent cell has 18 chromosomes, how are they arranged at the equator during metaphase of mitosis?

- a. a single row of 18 replicated chromosomes in random order
- b. a double row of 9 replicated chromosomes in random order
- c. a single row of 18 replicated chromosomes numbered 1 to 18
- d. a double row of 9 replicated chromosomes, with 1–9 from the mother on one side and 1–9 from the father on the other side

Question 017 Crossing-over occurs between

- a. sister chromatids of the same chromosome.
- b. chromatids of non-homologous chromosomes.
- c. non-sister chromatids of a homologous pair.
- d. Both b and c are correct.

Question 018 At the equator in metaphase of meiosis I, there are

- a. single chromosomes in random order.
- b. unpaired duplicated chromosomes in random order.
- c. homologous pairs in random order.
- d. homologous pairs with those from the mother on one side and from the father on the other side.

Question 019 The products of are cells.

- a. mitosis, diploid
- b. meiosis, haploid
- c. meiosis, diploid
- d. Both a and b are correct.

Question 020 If a parent cell has 22 chromosomes, the daughter cells following meiosis II will have

- a. 22 chromosomes.
- b. 44 chromosomes.
- c. 11 chromosomes.

d. Any of these could be correct

Question 021 Which of these helps to ensure that genetic diversity will be maintained?

- a. independent alignment during metaphase I
- b. crossing-over during prophase I
- c. fusion of sperm and egg nuclei during fertilisation
- d. All of these are correct.