

A

1 Which organ in the digestive system can be transplanted to help certain diabetic patients?

- A) gallbladder
- B) liver
- C) stomach
- D) spleen
- E) pancreas

2 An experiment is called double-blind when

- A) the results of the experiment are not statistically significant.
- B) neither the subjects nor the technicians know who is in the experimental and the control groups.
- C) there is no control group.
- D) the hypothesis being tested is not based on previous observations.
- E) Both (neither the subjects nor the technicians know who is in the experimental and the control groups) and (the hypothesis being tested is not based on previous observations.)

3 Proteins are polymers of

- A) fatty acids.
- B) amino acids.
- C) sugars.
- D) nucleotides.
- E) proteins are not polymers.

A

4 Cessation of the monthly ovarian cycle is known by which of the following terms?

- A) Menstruation
- B) Menses
- C) Metriosis
- D) Middleschmerz
- E) Menopause

5 A normal human cell containing 44 autosomes and two X chromosomes is

- A) a somatic cell of a male.
- B) an egg cell.
- C) a somatic cell of a female.
- D) a sperm cell.
- E) Both an egg cell and a sperm cell are possible.

6 What type of chemical bond connects the complementary strands of a DNA molecule to each other?

- A) polar covalent bonds
- B) nonpolar covalent bonds
- C) hydrogen bonds
- D) ionic bonds
- E) Both ionic bonds and hydrogen bonds

A

7 What flower part is often colorful and attractive to insects?

- A) Ovary
- B) Stamen
- C) Petal
- D) Stigma
- E) Anther

8 Which organelle contains digestive enzymes that degrade a variety of macromolecules?

- A) endoplasmic reticulum
- B) lysosome
- C) nucleus
- D) mitochondrion
- E) chloroplast

9 Abscission of leaves and fruits is promoted by the hormone

- A) cytokinin.
- B) ethylene.
- C) phytochrome.
- D) gibberellin.
- E) auxin.

A

10 Type AB blood is a result of

- A) codominance.
- B) polygenic inheritance.
- C) simple dominance.
- D) environmental effect only.
- E) sex-linked recessive inheritance.

11 Which of the following is a scientific hypothesis?

- A) Bad people catch more colds than good people.
- B) People catch colds because of exposure to cold temperature.
- C) Cold viruses should be allowed to reproduce just like anything else.
- D) It is unethical to go to school when you have a cold.
- E) All of the above.

12 Vitamins in the human body

- A) help enzymes function properly.
- B) are sources of stored energy.
- C) are the basis of the plasma membrane.
- D) act as hormones that trigger cells to take up glucose.
- E) All of the above.

A

13 The greenhouse effect is most similar to

- A) heating up the air inside a car by parking it in the sun.
- B) warming the air for a hot-air balloon with a propane burner.
- C) cooking food with a charcoal grill.
- D) growing plants in your office to reduce indoor air pollution.
- E) burning kerosene in a heater to warm up the air inside a cold house.

14 Consider an experiment in which subjects are given a pill to test its effectiveness on reducing the duration of a cold. Which of the following is the best way to treat the control group?

- A) Do nothing with the control group.
- B) Let the control group choose whether or not to take any pills.
- C) Give the control group a pill that does not affect colds.
- D) Give the control group two pills instead of one.
- E) All of the above.

A

15 Which of the following is an example of biological evolution?

- A) You are vaccinated against polio and are protected against the disease.
- B) A species of caterpillars is the same shade of green as the leaves on which it feeds.
- C) A tree branch is broken off and another grows in its place.
- D) A baby bird that has lost its parents treats the human who raises it like its own parent.
- E) The average woman's dress size has increased over the last 50 years.

16 A decrease in the body's normal water level can cause all of the following problems EXCEPT

- A) dizziness.
- B) increased sweating.
- C) increased heart rate.
- D) confusion.
- E) muscle cramps.

17 Plants that grow from a seed and produce new seeds within the course of one year are classified as

- A) dicots.
- B) annuals.
- C) gymnosperms.
- D) angiosperms.
- E) perennials.

A

18 A city was intensively sprayed with DDT to control houseflies. The number of houseflies was immediately greatly reduced. Each year thereafter the city was sprayed again, but the flies gradually increased in numbers until ten years later they were almost as abundant as they were when the control program began. Which of the following most likely explains this?

- A) Flies from other areas moved in and replaced the ones killed by DDT.
- B) The DDT caused new mutations to occur in the surviving flies resulting in resistance to DDT.
- C) The DDT killed most flies. The few that were already naturally resistant survived and passed this resistance on to their offspring.
- D) DDT is only effective in dry years. Eventually another very dry year will occur and DDT will again wipe out the flies in the city.
- E) The few flies that were affected by DDT but survived developed antibodies to DDT, which they passed on to their descendants.

19 In a certain species of animal, 33% of the bases in its DNA are A. What percent of the bases are C?

- A) 17%
- B) 67%
- C) 34%
- D) 33%
- E) 8.5%

A

20 Y-linked genes include a gene that produces hairy ears. A male with hairy ears should pass this trait

- A) to all his children if the mother is a carrier.
- B) only to his sons.
- C) only to his daughters.
- D) only to his grandsons.
- E) usually to his sons, but rarely also to a daughter.

21 After a large meal is digested, the liver reduces blood glucose levels by

- A) stimulating the pancreas to store excess glucose.
- B) converting glucose to glycogen.
- C) eliminating glucose in the urine.
- D) breaking down glucose into waste products.
- E) releasing hormones that inhibit the pancreas.

22 Place these categories in the correct order, from most inclusive to least inclusive.

- A) kingdom, species, phylum, domain
- B) phylum, kingdom, domain, species
- C) domain, kingdom, phylum, species
- D) family, kingdom, species, domain
- E) species, phylum, domain, kingdom

A

23 Which of the following situations has the greatest potential for observer bias in an experimental process?

- A) Dr. Jones is evaluating cancer patients for their responses to a new therapeutic drug. She knows which patients are receiving the placebo and which are receiving the drug.
- B) Mr. Bromley is conducting a survey of weight loss for his professor. He asks each student in the study the same questions.
- C) Dr. Postgate is analyzing biopsy samples from rats that have been given either a placebo or an experimental drug believed to reduce inflammation. Each sample is identified by a code number such that Dr. Postgate cannot tell which treatment the rats received.
- D) Ms. Bradley is an outside consultant who is conducting a health and wellness survey for a pharmaceutical company. She does not know the name of the company, nor does she know the name of the drug being tested during the survey.
- E) Mrs. Wilmert is a research technician who surveys a study group on their response to a new cold remedy. She knows only the e-mail address of each subject and asks them identical questions by computer.

A

24 In land mammals the pelvic girdle is the point where the leg bones attach to the rest of the skeleton. Whales also have a small pelvic girdle. This would be an example of what type of evidence for common descent?

- A) fossil evidence
- B) a homologous gene
- C) a homologous structure
- D) homologous biochemistry
- E) a vestigial structure

25 Why don't water molecules located within a column of xylem sap move apart?

- A) Cohesion holds the water molecules to the cellulose making up plant cell walls.
- B) Adhesion holds the water molecules to the cellulose making up plant cell walls.
- C) Adhesion holds the water molecules to each other.
- D) Cohesion holds the water molecules to each other.
- E) Cohesion and adhesion bind water molecules to each other and to plant cell walls, respectively.

26 Which structure in the umbilical cord carries carbondioxide and other wastes away from the fetus?

- A) placenta
- B) vein
- C) gland
- D) villi
- E) artery

A

27 Which one does not conduct electricity?

- A) NaOH (aq)
- B) NaCl (s)
- C) KCl (l)
- D) HCl (aq)
- E) HNO₃ (aq)

28 At which stage of mitosis chromosomes line up in the middle of the spindle?

- A) prophase
- B) interphase
- C) metaphase
- D) anaphase
- E) telophase

29

Substance	M.P (°C)	B.P (°C)
A	20	80
B	-10	70
C	25	105

Which substance is liquid at 0°C ?

- A) A and C
- B) Only C
- C) Only B
- D) Only A
- E) B and C

A

30 Which element is found as a diatomic gas in nature?

- A) Neon
- B) Oxygen
- C) Helium
- D) Argon
- E) Iron

31 760 cmHg is equal to

- A) 100 bar
- B) 10 atm
- C) 76 mmHg
- D) 1 atm
- E) 100 Pa

32 Which structures are strong tissues that hold bones together at joints?

- A) villi
- B) bone marrow
- C) ligaments
- D) cartilage
- E) fatty tissue

33 Which one is related with red blood cells?

- A) carry oxygen to the tissues
- B) destroy disease causing organisms
- C) can move like amoebas
- D) liquid part of the blood
- E) help to clot blood

A

34 Where is ball and socket joint found?

- A) fingers
- B) shoulders
- C) skull
- D) knees
- E) elbows

35 What is the solubility of a solute in water at 60°C if 12 g of solute can be dissolved in 48 g of water at the same temperature?

- A) 12g / 100g water
- B) 25g / 100g water
- C) 200g / 100g water
- D) 400g / 100g water
- E) 48g / 100g water

36 A water pump uses 0.5 kw of power to raise 100kg of water by 10m. How long does it take to pump water?

- A) 500 000 s
- B) 20 s
- C) 2 s
- D) 5 000 000 s
- E) 50 s

A

37 A denine nucleotide always binds with

- A) guanine nucleotide
- B) ribose sugar
- C) cytosine nucleotide
- D) thymine nucleotide
- E) phosphate group

38 If $2n = 8$ in an organism and it undergoes 3 mitotic and then a meiotic cell divisions, what is the chromosome number at the end of the divisions?

- A) 2
- B) 4
- C) 8
- D) 16
- E) 32

39 In garden peas, yellow seed colour is dominant and green seed colour is recessive. Suppose purebred green-seeded pea plants are crossed with hybrid yellow-seeded pea plants. What is the phenotype of the F_1 generation?

- A) 50 % yellow-seeded , 50 % green-seeded
- B) 75 % yellow-seeded , 25 % green-seeded
- C) 100 % yellow-seeded
- D) 25 % yellow-seeded , 75 % green-seeded
- E) 100 % green-seeded

A

- 40 Which of the organelles below are found both in plant and animal cells?**
- A) mitochondria and chloroplasts
B) golgi body and endoplasmic reticulum
C) cell membrane and cell wall
D) centrioles and vacuoles
E) cell wall and ribosomes
- 41 If a car travels 100 km with a constant speed of 20 m/s, how long does the journey take?**
- A) 5000 s
B) 120 s
C) 0.2 s
D) 5 s
E) 20000 s
- 42 A certain flowering plant has flowers in three colours; red, white and pink. A farmer wants to produce only red and pink flowers. What must he do?**
- A) He should cross white flowers with red flowers
B) He should cross red flowers with red flowers
C) He should cross pink flowers with red flowers
D) He should cross white flowers with white flowers
E) He should cross pink flowers with pink flowers

A

- 43 Solubility of NaCl at 80°C is 32g / 100ml water. Which one is the unsaturated solution of NaCl at 80°C?**
- A) 16 g NaCl in 50 ml water
B) 108 g NaCl in 400 ml water
C) 40 g NaCl in 100 ml water
D) 64 g NaCl in 200 ml water
E) 90 g NaCl in 300 ml water
- 44 Which one is true for gravitatal force?**
- A) It is a scalar quantity
B) It is different in different places
C) It is directly proportional to the distance between bodies
D) It is inversely proportional to the mass of the bodies
E) It can be measured by using a barometer
- 45 Which is incorrect for identical twins?**
- A) They are always same sex
B) They are develeoped from two eggs and two sperms
C) They are formed from one zygote
D) They look exactly alike
E) None of them

A

46 The initial velocity of a train is 5 m/s and it reaches a velocity of 45 m/s in 20 seconds. The acceleration of the train is

- A) -2 m/s^2
- B) 2 m/s^2
- C) 3 m/s^2
- D) 2.5 m/s^2
- E) -2.5 m/s^2

47 Which one is not correct for chromosomes?

- A) Each chromosome has one pair of genes on it
- B) They have different shapes and lengths
- C) They are found in pairs in the nucleus
- D) They consist of proteins and DNA molecules
- E) They are found in the nucleus

48 I. Liquid in the cochlea vibrates

II. Brain interprets nerve impulses

III. Three tiny bones vibrate

IV. Pinna collects sound waves

V. Ear drum vibrates

Which is the appropriate order for hearing?

- A) V, III, IV, II, I
- B) IV, V, II, III, I
- C) IV, V, III, I, II
- D) II, IV, V, III, I
- E) III, II, V, I, IV

A

49 Which one is not correct for Noble gases?

- A) They have full outer shells
- B) They do not undergo chemical reactions
- C) They are diatomic gases
- D) They are used in lighting
- E) They never form compounds

50 Which one is not true for compounds?

- A) They are composed of elements only
- B) Each substance which forms it keeps its own properties
- C) They are always homogenous
- D) They can only be separated by chemical methods
- E) None of them

TEST BİTTİ
CEVAPLARINIZI KONTROL EDİNİZ