

私立臺北醫學院 90 學年度第 1 學期期末考試命(試)題紙

系級	科目	授課教師	考試日期	學號	姓名
公衛一	普通生物學	鄭可大老師	91年1月17日第二節		

↑ 請注意本試題共 1 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。

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- Match the terms with their most suitable descriptions.
 

_____ Auxins	a. maintain dormancy
_____ Cytokinins	b. promote fruit ripening
_____ Gibberellins	c. apical dorminance
_____ Abscisic acid	d. promote seed germination
_____ Ethylene	e. delay aging
- Match the terms with their most suitable descriptions. (10%)
 

_____ mutation	a. is the gain or loss of alleles from a population by the movement of individuals or gametes.
_____ genetic drift	b. differential success in reproduction by different phenotypes resulting from interactions with the environment.
_____ nonrandom mating	c. is the selection of mates other than by chance.
_____ gene flow	d. is a change in the gene pool of a small population due to chance.
_____ natural selection	e. is a change in an organism's DNA that creates a new allele.
- Water evaporation from plant parts is called
 

a. translocation   b. expiration   c. tension   d. transpiration.
- Polyploidy is, a change in the chromosome number, always occurs in flowering plant, belongs to \_\_\_\_\_speciation route.
 

a. allopatric   b. sympatric   c. parapatric   d. all of the above.
- The \_\_\_\_\_ are swellings consisting of plant cells that contain nitrogen-fixing bacteria.
 

a. root nodule   b. mycorrhiza   c. root hair   d. root hypha.

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- Structure in the living world is organized at hierarchical levels. Which of the following choices lists several of these, from least inclusive to most inclusive?
  - molecule, cell, organ, organ system, tissue, organism
  - cell, molecule, tissue, organ, organ system, organism
  - molecule, cell, tissue, organ system, organ, organism
  - molecule, cell, tissue, organ, organ system, organism
  - cell, molecule, organ, organ system, tissue, organism
- Stratified squamous epithelium is well suited for
  - lining our lungs.
  - exchanging materials by active transport.
  - exchanging materials by diffusion.
  - secreting mucus.
  - lining surfaces subject to abrasion.
- Connective tissue is different from the other major tissue types in that
  - the cells are sparsely scattered through a nonliving matrix.
  - it is not made up of cells.
  - it is found only in humans.
  - it has no essential function in an animal's body.
  - it is made up of cells.
- What is the main digestive function of the pancreas?
  - It produces digestive enzymes and bile salts.
  - It produces bile.
  - It produces digestive enzymes and a solution rich in bicarbonate.
  - It aids in the control of cholesterol.
  - It produces bicarbonate-containing mucus.
- The esophagus and trachea both open into the
  - posterior oral cavity.
  - epiglottis.
  - pharynx.
  - posterior nasal cavity.
  - larynx.
- Which of the following is not a function of hemoglobin?
  - binding to carbonic acid
  - binding to carbon dioxide
  - binding to oxygen in the lungs
  - unloading oxygen in active tissues
  - binding to hydrogen ions
- At any given time, what percentage of the body's capillaries have blood flowing through them?
 

A) 85 to 90%    B) 40 to 50%    C) 5 to 10%    D) 20 to 25%    E) 60 to 70%

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8. In an open circulatory system,
- blood flows out of the body.
  - there is no blood.
  - there are no blood vessels.
  - there is no heart.
  - blood flows between cells.
9. During ventricular systole, the \_\_\_\_\_ valves \_\_\_\_\_.
- AV and semilunar close
  - semilunar close
  - semilunar open
  - AV close
  - AV open
10. Complement proteins assist the immune response by
- enhancing the effects of antibiotics.
  - coating the surface of microbes, thus making it easier for macrophages to phagocytize them.
  - enhancing inflammation.
  - all of the above.
  - only B and C.
11. Which of the following mobilizes our nonspecific defense system?
- active immunity
  - passive immunity
  - mobilization of erythrocytes to the affected site
  - inflammation
  - cell-mediated immunity
12. When in its life cycle does a B cell first exhibit its particular surface antibody?
- before it ever encounters an antigen
  - before the stem cell giving rise to it divides
  - after the memory cell giving rise to it divides
  - after it encounters several antigens
  - after it encounters a single antigen
13. Which of the following cell types initiates a secondary immune response?
- immature leukocytes
  - natural killer cells
  - memory cells
  - plasma cells
  - effector cells
14. What is the function of the urea reabsorption that takes place in the renal collecting ducts?
- It restores the correct concentration of blood urea.
  - The urea enters the ascending limb of the loop of Henle and from there is excreted in the urine.
  - It reduces the salinity of the renal medulla and thus helps regulate how much water is reabsorbed from the urine.
  - It increases the osmotic concentration of the interstitial fluid in the renal medulla so that more water can be extracted from the urine.
  - It induces NaCl to move into the capillaries and thus helps maintain blood salinity.

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15. What is the hepatic portal vessel?
- a large lymphatic vessel that transports substances to the kidneys for secretion into the distal tubule
  - the largest lymphatic vessel in the body, taking wastes to the kidneys
  - a large blood vessel that transports blood to the kidneys from the heart
  - a large blood vessel that connects the two kidneys
  - a large blood vessel that carries blood from the intestines to the liver
16. Does most of the water that is filtered into Bowman's capsule appear in the urine? From which part(s) of the nephric apparatus can water reabsorption not take place?
- no; descending limb of the loop of Henle
  - no; ascending limb of the loop of Henle
  - no; collecting ducts
  - yes; collecting ducts
  - yes; descending limb of the loop of Henle
17. Which of the following hormones can make a person susceptible to infection when administered for too long as a drug?
- mineralocorticoids
  - glucocorticoids
  - antidiuretic hormone
  - androgens
  - glucagon
18. A cell that is affected by a particular steroid hormone would be expected to have
- enzymes that are activated or inactivated by the intracellular hormone-receptor complex.
  - DNA sites that interact with the hormone.
  - a cell-surface receptor protein that binds the hormone.
  - an intracellular receptor protein that binds the hormone.
  - enzymes that are activated or inactivated by the hormone's second messenger.
19. Which gland begins to shrink at puberty in humans?
- adrenal cortex
  - pineal
  - parathyroid
  - pituitary
  - thymus
20. Menstruation
- coincides with the postovulatory phase of the ovarian cycle.
  - involves shedding of the endometrium.
  - is triggered by an LH surge.
  - is stimulated by HCG.
  - is triggered by an increase in the levels of estrogen and progesterone.

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21. In human females, the ovarian cycle begins when
- the hypothalamus stimulates the pituitary to increase its output of FSH and LH
  - the levels of progesterone drop precipitously.
  - the hypothalamus increases its release of FSH and LH.
  - the levels of estrogen reach their maximum.
  - the levels of FSH and LH drop precipitously.
22. What part of the brain sorts incoming information into categories (such as touch signals from a hand) before relaying it to the cerebral cortex?
- corpus callosum
  - pons
  - hypothalamus
  - thalamus
  - hippocampus
23. Which, if any, of the following types of personal characteristics is not based in the cerebral cortex?
- mathematical abilities
  - personality traits
  - reasoning abilities
  - artistic talents
  - All of the above are based in the cerebral cortex.
24. \_\_\_\_\_ is/are responsible for increased speed of impulse conduction along an axon.
- IPSPs
  - Neurotransmitters
  - EPSPs
  - A graded potential
  - The myelin sheath
25. Which of the following choices lists in correct order structures through which light must pass on its way to the retina of the human eye?
- cornea, aqueous humor, pupil, lens
  - pupil, cornea, aqueous humor, lens
  - lens, aqueous humor, pupil, cornea
  - pupil, cornea, lens, aqueous humor
  - cornea, pupil, aqueous humor, lens
26. A person whose eyeball is shorter than normal suffers from
- myopia.
  - hyperopia.
  - presbyopia.
  - astigmatism.
  - visual acuity.

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27. Which of the following statements is not true of the cochlea?

- A) It is involved in both hearing and balance.
- B) It is a coiled structure found in the inner ear.
- C) It contains three fluid-filled canals.
- D) It contains the organ of Corti.
- E) Vibrations enter it through the oval window.

28. The most basic reason why animals need a continuous supply of oxygen is that

- A) without it, animals cannot dispose of carbon dioxide.
- B) it is needed to make carbon dioxide.
- C) without it, animals cannot obtain enough energy from their food.
- D) without it, animals cannot synthesize protein.
- E) it is needed to carry out glycolysis.

29. If you were to move from sea level to high altitude, your body would respond with all of the following adaptations except a(n)

- A) increase in the rate and depth of breathing.
- B) increase in the number of red blood cells.
- C) faster heart rate.
- D) increase in the affinity of hemoglobin for oxygen.
- E) increase in the diameter and number of capillaries.

30. The two major divisions of the nervous system are the

- A) ANS and SNS.
- B) voluntary and involuntary.
- C) sympathetic and parasympathetic.
- D) sensory and motor.
- E) CNS and PNS.

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解釋名詞

1. Biosphere
2. Habitat
3. Density-independent Factor
4. Age-structure Diagram
5. Gause's Competitive Exclusion Principle
6. Camouflage
7. Mutualism
8. Associative Learning
9. Dominance Hierarchy
10. Courtship Rituals

請作答

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解釋名詞，請作答(若紙不夠，可寫反面，但題號需標示清楚)