

系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
藥一A	普生	梁文保	93年1月15日第1節		
※①請注意本試題共 7 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。 ②每張試題卷務必填寫(學號)、(姓名)。					

藥一生物學考題

選擇題(每題1%，共24分)，請將答案寫在答案欄內。

- 古生代末期(約2.8億年前)地球上的植物霸主為①藍綠藻②苔蘚類③蕨類④裸子類植物
- 下列質體中具有合成澱粉及蛋白質作用功能的為①葉綠體(chloroplast)②有色體(chromoplast)③白色體(leucoplast)④皆不具此能力
- 植物細胞內的晶體成分主要為①Ca②Na③K④Mg的鹽類成分
- 細胞分裂期中，合成紡錘體等結構成分的時期為①G1②S③G2④M
- 下列組織細胞中具物質傳遞或儲存功用的是①皮層細胞②石細胞③木栓細胞④厚角細胞
- 現在盛產的橘子表皮上的油室屬於①儲藏組織②輸導組織③保護組織④分泌組織
- 下列成分何者必參予葉綠素構成成分？①Ca②Fe③Zn④Mo
- 藻類植物外表具有黏滑性乃因其細胞壁含有①木質素②果膠質③黏肽糖④纖維素
- 具組織分化的藻類為①藍藻②綠藻③紅藻④褐藻
- 黏菌細胞在何時期會固著生活？①生長期②營養期③繁殖期④皆為固著生活
- 真菌植物中不具有菌絲結構的為①青黴菌②酵母菌③蘑菇④香菇
- 繁殖時開始有精子及卵分化的為①褐藻②草類③苔蘚類④蕨類
- 有關世代交替的敘述何者有誤？①細菌不具世代交替②藻類的世代交替以孢子世代為優勢③苔蘚類以配子世代為優勢④蕨類以孢子世代為優勢
- 有關蕨類植物何者敘述為正？①具有根莖葉的分化②葉形屬於羽狀複葉③具有精子及卵子之分化④繁殖以孢子形式進行
- 種子植物之敘述何者為誤？①為地球上最優勢的植物群②有繁殖器官及營養器官之分③葉具有光合作用為重要的營養器官④花可吸引動物協助進行傳粉為重要的繁殖器官
- 下列校園植物中葉片屬於對生的植物為①榕②山茶花③楓④槭
- 校園植物中內具有複葉的植物為①鵝掌藤②雀榕③杜鵑④櫻
- 具有平行脈的校園植物為①白千層②榕樹③樟樹④杜鵑
- 為防止大氣產生污染時可以何種水果進行監測？①蕃茄②柳丁③草莓④香蕉
- 下列植物變化屬於躲避不良環境的例子為①葉片上的角質化②植物體內含精油③形成針狀葉④縮短生活週期
- 植物對環境污染的抗性研究中何者屬於躲避形式？①關閉氣孔②利用細胞內成分結合污染物③對污染物進行水解作用④改變基因
- 長日植物一般在何時開花？①春②夏③秋④冬
- 春化作用主要採用何種效應進行？①日照②溼度③溫度④荷爾蒙
- 下列何種因素會影響種子透氣性？①環境溼度②子葉中含有機酸③胚未成熟④種皮厚度

答案欄：(每題1%)

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.

系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
醫-X	普生	陳淑慧	93年1月15日第1節		

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. Two points for each question

Please write down your answers in the following table.

1.	2.	3.	4.	5.	6.	7.	8.
9.	10.	11.	12.	13.	14.	15.	16.
17.	18.	19.	20.	21.	22.	23.	24.
25.	26.						

- Which of the following characteristics of blood best explains its classification as connective tissue?
 - It contains more than one type of cell.
 - It is contained in vessels that "connect" different parts of an organism's body.
 - Its cells can move from place to place.
 - It is found within all the organs of the body.
 - Its cells are widely dispersed and surrounded by a fluid.
- Which example best describes a homeostatic control system?
 - The kidneys excrete salt into the urine when dietary salt levels rise.
 - A blood cell shrinks when placed in a solution of salt and water.
 - The blood pressure increases in response to an increase in blood volume.
 - Motility in the digestive tract increases following a meal.
 - The core body temperature of a runner is allowed to gradually rise from 37°C to 45°C.
- Which of the following tissues lines the kidney ducts?
 - epithelial
 - connective
 - adipose
 - smooth muscle
 - nervous
- Which of the following fibers is responsible for the resistant property of tendons?
 - collagenous fibers
 - elastin fibers
 - spindle fibers
 - fibrin fibers
 - reticular fibers

臺北醫學大學 92 學年度第 一 學期 期中 考試 (試) 題紙

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葯-X	普 生	陳建志	93年1月15日第1節		
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- 5) Cows are able to survive on a diet consisting almost entirely of cellulose because
 - A) the cow's saliva has enzymes capable of digesting cellulose.
 - B) cows are autotrophic.
 - C) cows have cellulose-digesting, symbiotic microorganisms in their rumens.
 - D) the cow, like the rabbit, reingests its feces.
 - E) cows can manufacture all 15 amino acids out of sugars in the liver.
- 6) Hormones that affect the pancreas include
 - A) enterogastrone.
 - B) gastrin.
 - C) CCK.
 - D) secretin.
 - E) both C and D.
- 7) Which of the following glandular secretions involved in digestion would be most likely to be released initially as inactive precursors?
 - A) protein-digesting enzymes
 - B) carbohydrate-digesting enzymes
 - C) fat-solubilizing bile salts
 - D) acid-neutralizing bicarbonate
 - E) hormones such as gastrin
- 8) How does the digestion and absorption of fat differ from that of carbohydrates?
 - A) Fat absorption occurs in the stomach, whereas carbohydrates are absorbed from the small intestine.
 - B) Processing of fat does not require any digestive enzymes, whereas the processing of carbohydrates does.
 - C) Carbohydrates need to be emulsified before they can be digested, whereas fats do not.
 - D) Most absorbed fat first enters the lymphatic system, whereas carbohydrates directly enter the blood.
 - E) Fat must be worked on by bacteria in the large intestine before it can be absorbed, which is not the case for carbohydrates.
- 9) Most of the carbon dioxide carried by the blood in humans is carried as
 - A) carbonic acid in the erythrocytes.
 - B) bicarbonate attached to hemoglobin.
 - C) CO₂ attached to hemoglobin.
 - D) CO₂ dissolved in the plasma.
 - E) bicarbonate ions in the plasma.
- 10) Tidal volume in respiration is analogous to what measurement in cardiac physiology?
 - A) heart rate
 - B) cardiac output
 - C) stroke volume

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葯-X	普生	陳淑慧	93 年 1 月 15 日 第 1 節		
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- D) systolic pressure
E) diastolic pressure
- 11) What is the primary effect that an oil spill would probably have on frogs?
- They will die because the toxins will build up in their blood.
 - They will survive by remaining hidden beneath the water.
 - They will die because they will not be able to respire across their skin.
 - Survival or death will be dependent upon the genetic makeup of each individual frog.
 - They will survive because they have a natural secretion that will repel the oil.
- 12) Which of the following is an example of countercurrent flow?
- the flow of air within the primary bronchi of a human and the flow of blood within the pulmonary veins
 - the flow of water across the skin of a frog and the flow of blood within the ventricle of its heart
 - the flow of fluid out of the arterial end of a capillary and the flow of fluid back into the venous end of that same capillary
 - the flow of water across the gills of a fish and the flow of blood within those gills
 - the flow of blood in the dorsal vessel of an insect and the flow of air within its tracheae
- 13) If a molecule of CO₂ released into the blood in your left toe travels out of your nose, it must pass through all of the following structures except for *except*
- right ventricle.
 - right atrium.
 - alveolus.
 - trachea.
 - pulmonary vein.
- 14) A red blood cell is in an artery in the left arm of a human. How many capillary beds must this cell pass through before it is returned to the left ventricle of the heart?
- A) one B) two C) three D) four E) five
- 15) What is the reason that fluid is forced out of systemic capillaries at the arteriolar end?
- The osmotic pressure of the interstitial fluid is greater than that of the blood.
 - The hydrostatic pressure of the blood is less than that of the interstitial fluid.
 - The hydrostatic pressure of the blood is greater than the osmotic pressure of the interstitial fluid.
 - The osmotic pressure of the blood is greater than the hydrostatic pressure of the interstitial fluid.
 - The osmotic pressure of the interstitial fluid is greater than the hydrostatic pressure of the blood.

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- 16) If a person were suffering from edema, which of the following conditions would reduce it?
- A) lower blood pressure
 - B) a prolonged starvation diet
 - C) decreased plasma protein production by the liver
 - D) an obstruction in the lymphatic system
 - E) enlarged clefts between capillary endothelial cells due to damage or inflammation
- 17) Human plasma proteins include which of the following?
- I. fibrinogen
 - II. hemoglobin
 - III. immunoglobulin
- A) I only
 - B) II only
 - C) I and III only
 - D) II and III only
 - E) I, II, and III
- 18) All of the following statements about antibodies are true *except*:
- A) Plasma B cells are responsible for the production of antibodies.
 - B) Antibodies bind with foreign cells and destroy them.
 - C) Antibodies are immunoglobulin proteins.
 - D) Antibodies act as signals to blood complement proteins or phagocytes.
 - E) The structure of antibodies includes both a constant and a variable region.
- 19) Which of the following are necessary to produce monoclonal antibodies?
- A) fibroblasts
 - B) plasma cells
 - C) myeloma cells
 - D) macrophages
 - E) Both B and C are necessary.
- 20) Which of the following is an example of positive feedback in the immune system?
- A) Cells release a cytokine that stimulates these cells to divide and release more of the cytokine.
 - B) Memory cells proliferate and produce antibodies.
 - C) Large antigens with many repeating antigenic determinant sites can stimulate B cells without the aid of T cells.
 - D) Cytotoxic cells release substances that attract macrophages.
 - E) Both A and B are examples of positive feedback in the immune system.
- 21) Which of the following statements about humoral immunity is *correct*?
- A) It primarily defends against fungi and protozoa.
 - B) It primarily defends against bacteria and viruses that have already infected cells.
 - C) It protects the body against cells that become cancerous.
 - D) It is mounted by lymphocytes that have matured in the bone marrow.

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- E) It is responsible for transplant tissue rejection.
- 22) Jenner successfully used cowpox virus as a vaccine against a different virus that causes smallpox. Why was he successful even though he used viruses of different kinds?
- Cowpox and smallpox are antibodies with similar immunizing properties.
 - The immune system responds nonspecifically to antigens.
 - All of the below are true.
 - There are some antigenic determinants common to both pox viruses.
 - The cowpox virus made antibodies in response to the presence of smallpox.
- 23) Each indication below is a clinical characteristic of inflammation *except*
- redness.
 - pain.
 - edema.
 - increased blood flow.
 - decreased temperature.
- 24) Hormones involved in the production of urine include all of the following *except*
- atrial natriuretic factor.
 - aldosterone.
 - ADH.
 - secretin.
 - angiotensin.
- 25) All of the following are functions of the mammalian kidney *except*
- production of urea as a waste product of protein catabolism.
 - water reabsorption.
 - filtration of blood.
 - regulation of salt balance in the blood.
 - excretion of nitrogenous waste.

Refer to Figure 44.2, a diagram of a renal tubule, to answer the following questions.

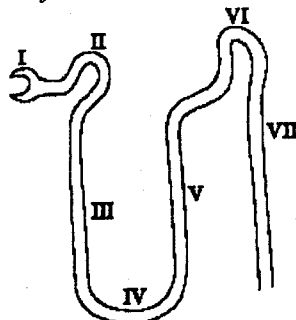


Figure 44.2

- 26) In which region would urine become more concentrated?
- I B) III C) IV D) V E) VII

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Ecology: Three points for each question

1. Gause's Competitive exclusion principle
2. Learning type
3. Niche
4. Dominance hierarchy
5. Social behavior
6. Biosphere
7. Limiting factor
8. Age-structure diagram