

臺北醫學大學九十二學年度第 1 學期 期中 考試 命題 紙

系級	科目	授課教師	考試日期	學號	姓名
牙三	生理學	孫志遠	93年01月12日第 2 節		

*①請注意本試題共 八 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)。

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系級	科目	授課教師	考試日期	學號	姓名
生	生理學	張志強	93年01月12日第2節		

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- Which cell(s) is/are the first arrive at the site of injury?
 (A) neutrophil (B) macrophage (C) fibroblast (D) myofibroblast.
- The oxygen tension is higher in which layer of the wound-healing modulus during wound healing process?
 (A) layer of macrophages (B) layer of neutrophils (C) layer of immature fibroblasts (D) layer of dividing fibroblasts.
- The lactate concentration is less in which layer of the wound-healing modulus during wound healing process?
 (A) layer of macrophages (B) layer of neutrophils (C) layer of immature fibroblasts (D) layer of dividing fibroblasts.
- Which condition(s) will decrease the collagen formation during wound healing process?
 (A) 5% of oxygen atmosphere tension (B) 95% of oxygen atmosphere tension (C) pressure application during wound healing (D) all of above.
- The major collagen(s) in the gingival tissue is/are
 (A) I, II (B) II, III (C) I, III (D) III, V.
- During the bone remodeling process, the osteoblast regulates the osteoclast via which mediators?
 (A) PE2, cAMP (B) IL-6, calcitonin (C) osteopontin, osteonectin (D) TNF, osteocalcin.
- Which of the following(s) is/are osteoclast precursor inhibitor?
 (A) PTH (B) Calcitonin (C) Vit D3 (D) PGs
- Which of the following factor(s) involve in the bone resorption of regional acceleratory phenomenon (RAP)?
 (A) IL-1 (B) IL-3 (C) TNFs (D) All of above.
- Which of the following hormones might have functional cross-reactivity with ADH due to the structure similarity?
 (A) Oxytocin (B) Prolactin (C) LH (D) Aldosterone
- Regarding the growth hormone, which of the following statements is incorrect?
 (A) Receptor is located on the cell membrane (B) Secretion is in a pulsatile pattern (C) Exerts the insulin-like effect (D) Can increase protein synthesis
- Which of the following hormones will have the biggest change in blood concentration after hypophysectomy
 (A) LH (B) Prolactin (C) TSH (D) ACTH
- Which of the following receptors contains DNA-binding domain
 (A) ADH receptor (B) Insulin receptor (C) ACTH receptor (D) Glucocorticoids receptor

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牙三	生理學	陳志吉	93年01月12日第2節		

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13. Which of the following hormones has less effect on the regulation of calcium homeostasis
 (A) Parathyroid hormone (B) Thyroid hormone (C) Calcitonin
 (D) Vitamin D
14. Which of the following hormones can directly control the intestinal calcium absorption?
 (A) Parathyroid hormone (B) Calcitonin (C) Vitamin D (D) Thyroid hormone
15. Regarding the central diabetes insipidus, which of the following statements is incorrect?
 (A) Circulating levels of ADH are low (B) Large volumes of dilute urine
 (C) A defect in the ADH receptor (D) Body fluids become concentrated
16. Which of the following treatments will **not** work for the Type II diabetes mellitus patient?
 (A) Insulin administration (B) Weight reduction (C) Caloric restriction
 (D) If the above answers are all correct, then choice this answer
17. Which of the following hormones exerts a strongest anti-inflammatory and immunosuppression effect?
 (A) Thyroid hormone (B) Somatostatin (C) Aldosterone
 (D) Glucocorticoids
18. Which of the following hormones can induce the synthesis of Calbindin D-28K, a cytosolic protein that can bind four Ca^{2+} ions?
 (A) Glucagon (B) Vitamin D (C) Parathyroid hormone (D) Thyroid hormone
19. Calcium homeostasis is controlled by the interplay of the following organs except
 (A) Bone (B) Intestine (C) Pancreas (D) Kidney
20. Beside the direct effect on target cells, some actions of growth hormone are mediated indirectly through the production of (A)
 (A) Somatomedin (B) Somatostatin (C) GRH (D) Insulin
21. 女性黃體 (Corpus Luteum) 的壽命約幾天?
 (A) 5 (B) 10 (C) 14 (D) 20
22. LH (黃體生成激素) surge 後約多少小時會排卵?
 (A) 6 (B) 16 (C) 26 (D) 36
23. LH 主要作用在男性睪丸的何種細胞?
 (A) Sertoli cells (B) Leydig cells (C) Granulose cells (D) Theca cells
24. LH (黃體生成激素) 是由哪裡分泌而來?
 (A) Hypothalamus (下視丘) (B) Pituitary (腦下垂體) (C) Ovary (卵巢)
 (D) Testis (睪丸)

臺北醫學大學九十二學年度第 1 學期 期中 考試 (命題) 題紙

系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
牙三	生理學	陳志直	93年01月12日第 2 節		

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25. Which of the following is entirely under nervous control and has no hormonal regulatory component?
 (A) salivary secretion. (B)gastric secretion. (C) pancreatic secretion. (D) liver secretion..
26. Which of the following factors will not influence the rate at which a meal will empty from the stomach?
 (A) fat in the duodenum. (B)acid in the duodenum. (C) caffeine in the duodenum. (D) hypertonicity of the duodenal contents.
27. Which statement regarding gastric motility and emptying is incorrect?
 (A)increased fluidity allows more rapid emptying. (B) presence of acid and fat in the stomach initiates the enterogastric reflex. (C) increased gastric volume stimulates motility. (D) vagal activity stimulates motility.
28. Which of the following does not occur during vomiting?
 (A)the diaphragm contracts. (B)the abdominal muscles contract. (C)the stomach contracts. (D)respiration is inhibited..
29. Which does not enter the duodenal lumen?
 (A)trypsinogen. (B)bile salts. (C)disaccharidases. (D)gastric contents.
30. Which of the following is absorbed receptor mediated endocytosis in the terminal ileum?
 (A)fatty acids and monoglycerides. (B)bile. (C)vitamin B₁₂ (D)amino acids.
31. Defecation in the human
 (A) Is a purely voluntary act (B) Is involuntary except for the use of abdominal muscles (C) Can be inhibited by impulses from higher cortical centers
 (D) Is involuntary except for the relaxation of the external anal sphincter
32. The muscularis mucosae of the small intestine:
 (A) Is stimulated by the parasympathetic nervous system (B) May produce movement of the villi (C) Is important in peristaltic activity (D) Is inhibited by sympathetic stimulation
33. Intestinal motility is increased by all of the following EXCEPT
 (A) CCK (B)secretin (C) gastrin (D) motilin
34. Bile salts promote lipid absorption as a result of their ability to do all the following EXCEPT
 (A) form micelles, or water-soluble complexes (B) reduce surface tension of fat particles (C) emulsify fat (D) stimulate reesterification in the mucosal cells

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系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
牙二	生理學	蔡文嘉	93年01月12日第 2 節		

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35. After a meal rich in carbohydrates is ingested, insulin secretion is probably stimulated by

- (A) GIP (B) CCK (C) VIP (D) Gastrin

36. Which enzyme doesn't need to be activator when it functions?

- (A) Elastase (B) Lipase (C) Trypsin (D) Chymotrypsin

For Question 37,38 AND 39: (1) Basal ganglion (2) Cerebellum (3) Cerebral Cortex (4) Thalamus (5) Hypothalamus (6) Spinal Cord (7) Brain Stem

37. Which one of the followings is the major central pathway for Motor Planning of Sustained Movement?

- (A) 3→1→4→3 (B) 3→4→7→6 (C) 3→2→4→6 (D) 3→1→5→6

38. Which areas are on the sensory ascending pathway for Cognition?

- (A) 1, 2, 3 (B) 2, 3, 6 (C) 3, 4, 7 (D) 2, 6, 7

39. In a 100-student-filled classroom, the teacher Noticed that Jeff was sleeping. Jeff's image was enhanced in ____ through _____. (A) 1, disinhibition (B) 6, reciprocal innervation (C) 3, synaptic plasticity (D) 4, lateral inhibition

40. Regarding the second messengers involved in special sense, which one of the following statements is CORRECT?

- (A) light → increase of cGMP in photoreceptor → depolarize photoreceptors → visual transmission occurs
 (B) Sweet → increase of cAMP in taste receptor cells → depolarize taste receptors → sweet taste transmission occurs
 (C) Bitter → increase of cAMP in taste receptor → depolarize taste receptors → bitter taste transmission occurs
 (D) All of the above statements are Incorrect

41. Regarding Visual Adaptation, which one of the following statements is WRONG? (A) Vision in the dark is primarily transmitted by Rod photoreceptor. (B) Vision in the light is primarily transmitted by Cone photoreceptor. (C) Walking from a sunshine environment to a dark room, we will experience a temporary blindness because the photopigment of the rods are not fully reactivated. (D) People who intake too little of Vitamin A might have color blind.

42. Layer 4 of the cortical vertical column is dominated in the Primary Sensory Cortex areas because of its:

- (A) extensive projection of dendrites (B) large cell body (C) long axon (D) none of the above.

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系 級	科 目	授 課 教 師	考 試 日 期	學 號	姓 名
三 生 理 學	孫 志 高 等	92 年 01 月 12 日 第 2 節			

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43. Which one of the following statements regarding the State of Consciousness is CORRECT?
- (A) EEG recording shows slow frequency wave when the subject is dreaming (B) EEG recording shows slow frequency wave when the subject is deeply anesthetized. (C) EEG recording shows slow frequency wave when the subject feels sleepy. (D) EEG records action potentials propagating along the cerebral cortex, which reflect the state of consciousness
44. Which one of the following statements is Most Unlikely appeared in the neurological test of a Spinal Cord-Injured patient?
- (A) Not able to stand up (B) Appearance of Babinski's sign (C) Loss of knee jerk reflex (D) All of the above are likely to appear
45. Which chemical cannot directly activate C-fibers?
- (A) K^+ (B) Bradykinin (C) Substance P (D) Histamine
46. Choose the WRONG description about the gray matter of spinal cord structure:
- (A) It can be divided into ten laminae according to the cells morphology and function. (B) The sensory neurons are mostly located at the dorsal portion. (C) Most neurons in laminae I & II receive inputs from $A\alpha$ and $A\beta$ fibers. (D) Most neurons in laminae III & IV responds to non-noxious mechanical stimulation.
47. Which description about peripheral sensory fibers is WRONG?
- (A) The terminals of a C-fibers have specialized organs to transform stimulation energy into action potential. (B) The conduction velocity of a C-fiber is less than 2m/sec which is the slowest among peripheral sensory fibers. (C) So far, $A\alpha$ fibers are known to transform only mechanical stimulation into action potentials. (D) C-fibers contain inflammatory chemical in vesicles at nerve terminal and play a critical role in the development of inflammation.
48. Which description about the first pain and the second pain is WRONG?
- (A) The first pain is mediated via $A\alpha$ fibers, while the second pain is mediated via C-fibers. (B) The first pain and second pain phenomenon is due to the difference in conduction velocity between A fibers and C- fibers. (C) Single-pulse electrical stimulation of A fibers can produce an inhibitory effect against inputs from C-fibers. (D) The inhibition is produced by activation of inhibitory interneurons in the spinal cord.
49. About acute inflammation, which description is WRONG?
- (A) Within 12 hours following a surgery, the inflammation is acute. (B) Ice packing is recommended for acute inflammation. (C) Inflammation lasting longer than 72 hours is defined as chronic and moist heat packing is always recommended for inflammation after 72 hours. (D) Any disturbance to the

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系級	科目	授課教師	考試日期	學號	姓名
牙二	生理學	孫志遠	92年01月22日第2節		

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- healing process can reverse the chronic inflammation into acute status again.
50. Which is NOT the possible mechanism underlying hyperalgesia following induction of inflammation?
 (A) Sensitization of peripheral sensory nerve fibers. (B) Enlargement of the receptive field of peripheral sensory nerve fibers. (C) Activation of silent peripheral nerve fibers. (D) Sensitization of central sensory neurons by neurotransmitters.
51. Kidneys keep homeostasis within body through what mechanism?
 (A) Filtration (B) Secretion (C) Reabsorption (D) All of above
52. What kind of measurement is used clinically to represent renal function of a patient?
 (A) Transtubular potassium gradient (B) PHA clearance rate (C) Fractional excretion of bicarbonate (D) Glomerular filtration rate
53. A gentleman goes to hospital to test his renal function. Laboratory tests reveal serum sodium 140 meq/L, serum potassium 4.2 meq/L, serum creatinine 0.8 mg/dl, serum blood urea nitrogen 12 mg/dl, urine sodium 40 meq/L, urine potassium 8 meq/L, urine creatinine 72 mg/dl, urine blood urea nitrogen 42 mg/dl, 24 urine amount is 2000 ml/day. You can estimate his renal function from above data. Which is the best indicator of his renal function?
 (A) Creatinine clearance 125 ml/min (B) Creatinine clearance 100 ml/min (C) Fractional excretion of sodium 0.4% (D) Renal blood flow 600 ml/min.
54. The osmolarity of extracellular fluid and intracellular fluid determines the distribution of the body water. How can we know about the water in intracellular fluid is too much or too little? We can use which of the following measurement to get the answer indirectly.
 (A) Serum calcium concentration (B) Serum magnesium concentration (C) Serum potassium concentration (D) Serum sodium concentration
55. For a dehydrated patient whose blood pressure decreased and heart rate rose. What in the following is the best fluid supply for this patient?
 (A) Pure water (B) Fluid containing calcium (C) Fluid containing sodium (D) fluid containing glucose
56. Potassium is very important in maintaining the resting membrane potential. Which transport mechanism is the most important one to keep potassium within the cells?
 (A) K^+ channel (B) ATPase (C) $Na^+-K^+-Cl^-$ co-transporter (D) Na^+-K^+ ATPase
57. To maintain a steady acid-base status, kidney has to reclaim almost all the bicarbonate within glomerular filtrate. Bicarbonate reabsorption occurs mainly

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系 級 科	目	授 課 教 師	考 試 日 期	學 號	姓 名
牙三 生理學		林 志 高 等	92年 01月 12日 第 2 節		
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- in which nephron segment?
 (A) Proximal tubule (B) Thin descending limb of loop of Henle (C) Thick ascending limb of loop Henle (D) cortical collecting tubule
58. To keep the body fluid as efficient as possible, mammals' kidney has to develop countercurrent mechanism and excret concentrated urine. What is the primary active step in making concentrated urine?
 (A) K^+ channel in distal tubule (B) ATPase in proximal tubule (C) $Na^+-K^+-Cl^-$ co-transporter in thick ascending limb of loop of Henle (D) Na^+-K^+ ATPase in collecting tubule
59. An old lady has diabetes and diabetic nephropathy. She has a consistent high level of serum potassium. The abnormality is due to inadequate excretion of potassium in collecting tubule. What is the hormone in problem?
 (A) Antidiuretic hormone (ADH) (B) Renin (C) Aldosterone (D) Angiotensin I
60. A young lady has a urine amount up to 10,000 ml a day. She was found to have a disease which has a defect in concentrating her urine. What is the defected hormone?
 (A) Antidiuretic hormone (B) Atrial natriuretic peptide (C) Calcitriol (D) Prostaglandin