

STATE OF PALESTINE

AL-AQSA UNIVERSITY

FACULTY OF SCIENCE- Medical
Tech. Dept.



دولة فلسطين

جامعة الأقصى

كلية العلوم - قسم التكنولوجيا الطبية

التاريخ: 29/5/2018

الزمن: ساعتان

عدد الأسئلة: 6 أسئلة

الاختبار النهائي لمساق

Blood Bank

MEDT4321

الفصل الثاني 2017 / 2018م

محاضر المساق:

أ. محمد إسماعيل داود

رقم الطالب/ة:

اسم الطالب/ة

MCQ's

1. a b c d
2. a b c d
3. a b c d
4. a b c d
5. a b c d
6. a b c d
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9. a b c d
10. a b c d
11. a b c d
12. a b c d
13. a b c d
14. a b c d
15. a b c d
16. a b c d
17. a b c d
18. a b c d
19. a b c d
20. a b c d
21. a b c d
22. a b c d

True & False

1. T F
2. T F
3. T F
4. T F
5. T F
6. T F
7. T F
8. T F
9. T F
10. T F

I. Choose the correct answer

20 Marks (2 Bonus)

- 1- **The choice of FFP blood group to be transfused to B + patient**
 - a. AB+
 - b. O+
 - c. A+
 - d. O –Neg
- 2- **Packed RBCs is indicated to be transfused when**
 - a. Patient with chronic bleeding and Hb 8.3 g/dl
 - b. Congestive heart failure Hb 11.5 g/dl
 - c. Anemic patient with Hb 6.8 g/dL
 - d. b&c
- 3- **----- can strongly causes HDN**
 - a. Anti Jk^a
 - b. Anti s
 - c. Anti K
 - d. Anti E
- 4- **One of the following is irreversible change in stored RBCs**
 - a. Imbalanced Sodium Potassium
 - b. Decrease of 2,3 DPG and Oxygen carrying capacity
 - c. Decrease pH and lactic acid
 - d. Depletion of ATP and loss of membrane lipid
- 5- **Cross match technique that depends on Protein G ligand in active matrix and has high affinity for all IgG subclasses.**
 - a. Red Cell Affinity Column Technology (ReACT)
 - b. Solid Phase Adherence Assays (SPAA)
 - c. Gel technology
 - d. Manual technique
- 6- **The nomenclature of the hr⁺ in the fisher-race mean the antigen of**
 - a- Rh C
 - b- Rh E
 - c- Rh c
 - d- Rh e
- 7- **One of the following tests is not routinely required in screening of blood units**
 - a. HBV
 - b. HIV
 - c. HCV
 - d. HSV
- 8- **The RBCs blood group of choice to be transfused to AB+ neonate, where his mother is B Neg)**
 - a. O Neg
 - b. A Neg
 - c. B Neg
 - d. AB Neg

- 9- Administration of whole blood to a patient with congestive heart failure could result
- Circulatory overload
 - Hyperkalemia
 - TRALI
 - Delayed HTR
- 10- One of the following blood group systems is commonly associated with delayed hemolytic transfusion reactions
- Duffy Blood Group antigens
 - I Blood Group antigens
 - P Blood Group antigens
 - Lutheran Blood Group antigens
- 11- Transfusion of 2 units of Packed RBCs to an adult male with Hb of 5.8 g/dl, will increase the Hb level to
- 7.6 g/dl
 - 8.9 g/dl
 - 9.7 g/dl
 - 10.2 g/dl
- 12- After thawing, FFP must be transfused within
- 1 day
 - 1 week
 - 6 hours
 - 12 hours
- 13- The immunodominant sugar of A antigen is
- N-acetyl-D-Neuroaminic ACID
 - L-Fucose
 - N-acetyl-D-galactosamine
 - N-acetyl-D-glucosamine
- 14- Lewis antibodies aren't generally implicated in hemolytic disease of newborn (HDN) because
- Lewis antigens are well developed at birth.
 - Lewis antibodies are IgM and cannot cross the placenta.
 - Lewis antigens can readily dissociate from the red cell
 - Lewis antibodies do not bind complement.
- 15- The only adverse reaction of transfusion of B ECO RBCs to A or O patient
- Increase of anti-B titer
 - Toxicity
 - Loss of RBCs function
 - Affected of RBCs permeability

- 16- In the process of identifying an antibody, 2+ reactions were detected with 7 of the 10 cells in a panel at the IS phase. These reactions disappeared following incubation at 37° C and the AHG phase of testing. The antibody most likely to be of the following
- Anti C
 - Anti N
 - Anti-Jk^a
 - Anti S
- 17- Patient with Coumadin overdose who is actively bleeding, is managed by administration of
- Frozen plasma
 - FFP
 - Albumin
 - Plt concentrate
- 18- A 35 years old O negative male trauma patient receives a transfusion of two units of O+ Pos packed RBCs before his blood type is known. After his typing is completed he is switched to O-Neg and he receives 6 additional units. He survives and is transferred to the ICU. which of the following is true regarding his situation
- He will form anti-D
 - He is at high risk for an acute hemolytic transfusion reaction
 - He should immediately be given 20 vials of Rh immunoglobulin
 - He is unlikely to develop delayed hemolysis
- 19- Platelets conc., is stored at
- 8° C
 - 80° C
 - 20° C
 - 22° C
- 20- Which of the following indicates poor quality of cryo precipitate
- Volume : 40-60 ml
 - Factor VIII > 70 IU/unit
 - Fibrinogen > 140 mg per unit
 - Storage temperature -80° C
- 21- A 70 kg male with a Plt count of 15,000 was given 6 units of pooled platelets, what would you expect the post-transfusion platelet count to be?
- 25-35,000/uL
 - 45-75,000/uL
 - 75-125,000/uL
 - 85-145,000/uL
- 22- Dithiothreitol (DTT) can destroy antigens of
- Lutheran system
 - Kell system
 - I system
 - Lewis

II. True and false

10 Marks

1. M^k allele produces no M, N, S, or s antigens and usually associated with anti U ()
2. The expression of the ABH antigens is controlled by ABO and Se genes only ()
3. Hyperkalemia is delayed non immune mediated blood transfusion reaction ()
4. Each unit of PRBCs contains approximately 60g Hb or 250 mg iron ()
5. It's useless to perform compatibility test in case of massive blood transfusion ()
6. It's not a life threatening situation when an acquired clinically significant Abs is not detected in cross match. ()
7. Major cross matching is required for fresh frozen plasma and Plt transfusion ()
8. All frozen components should be transported at 2-8°C ()
9. PRP is prepared by centrifugation at heavy spin ()
10. Detection of Anti-HBc IgM indicates acute phase of hepatitis B ()

III. Fill the space

5 Marks

1. ----- can preserve the blood for 21 days
2. Presence of ----- is a marker of hepatitis B recovery.
3. ----- is essential for the presentation of the Rh antigens
4. Increase the patient's temperature 1°C or more within 24 hrs post blood transfusion is known -----
5. Absence of ----- causes McLeod Syndrome

IV. Explain the following

5 Marks

1. PRBCs must be stored at low temperature 2-8°C
2. Anti M could be implicated in HDN

3. PRP is prepared by using light spinning
4. Hemodialysis patients must receive relatively fresh blood (10 days)
5. I antigen is non-clinical significant antigen

V-Write the clinical use of the following

5 Marks

1- Packed RBCs

2- O Universal RBCs

3- FFP

VI- Mention

5 Marks

1- Advantages of autologous blood donation

2- The primary and secondary purpose of pre-transfusion tests

3- Preparation of frozen RBCs

انتهت الأسئلة

أتمنى لكم النجاح

التاريخ: 2018 / 5 / 24

الزمن: 2 ساعة

الرقم الجامعي:

الاختبار النهائي لمساق

Endocrinology

الفصل الأول: 2018-2017

محاضر المساق: د. حسام راشد

اسم الطالب:

Q 1. Choose the correct answer for each of the following questions

(30 Marks)

- One of the two hormones made by the pituitary that help regulate reproductive cells is luteinizing hormone. The other hormone is
 - Androgens
 - Follicle stimulating hormone
 - Epinephrine
 - Norepinephrine
- Calcium level in the blood is regulated by the:
 - Parathyroid and thyroid
 - Adrenal medulla and pancreas
 - Testes
 - Parathyroid and thymus
- Estrogens and progesterone are produced by:
 - The testes.
 - The ovaries.
 - The adrenal glands.
 - The hypothalamus
- The alpha cells of the pancreas secrete _____, which targets the _____.
 - Glucagon; liver
 - Melatonin; liver
 - Glucagon; kidney
 - Calcitonin; thyroid
- Which of the following has both endocrine and exocrine functions?
 - Anterior pituitary
 - Thyroid
 - Adrenal medulla
 - Pancreas
- What stimulates the release of PTH from the parathyroid gland?
 - TSH from the posterior pituitary gland
 - High levels of calcium in the blood
 - Calcitonin from the anterior pituitary gland
 - Low levels of calcium in the blood
- Disorder in which thyroid gland enlarges is classified as
 - Parathyroidism
 - Hypothyroidism
 - Hyperthyroidism
 - Goiter

8. The zona fasciculata of the adrenal cortex produces hormones collectively known as
- Glucocorticoids
 - Mineralocorticoids
 - Androgens
 - Epinephrine
9. Diabetes Type II is caused by
- Decrease in the production of insulin by alpha cells in the pancreas
 - Decrease in the insulin receptors found on cell membranes
 - The failure of the liver to convert glycogen to glucose
 - Inhibition of the beta cells in the pancreas by pituitary regulating factors
10. Gluconeogenesis occurs in the liver due to the action of _____
- Aldosterone
 - Cortisol
 - Secretin
 - Insulin
11. The parathyroid glands maintain adequate levels of blood calcium. This is accomplished through _____.
- Targeting the bone and activating osteoclasts so that calcium will be released
 - Antagonizing the synthesis of calcitonin
 - Blocking the action of growth hormone
 - Slowing the activity of tissues that require calcium for activity
12. The most important regulator of electrolyte concentrations in extracellular fluids is _____.
- Glucagon
 - Aldosterone
 - Cortisol
 - Insulin
13. Which of the following is *not* a steroid-based hormone?
- Epinephrine
 - Aldosterone
 - Estrogen
 - Cortisone
14. How do glucocorticoids enable the body to deal appropriately with stress?
- By stimulating the pancreas to release insulin
 - By blocking the neurotransmitters that prepare the body for the stress response
 - By decreasing the heart rate, thus decreasing blood pressure
 - By increasing blood glucose, fatty acid, and amino acid levels and enhancing blood pressure
15. The pituitary hormone that stimulates the male testes to produce sperm and stimulates the development of the follicle in the female on a monthly cycle is:
- Growth hormone
 - Luteinizing hormone
 - Prolactin
 - Follicle-stimulating hormone
16. Which of the following is a glycoprotein in nature:
- Growth hormone
 - Anti-diuretic hormone
 - Acetylcholine
 - Thyroid stimulating hormone

17. Which one of the following gland stores its own secretory products?
- Thyroid gland
 - Parathyroid gland
 - Pituitary gland
 - Adrenal gland
18. Regarding the mechanism of hormone actions, which one is correct:
- G proteins are monomeric
 - GDP activates G proteins
 - Gs and Gi proteins represent, respectively, stimulatory and inhibitory G proteins
 - GTP is bound to the Beta subunit of G protein to activate it
19. Thyroid hormone stored in the lumen of follicles is in the form of:
- Free T3
 - Free T4
 - Attached to thyroglobulin in the gland
 - Attached to thyroid binding globulin
20. Regarding the Na/I cotransport pump, which one of the following is FALSE:
- Low levels of I⁻ stimulate the pump
 - It is inhibited by thiocyanate
 - High levels of I⁻ stimulate the pump
 - It is called Iodine trap
21. The second messenger for adenylyl cyclase mechanism is:
- IP3 \ Ca²⁺
 - G protein
 - cAMP
 - protein kinase
22. T4 is converted to T3 in the target tissues by the action of:
- Thyroid peroxidase
 - 21-Hydroxylase
 - 5'-Iodinase
 - Protease
23. Which one of the following is a feature of grave's disease?
- Myxedema
 - Exophthalmos
 - Decreased heart rate
 - Increased musculature
24. Which one of the following laboratory results will be expected in secondary hypothyroidism?
- High T3 – high T4 - low TSH
 - High T3 – low T4 - low TSH
 - Low T3 – low T4 - low TSH
 - Low T3 – high T4 - high TSH
25. Prolactin secretion is suppressed in non-pregnant women by:
- Estrogens
 - Progesterone
 - Dopamine
 - FSH

26. Excess release of ACTH will lead to

- a. ↓ CRH
- b. Atrophy of the adrenal gland
- c. Addison's disease
- d. None of the above

27. Mechanism of action of ADH:

- a. Insertion of water channels (pores) into basolateral membrane
- b. Insertion of water channels into luminal (apical) membrane
- c. Removal of water pores from apical membrane
- d. Increased Na⁺ uptake in distal convoluted tubules.

28. Which one of the following is an active form of vitamin D?

- a. 7-dehydrocholesterol
- b. Cholecalciferol
- c. 25-hydroxycholecalciferol
- d. 1,25-dihydrocholecalciferol

29. Which of the following hormones is (are) secreted by the adrenal gland in response to stress and promote(s) the synthesis of glucose from non-carbohydrate substrates?

- a. Glucagon
- b. Glucocorticoids
- c. Epinephrine
- d. ACTH

30. Which of the following produce antagonistic results?

- a. Calcitonin and parathyroid hormone
- b. FSH and LH
- c. ADH and vasopressin
- d. Oxytocin and prolactin

MCQ	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	27	28	29	30

Q 2. Put True (T) or False (F)**(10 Marks)**

1. () Atrial natriuretic peptide is a hormone that controls blood pressure in part by increasing the urinary excretion of sodium.
2. () Most type 2 diabetics do not produce insulin.
3. () Glucocorticoids are steroid hormones that usually enhance the immune responses when an individual is suffering from severe stress.
4. () The prime metabolic effect of cortisol is gluconeogenesis.
5. () Addison's disease is due to a deficit output of glucocorticoids only.
6. () The presence of specific receptor sites on the cell membrane ensures the correct signaling of hormones to target cells.
7. () Insufficient amounts of thyroxine production in a child causes cretinism.
8. () The endocrine gland that is probably malfunctioning if a person has a high metabolic rate is the parathyroid.
9. () Gluconeogenesis occurs in the liver due to the action of insulin.
10. () Type 2 diabetics may reflect declining receptor sensitivity to insulin rather than decreased insulin production.

✓ or X	1	2	3	4	5	6	7	8	9	10

Q 3. Fill in the spaces with the suitable word (s):**(10 Mark)**

1. FSH stimulates testes to secrete _____, which inhibits FSH secretion.
2. The hydroxylation of D3 induced by PTH occurs in _____ by _____
3. Cholesterol is cleaved in mitochondria by _____ to form pregnenolone.
4. Before organification, iodide ions are oxidized by _____ in thyrotropes.
5. Deficiency of _____ after menopause leads to osteoporosis.
6. FSH and testosterone exert _____ action in spermatogenesis during puberty.
7. Two β units of inhibin combine forming _____, which stimulates the secretions of _____.
8. _____ is a disease that develops in children with a deficiency of thyroxin.

1. Explain the Push-Pull Mechanisms in hormonal integration with example.

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2. Discuss the source and function of ANP (Atrial Natriuretic Peptide).

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3. Describe the production of 1,25-dihydroxyvitamin D3.

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4. List the three factors that increase renin secretion.

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انتهت الأسئلة

With best wishes

Dr. Hussam Rashed



FACULTY OF APPLIED SCIENCE

MEDICAL TECHNOLOGY DEPARTEMENT

FINAL EXAMINATION IN MEDICAL HISTOLOGY MAY 2018

NAME:-----

I – Encircle the ONE BEST answer to each question (One mark each):

● The most commonly involved sinus in chronic sinusitis is:

- A. Maxillary sinus B. Frontal sinus C. Ethmoid sinus D. Sphenoid sinus

● Bronchioles differ from bronchi by:

- A- Presence of smooth muscles B- Lack of submucous glands
C- Lack of cartilage D- B & C only E- All of the above

● The capacity of pleural space is about:

- A. 50 CC B. 25 CC C. 15 CC D. 30 CC

● Dust cells are:

- A- Heart failure cells B- Phagocytic cells of lung
C- Phagocytic cells of liver D- A&B

● The alveoli are formed by:

- A. Simple squamous epithelium B. Simple cuboidal epithelium
C. Simple columnar epithelium D. Respiratory epithelium

● In human adults, an average volume of blood is about:

- A- 4 liters B- 5 liters C- 6 liters D- 7 liters

● Universal recipients, are people with blood type:

- A-A B-B C-AB D-O.

● Which of the following is NOT considered a "formed element"?

- A. Plasma B. Erythrocytes C. Platelets D. W.B.C E. R.B.C.

● Is the second most abundant leukocyte in a peripheral smear of blood.

- A. Lymphocytes B. Basophils C. Neutrophil D. Monocytes

● Which leukocyte has orange-pink granules?

- A. Lymphocytes B. Monocytes C. Eosinophil D. Basophils

● The largest endocrine organ is:

- ☉ Liver ☉ Pancreas ☉ Thyroid gland ☉ Adrenal gland

● The shortest male urethra:

- A. Prostatic urethra B. Membranous urethra C. Penile Urethra

● The thickest layer of the uterus is the :

- A. Endometrium B. Myometrium C. Perimetrium

● Insulin is secreted from?

- A. Alpha cells B. Beta cells C. Gamma cells D. Delta cells

● Hemophilia:

- A. Dominant autosomal inherited disease B. Recessive autosomal inherited disease
C. X-chromosome inherited disease D. Y-chromosome inherited disease

● Life span of erythrocytes is about?

- A. Four days B. Four weeks C. Four months D. Four years

● Which cell type differentiates into macrophages?

- A-Megakaryocyte B-Monocyte C- Eosinophil D- Platelets.

● Bone derives from the

- A- Endoderm B- Mesoderm C- Ectoderm

● The main factor that causes urine to enter the urinary bladder is:

- A. Osmosis B. Gravity C. Pressure D. Peristalsis

● Regeneration of the epidermis occurs every

- A. 3 days B. 1 week C. 2 week D. 3 weeks

● Readily subject to rupture from mechanical (blunt) trauma

- A. Liver C. Eye D. Spleen E. kidney

II- For each numbered word or phrase choose:

A- if the item is associated with (A) only

B- if the item is associated with (B) only

C- if the item is associated with both (A) and (B)

D- if the item is associated with neither (A) nor (B)

----- Erythropoietin

A-Liver

B- Kidney

----- Vascular tissue (s)

A-Epithelium

B- Cartilage

----- Mixed organs (endocrine & exocrine function)

A- Testes

B-Pancreas

----- Buffy coat

A- Thrombocytes

B- R.B.Cs

----- Voice box

A- Larynx

B- Pharynx

----- Corpus luteum

A- White body

B- Yellow body

----- Aldosterone

A- Renal cortex

B- Renal medulla

----- **Pus cells**

A- Dead neutrophils

B- Macrophages

----- **Ileum**

A- Brunner's gland

B- Peyer's patches

----- **Retroperitoneal organ/s**

A-Rectum

B- Transverse colon

----- **Catecholamines**

A-Epinephrine

B- Norepinephrine

----- **Female Urethra**

A- Pseudostratified squamous epithelium

B- Stratified squamous epithelium.

----- **Juxtaglomerular cells**

A- Sodium

B- Renin

----- **Pure endocrine gland**

A- Thyroid gland

B- Testis

----- **Reduction cell division**

A-Mitosis

B- Meiosis

III- Matching (One mark each):

I-

----- Allergy

A- Basophils

----- Most abundant leukocytes

B- Erythrocytes

----- Large blue granules

C- Thrombocytes

----- Contains hemoglobin

D- Eosinophils

----- Hemostasis

E- Polymorphs

II.

- | | |
|------------------------------|-------------------------|
| -----Milk production | A- Prolactin |
| -----Stimulate cell division | B- Testosterone |
| ----- Water homeostasis | C- Oxytocin |
| ----- Uterine contraction | D- Antidiuretic hormone |
| -----Male characteristics | E- Growth hormone |

III-

- A- Stratum functionale B- Stratum basale
C- Both A & B D- Neither A & B

- Includes the uterine surface epithelium
- Includes connective tissue
- Undergoes cyclic thickening and shedding
- Changes little during menstrual cycle
- More responsive to ovarian hormones
- Contains cell that proliferate to recover uterine surface after menstruation

IV- ENCIRCLE the CORRECT sentence ONLY (One mark each)

- ☺ In the human, usually only one oocyte is liberated by the ovary during each cycle.
- ☺ Stereocilia are very long microvilli which seen in the epididymis.
- ☺ The left kidney is lower than the right one.
- ☺ The lung has NO function in the fetus.
- ☺ Wright's stain is a common histology stain to visualize a peripheral blood smear.
- ☺ Bone marrow is the major site of formation of blood cells in normal adult humans.

- ☺ The superior third of esophagus consists of skeletal & smooth muscles
- ☺ There is no fibrocartilage in the larynx.
- ☺ Alcohol inhibits the release of antidiuretic hormone
- ☺ The isthmus is the narrowest part of the fallopian tube
- ☺ The hormones are secreted by ductless glands
- ☺ Core body temperature is about (37 C)
- ☺ Histologist could not be pathologist but pathologist could be histologist.

V- Fill in the blank the appropriate word / s (One mark each):

-----means the study of cells & body fluids by microscopy.

Histology is also known as-----

-----is a universal fixative used for tissue preservation.

----- is the ordinary stain used for routine histological examination.

----- give rise to all tissues of human body.

----- is specialized type of connective tissue.

-----is the functional unit of bone.

The urinary bladder is lined by -----

----- is an immature cartilage cell which produces the cartilaginous matrix.

----- is an immature bone cell.

-----forms the epiphyseal growth plate.

-----takes place in approximately the middle of the menstrual cycle.

Females produce about ----- functional follicles a lifetime.

-----is the widest portion of fallopian tube.

-----is doughnut-shaped gland that part of
the urethra inferior to the bladder .

V- Enumerate

FOUR basic types of tissue (Four marks):

- 1-----2-----
3-----4-----

Layers of epidermis (Five marks):

- 1-----2-----
3-----4-----
5-----

FOUR functions of renal system (Four marks):

- 1-----2-----
3-----4-----

FIVE functions of blood (Five marks):

- 1-----2-----
3-----4-----
5-----

Layers of alminatory tract wall from lumen to out (Four marks)

- 1-----2-----
3-----4-----

END THE QUESTIONS

Best wishes- Good Luck

Happy advanced graduation

DR ALAA AL-BAYOUK, RMT, MD, PhD

MAY 19, 2018



Medical Terminology	اسم المساق	غزة - طلاب - الفترة الثالثة	اسم الطالب/ة
MEDT 2205	رقم المساق	2017 – 2018	الفصل الثاني :
ساعتين	مدة الامتحان	غزة / خانيونس	الشعبة
13:30-15:30	وقت الامتحان	أ. ناهض عبد اللطيف - د. محمد الاستاذ	مدرسو المساق
24.05.2018	تاريخ الامتحان	عدد الصفحات 5	عدد الأسئلة 5

Q 1. Select the correct term to fill the space (10 Mark)

{cirrhosis, antigen, Hemocult test, anorexia, nephrologists, epistaxis, asphyxia , hypercrinism, malnutrition, anoxia, allergens, hyperglycemia, **sarcoma**, thyroid storm, hydronephrosis}

sarcoma is a malignant tumor that arises from connective tissues, including hard tissues, soft tissues, and liquid tissues

- Any substance that produces allergic reactions is called _____.
- _____ is an abnormally high concentration of glucose in the blood.
- The absence of oxygen from the body's gases, blood, or tissues is termed _____.
- Bleeding from the nose that is caused by an injury or bleeding disorders is termed _____.
- _____ progressive degenerative disease of the liver that is often caused by excessive alcohol use or by viral hepatitis B or C.
- Patients experiencing a _____ may complain of fever, chest pain, palpitations, shortness of breath, increased sweating, disorientation, and fatigue.
- The physician who specializes in diagnosing and treating diseases of the kidneys is called _____.
- The fecal occult blood test, _____ is a laboratory test for hidden blood in the stools.
- _____ is the loss of appetite for food, especially when caused by disease.
- The dilation of one or both kidneys _____, caused by problems associated with the backing up of urine

Q.2. Write the medical term of the following abbreviations (7 Marks)

AIHA

Autoimmune Hemolytic Anemia

- KUB
- IBS
- COPD

4. UTI
5. ARDS
6. ESRD
7. GERD

Write all of the T & F answers in the following table.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Q 3. Put True (T) or False (F) (15 Marks)

1. AIDS is abbreviation of acquired immunodesplastic syndrome
2. Pyelotomy is the surgical repair of the renal pelvis
3. Emphysema is the progressive loss of kidney function, characterized by a decrease number of nephrons
4. A nephrologist is a physician who specializes in diagnosing and treating diseases and disorders of the urinary system of females and the genitourinary system of males
5. Acquired immunity, known as active immunity, is the production of antibodies against a specific antigen
6. Nephrotic syndrome has sudden onset and is characterized by uremia and It can be fatal.
7. Cholecystitis is an acute infection of the bile duct characterized by pain in the upper-right quadrant of the abdomen, fever, and jaundice
8. Lobectomy: this term is used only to describe the surgical removal of one lobe of the thyroid gland
9. Rhinorrhea is an excessive discharge of mucus from the bronchi.
10. Polyuria is the opposite term of nocturia
11. Interferon is a family of proteins produced by the B - cells whose specialty is fighting viruses by slowing or stopping their multiplication.
12. Stomatocytosis is any disease of the mouth due to a fungus
13. Volvulus is the twisting of the intestine on itself that causes an obstruction. It's a condition that usually occurs in infancy.
14. Laryngoplegia is the sudden spasmodic closure of the larynx
15. An allergy, also known as hypersensitivity, is an overreaction by the body to a particular antigen.

Write all of the MCQ 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

Q 4. Multiple choice questions

(20 Marks)

1. An inflammation of the liver

- A. hepatomegaly
- B. hepatoectomy
- C. gastritis
- D. hepatitis

2. The surgical fixation of a floating kidney

- A. Nephrostomy
- B. Nephropexy
- C. Nephrosis
- D. Nephrotomy

3. The term describes difficult or painful urination

- A. Dyspepsia
- B. Dysuria
- C. Dystrophy
- D. Dysphagia

4. The most abundant antibody found in the serum

- A. IgM
- B. IgG
- C. IgD
- D. IgA

5. Examination of urine to determine the presence of abnormal elements.

- A. Hemolysis
- B. Catheterization
- C. Dialysis
- D. Urinalysis

6. A condition in which excessive secretion of insulin in the bloodstream occurs

- A. Hyperglycemia
- B. Hyperinsulinism
- C. Diabetes Mellitus
- D. Polyphagia

7. Which statement is accurate regarding cystic fibrosis (CF)?

- A. In CF red blood cells take on a sickle shape.
- B. CF is also known as iron overload disease.
- C. CF is characterized by short lived red blood cells.
- D. CF is a genetic disorder that affects lungs and digestive system.

8. The presence of glucose in the urine is known as

- A. glycosuria
- B. calciuria
- C. hematuria
- D. albuminuria

9. The hormonal disorder known as results from the pituitary gland producing too much growth hormone in adults

- A. cretinism
- B. acromegaly
- C. gigantism
- D. pituitarism

10. Which substance is commonly known as good cholesterol?

- A. homocysteine
- B. High density lipoprotein cholesterol
- C. triglycerides
- D. Low density lipoprotein cholesterol

11. The bluish discoloration of the skin caused by a lack of adequate oxygen is known as

- A. cyanosis
- B. erythema
- C. jaundice
- D. pallor

12. Respiratory disease commonly known as whooping cough

- A. Coup
- B. Diphtheria
- C. Emphysema
- D. Pertussis

13. The term describes excessive urination during the night

- A. nocturia
- B. polydipsia
- C. polyuria
- D. urinary retention

14. Any acute infection of the renal pelvis

- A. pyurea
- B. pyoderma
- C. pyelitis
- D. Pyrosis

15. When the body has too much thyroid hormone, the condition known as

- A. goiter
- B. hyperthyroidism
- C. myxedema
- D. thyroid storm

16. Hypercalcemia is

- A. the overproduction of the sodium
- B. high concentration of potassium
- C. characterized by abnormally high concentrations of calcium
- D. characterized by abnormally low levels of calcium in the blood

17. An antigen is:

- A. any substance that the body regards as being foreign
- B. a substance that produces an allergic reaction
- C. a disease-fighting protein
- D. a family of proteins produced by the T cells

18. Exhalation

- A. act of taking in air
- B. act of breathing out
- C. exchange of oxygen and carbon dioxide
- D. all of the above

19. The term describes the surgical repair of a nerve

- A. Neuralgia
- B. neuritis
- C. neurology
- D. neuroplasty

20. Abnormal overgrowth of the entire body that is caused by excessive secretion of the growth hormone before puberty

- A. Hyperpituitarism
- B. Pituitarism
- C. Hypercrinism
- D. Gigantism

21. Acute renal failure

- A. is the progressive loss of renal function, leading to uremia
- B. sudden onset and is characterized by uremia and It can be fatal
- C. refers to the late stages of chronic renal failure
- D. is any degenerative kidney disease

Q.5. Give the meaning of each part of the following terms (8 Marks)

Neoplasm (neo- means new or strange, and -plasm means formation)

1. Hematemesis
2. Hypoparathyroidism
3. Pyelotomy
4. Homeostasis
5. Polydipsia
6. Polyphagia
7. Glomerulonephritis
8. Metastasis

GOOD LUCK

Al-Aqsa University

Med. Tech. Department

final exam of Clinical Lab. instrumentation

Time: 2.0 hr, Date: 28/5/2018

Name:



جامعة الأقصى

قسم العلوم الطبية المخبرية

الامتحان النهائي - أجهزة ومعدات طبية

الزمن: ساعتان فقط, التاريخ: 28/5/2018

الاسم:

This exam consists of 5 questions over 9 pages امتحان يحتوى على 5 اسئلة فى 9 صفحات

1- choose the correct answer (20 points)

1. In which of the following ways, absorption is related to transmittance?
 - a. Absorption is the negative logarithm of transmittance
 - b. Absorption is the logarithm of transmittance
 - c. Absorption is the reciprocal مقلوب of transmittance
 - d. Absorption is a multiple مضاعفات of transmittance
2. The kind of electron microscope which is used to study internal structure of cells is
 - a. scanning electron microscope
 - b. transmission electron microscope
 - c. light microscope
 - d. compound microscope
- 3- Platelet clumps would most likely interfere with other automated parameter
 - a. hemoglobin determination
 - b. red blood cells count (RBCs)
 - c. white blood cells count (WBC)
 - d. hematocrit levels
- 4- Which of the microscopes below form images in visible light?
 - a. bright-field
 - b. dark field
 - c. fluorescence
 - d. B, and C

- 5- Which of the following types of radiation will cause the bonds of a molecule to vibrate?
- a. infrared
 - b. ultraviolet
 - c. fluorescence
 - d. microwaves
- 6- Resolving power of light microscope is
- a. 0.5 millimeter
 - b. 0.2 micrometer
 - c. 2.5 nanometer
 - d. 1.0 nanometer
- 7- Which molecular electron transition requires the most energy?
- a. π to π^*
 - b. n to π^*
 - c. σ to σ^*
 - d. n to σ^*
- 8- In the electrical impedance cell counter, the size of the electrical pulse is proportional to the:
- a. Weight of the cell
 - b. size of the aperture used for counting the cells
 - c. volume of electrical fluid forced through the aperture
 - d- size of the cell
- 9- A scanning electron microscope uses _____ to produce an image.
- a. Negatively charged particles
 - b. Positive charged particles
 - c. Neutral particles
 - d. Atoms

10- the emission radiation in fluorometry is always:

- a. Equal to excitation radiation
- b. longer wavelength than the excitation radiation
- c. shorter wavelength than the excitation radiation
- d. More energetic than the excitation radiation

11- why are thin sections of specimens necessary in transmission electron microscope (TEM)

- a. Electrons are negatively charged
- b. Electrons have a wave nature
- c. Electrons have a poor penetrating power
- d. Electrons have no mass

12- Which of the following objectives would give you the best resolution of small objects?

- a. 10x air, N.A. 0.25
- b. 40x air, N.A. 0.65
- c. 64x oil, N.A. 1.25
- d. 100x oil, N.A. 1.4

13- Basically, what is the function of an absorption spectrum?

- a. It is a graph of a chemical relating the absorbance to concentration
- b. It converts light energy into electrical energy
- c. It is a graph of a chemical relating the absorbance to transmittance
- d. It is the amount of radiation retained by a sample

14- It is widely used to separate and purify biological particles in a liquid medium under applied centrifugal force.

- a. Microscope
- b. Centrifugation
- c. pH meter
- d. spectrophotometer

- 15- In molecular fluorescence spectroscopy, why is the fluorescence usually collected at 90° from the path of the excitation light?
- a. Because the sample cells are usually square.
 - b. To rotate the polarization of the fluorescence
 - c. To make it easier to prevent excitation light from reaching the detector.
 - d. To avoid optical rotation of the excitation light.
- 16- Which of the following is the effective concentration measured at the electrode?
- a. selectivity coefficient
 - b. ionic strength
 - c. concentration
 - d. activity
- 17- Hemoglobin measurements made with an electrical impedance type instrument use:
- a. the optical absorbance method
 - b. the electrical impedance method
 - b. counting red cells through the aperture
 - c. sorting the darker red cells in the dilution chamber
- 18- The most common ISE that response to hydrogen ion concentration in a solution
- a. spectrophotometry
 - b. pH meter
 - b. atomic emission spectroscopy
 - c. phototube

19- The main advantage of fluorescence over UV-Vis spectroscopy

- a. Its compatibility متوافق with separation techniques
- b. Its compatibility with most analytes
- c. Its sensitivity
- d. None of the above

20- The ability of an indicator (working) electrode to respond to a single species of ion and not any other is referred to as:

- a. accuracy
- b. precision
- c. sensitivity
- d. selectivity

2- Explain why (25 points)

1- fluorescence spectroscopy significantly more sensitive than electronic absorption spectroscopy?

2- a more common mistake is to assume that relative centrifugal force (RCF)= revolutions per minute (RPM) to describe the speed of a centrifuge

3- the fine adjustment knob should only be used for high power objective lens?

4- Red blood cells scatter light at forward low angle only

5- the salt bridge القنطرة الملحية allows charge to equilibrate between the two half-cells.

6- photon transducer cannot be used in the IR region

7- it is very important to select a source of as high radiant power as possible in fluorescence instruments

8- RBC aperture is narrower than the WBC aperture

9- in a spectrophotometer, quartz cuvette not glass or plastic cuvette, is used for monitoring at 280 nm or 220 nm?

10- Ultracentrifuge chamber must be refrigerated and evacuated

3- Fill in the blank spaces (10 points)

- 1) -----is the measurement of the force applied to a sample within a centrifuge
- 2) ----- is used to separate the excitation and emission light paths in a fluorescence microscope
- 3) ----- is a mathematical calculation of the light-gathering capabilities of a lens
- 4) ----- has the same characteristics as direct fluorescence except for the large increase in lifetime.
- 5) ----- is the smallest distance (d) at which two objects can be successfully distinguished
- 6) ----- can be defined as the distance between the excitation and emission wavelengths
- 7) ----- are molecules having unsaturated bonds or free nonbonding electrons that can absorb radiation of relatively low energy
- 8) ----- is used to count the white blood cells, red blood cells, and platelets as they pass through an aperture
- 9) ----- describes the ion selective electrode towards the target ion in the presence of other ions
- 10)----- is the ratio of the number of fluorescing molecules to the total number of excited molecules

- 3- in automated hematology analyzer the WBC count is directly measured by electrical impedance (3 points)

5- solve the following problems (4 points)

- 1- E. coli cells are to be pelleted in an SS-34 rotor (maximum radius of 10.7 cm) by centrifugation at 7000 rpm. What is the RCF (g force)?

- 2- an object is placed 35 cm in front of a converging lens with focal length of 20 cm. Calculate the image's position relative to the lens as well as the image's characteristics

With best wishes
Prof. Hazem M. Abu Shawish

التاريخ: 30-05-2018	الاختبار النهائي لمساق	الفصل الثاني: 2017-2018
الزمن: ساعتان	(الكيمياء الحيوية الطبية - MEDT2331)	محاضر المساق: د. إيد القوقا
عدد الأسئلة: 4		عدد الأوراق: 6
الرقم الجامعي:		اسم الطالب:

Question One:

42 Marks

1. All of the following are considered "weak" interactions in proteins, except : A. Hydrogen bonds. B. Hydrophobic interactions. C. Van der Waals forces. D. Peptide bonds.	2. Which of the following best represents the backbone arrangement of two peptide bonds? A. $\text{C}\alpha\text{—N—C}\alpha\text{—C—C}\alpha\text{—N—C}\alpha\text{—C}$. B. $\text{C}\alpha\text{—N—C—C—N—C}\alpha$. C. $\text{C—N—C}\alpha\text{—C}\alpha\text{—C—N}$. D. $\text{C}\alpha\text{—C—N—C}\alpha\text{—C—N}$.
3. Which vitamin is derived from cholesterol? A. A B. B12 C. D D. E	4. In competitive inhibition, an inhibitor: A. Binds at several different sites on an enzyme. B. Binds covalently to the enzyme. C. Binds reversibly at the active site. D. Lowers the characteristic V_{\max} of the enzyme.
5. Roughly how many amino acids are there in one turn of an α helix? A. 2.8 B. 3.6 C. 4.2 D. 10	6. Which among the following is both glucogenic and ketogenic? A. Isoleucine B. Leucine C. Lysine D. Histidine
7. D-Alanine and L-Alanine are known as: A. Anomers. B. Enantiomers. C. Epimers. D. Polymer.	8. Which of the following is an epimeric pair? A. D-Glucose and D-Galactose. B. D-Glucose and L-Glucose. C. D-Glucose and D-mannose. D. Both A and C.
9. Which of the following amino acids can form hydrogen bonds with their side (R) groups? A. Asparagine. B. Aspartic acid. C. Glutamine. D. All of these.	10. Which of the following amino acid contain an imidazolium moiety? A. Alanine. B. Valine. C. Cysteine. D. Histidine.
11. Protein fluorescence arises primarily from which residue? A. Arginine. B. Tryptophan. C. Tyrosine. D. Phenylalanine.	12. D-amino acid would interrupt an α helix made of L-amino acids. Another naturally occurring hindrance to the formation of an α helix is the presence of: A. A negatively charged Arg residue. B. A nonpolar residue near the carboxyl terminus. C. A positively charged Lys residue. D. A Pro residue.

<p>13. In the peptide chain, the alpha helix is stabilized by:</p> <p>A. Sulfur linkage. B. Amide group. C. Carboxyl group. D. Hydrogen bonding.</p>	<p>14. If $pK_1 = 2.34$ and $pK_2 = 9.60$, then the isoelectric point pI is:</p> <p>A. 5.87 B. 5.97 C. 3.67 D. 11.94</p>
<p>15. Which of the following is an imino acid?</p> <p>A. Alanine. B. Glycine. C. Proline. D. Serine.</p>	<p>16. When the pH of a solution of a weak acid, HA, is equal to the pK_a, the ratio of concentrations of the salt and the acid ($[A^-]/[HA]$) is which one of the following?</p> <p>A. 0 B. 1 C. 2 D. 3</p>
<p>17. Which one of the following is not among the six internationally accepted classes of enzymes?</p> <p>A. Hydrolases. B. Oxidoreductases. C. Polymerases. D. Transferases.</p>	<p>18. At physiologic pH (7.4), a hexapeptide—<u>DASEVR</u>—will contain a net charge of which one of the following?</p> <p>A. -2 B. -1 C. 0 D. +1</p>
<p>19. Which of the following is an essential amino acid?</p> <p>A. Tryptophan. B. Methionine. C. Lysine. D. All of these.</p>	<p>20. The kinetic effect of purely competitive inhibitor of an enzyme</p> <p>A. Increases apparent K_m without affecting V_{max}. B. Decreases apparent K_m without affecting V_{max}. C. Increases V_{max} without affecting apparent K_m. D. Decreases V_{max} without affecting apparent K_m.</p>
<p>21. A person with Type 1 diabetes ran out of her prescription insulin and has not been able to inject insulin for the past 3 days. An overproduction of which of the following could cause a metabolic acidosis?</p> <p>A. Hemoglobin. B. Ketone bodies. C. HCl. D. Bicarbonate.</p>	<p>22. The conversion of 1 mol of pyruvate to 3 mol of CO_2 via pyruvate dehydrogenase and the citric acid cycle also yields _____ mol of NADH, _____ mol of $FADH_2$, and _____ mol of ATP (or GTP).</p> <p>A. 2; 2; 2 B. 3; 1; 1 C. 4; 1; 1 D. 4; 2; 1</p>
<p>23. Which of the following is not an essential amino acid?</p> <p>A. Aspartic acid. B. Glutamic acid. C. Glycine.. D. All of these</p>	<p>24. The following amino acids are both glucogenic as well as ketogenic except</p> <p>A. Isoleucine. B. Leucine. C. Tyrosine. D. Phenylalanine.</p>

<p>25. Which of the following statements about Michaelis-Menten kinetics are correct?</p> <p>A. A high Michaelis constant (K_m) indicates a high affinity of an enzyme for its substrate.</p> <p>B. A low Michaelis constant (K_m) indicates a high affinity of an enzyme for its substrate.</p> <p>C. The Michaelis constant (K_m) of an enzyme increases when the enzyme concentration is increased.</p> <p>D. The Michaelis constant (K_m) of an enzyme is unchanged when the enzyme concentration is increased.</p>	<p>26. An allosteric enzyme influences the enzyme activity by</p> <p>A. Competing for the catalytic site with the substrate.</p> <p>B. Changing the specificity of the enzyme for the substrate.</p> <p>C. Changing the conformation of the enzyme by binding to a site other than catalytic site.</p> <p>D. Changing the nature of the products formed.</p>
<p>27. Substrate-level phosphorylation occurs in glycolysis in the reaction catalyzed by _____ and belongs to _____ class of enzymes.</p> <p>A. Phosphoglycerate kinase; transferase.</p> <p>B. Hexokinase; transferase.</p> <p>C. Phosphofructokinase; transferase.</p> <p>D. Glyceraldehyde-3-phosphate dehydrogenase; oxidoreductase.</p>	<p>28. Entry of acetyl-CoA into the citric acid cycle is decreased when:</p> <p>A. [AMP] is high.</p> <p>B. The ratio of [ATP]/[ADP] is low.</p> <p>C. The ratio of [ATP]/[ADP] is high.</p> <p>D. The ratio of [NAD⁺]/[NADH] is high.</p>
<p>29. Which of the following is not an intermediate of the citric acid cycle?</p> <p>A. Acetyl-CoA.</p> <p>B. Citrate</p> <p>C. Oxaloacetate.</p> <p>D. Succinyl-CoA.</p>	<p>30. All of the oxidative steps of the citric acid cycle are linked to the reduction of NAD⁺ except the reaction catalyzed by:</p> <p>A. Isocitrate dehydrogenase.</p> <p>B. Malate dehydrogenase.</p> <p>C. Succinate dehydrogenase.</p> <p>D. The alpha-ketoglutarate dehydrogenase complex.</p>
<p>31. Which of the below is not required for the oxidative decarboxylation of pyruvate to form acetyl-CoA?</p> <p>A. ATP.</p> <p>B. CoA-SH.</p> <p>C. FAD & NAD⁺.</p> <p>D. Lipoic acid.</p>	<p>32. Lineweaver – Burk double reciprocal plot is related to</p> <p>A. Substrate concentration.</p> <p>B. Enzyme activity.</p> <p>C. Temperature.</p> <p>D. Both A and B.</p>
<p>33. Dietary deficiency of thiamin inhibits the activity of the enzyme:</p> <p>A. Pyruvate kinase.</p> <p>B. Pyruvate dehydrogenase.</p> <p>C. Phosphofructokinase.</p> <p>D. Enolase.</p>	<p>34. A specific fructokinase present in liver has a very high affinity for its substrate because</p> <p>A. K_m for fructose is very high.</p> <p>B. K_m for fructose is very low.</p> <p>C. Activity is affected by fasting.</p> <p>D. Activity is affected by insulin.</p>
<p>35. All are allosteric effectors of pyruvate kinase except:</p> <p>A. Pyruvate.</p> <p>B. AMP or ATP.</p> <p>C. Acetyl-CoA.</p> <p>D. Fructose-1,6-bisphosphate.</p>	<p>36. The step that commits glucose to glycolysis is catalyzed by:</p> <p>A. Hexokinase.</p> <p>B. Phosphoglucosomerase.</p> <p>C. Phosphofructokinase-1 (PFK-1).</p> <p>D. Glucokinase.</p>

<p>37. All of the following enzymes of glycolysis are allosterically regulated EXCEPT:</p> <p>A. Phosphofructokinase-1. B. Glyceraldehyde-3-phosphate dehydrogenase. C. Hexokinase. D. Pyruvate kinase.</p>	<p>38. The activity of the glycolytic enzyme phosphofructokinase-1 is increased by which one of the following molecules?</p> <p>A. Fructose-1,6-bisphosphate. B. Fructose-6-phosphate. C. Fructose-2,6-bisphosphate. D. ATP.</p>
<p>39. Glyceraldehyde-3-phosphate dehydrogenase belongs to what class of enzymes?</p> <p>A. Oxidoreductases. B. Isomerases. C. Transferases. D. Hydrolases.</p>	<p>40. The coenzyme not involved in the formation of acetyl-CoA from pyruvate is</p> <p>A. TPP B. Biotin C. NAD D. FAD</p>
<p>41. Which of the following compounds cannot serve as the starting material for the synthesis of glucose via gluconeogenesis?</p> <p>A. Acetate. B. Glycerol. C. Lactate. D. Oxaloacetate or α-ketoglutarate.</p>	<p>42. Phosphofructokinase key enzyme in glycolysis is inhibited by</p> <p>A. Citrate and ATP. B. AMP. C. ADP. D. TMP.</p>

Question Two:

20 Marks

A. Match each term in the left column with the best descriptions in the right column. Use each item once. 5 points (5 pts)

- | | |
|----------------------------------|---|
| ___ 1. Supersecondary structures | A. Amphoteric compound that can behave either as an acid, or a base. |
| ___ 2. Gluconeogenesis | B. Aggregates of α -helical and β -sheet structures. |
| ___ 3. Mutarotation | C. Linear amino acid sequence. |
| ___ 4. Tertiary structure | D. Stereoisomers that are not mirror images of one another and are non-superimposable on one another. |
| ___ 5. Epimers | E. A metabolic pathway that results in the generation of glucose from non-carbohydrate precursors. |
| ___ 6. Isoelectric point | F. Interconversion of α - and β - anomers. |
| ___ 7. Quaternary structure | G. A stereoisomer that differs in configuration at a single carbon atom. |
| ___ 8. Primary structure | H. The pH at which a protein has no net electrical charge or is electrically neutral. |
| ___ 9. Ampholyte | I. Association of multiple protein subunits. |
| ___ 10. Diastereomers | J. The overall three-dimensional structure of a polypeptide. |

B. List the five major groupings of amino acids? Then, what are the characteristic features of peptide bond? (5 pts)

C. Write short notes on the followings: (5 pts)

1. Lectin:
2. Amyloid disease & Prions:
3. Ketone bodies:
4. Diabetes mellitus Type I & Type II:
5. Phenylketonuria:

Question Three:

18 Marks

A. Explain the biochemical basis of the human metabolic disorder called lactose intolerance. (6pts)

B. List the six major classes of enzymes and explain how the enzymes catalyze the reaction? (6 pts)

C. What are the factors affecting enzyme activity? How enzymatic activity can be regulated? (6 pts)

Question Four:**20 Marks**

- A. Which of the enzymes represents a major regulation point in glycolysis? Which catalyzes a reaction in which ATP is produced? Which catalyzes a reaction in which NADH is produced? (4 pts)
- B. What is the cost (in ATP equivalents) of transforming glucose to pyruvate via glycolysis and back again to glucose via gluconeogenesis? (4pts)
- C. Mammalian liver can carry out gluconeogenesis using oxaloacetate as the starting material. Would the operation of the citric acid cycle be affected by extensive use of oxaloacetate for gluconeogenesis? Explain your answer. (4 pts)
- D. Citric Acid cycle is amphibolic. Explain this statement and give examples (4 pts)
- E. What are the biological functions of the pentose phosphate pathway? (4 pts)

End of Questions-Good Luck



Time: 2 hrs.

Name: Student number:

Multiple Choice

Identify the choice that best completes the statement or answers the question.

45 points

1. In nucleic acid hybridization assays, stringent washes are carried out to favor perfectly matched duplexes only. Which, of the following changes would be consistent with that aim?
 - a. An increase in temperature.
 - b. An increase in salt concentration.
 - c. An increase in the concentration of a polar molecule, such as urea or formamide.
 - d. Both a and c
2. A molecular biologist wants to separate and analyze a mixture of nucleic acids that are about 100,000 bp in size. Which of the following methods will yield the best results?
 - a. Capillary electrophoresis
 - b. Pulse field gel electrophoresis
 - c. Polyacrylamide gel electrophoresis
 - d. Traditional agarose gel electrophoresis
3. A DNA sequence with high GC content is more likely to have what property that interferes with PCR amplification?
 - a. Tendency to degrade
 - b. Enzyme inactivation
 - c. Lower T_m
 - d. Secondary structure
4. Which of the following is the most likely source of PCR contamination?
 - a. Unfiltered dust particles
 - b. Environmental fungi
 - c. Eyelashes
 - d. PCR products from a previous reaction
5. A northern blot allows you to do which of the following?
 - a. Analyze a specific region of DNA in a complex background
 - b. Measure gene expression
 - c. Investigate DNA binding proteins
 - d. Determine antigen/antibody interactions
6. Which of the following bind(s) specifically to a sequence of interest, thus facilitating the analysis of that sequence?
 - a. Restriction enzymes
 - b. Probes
 - c. Hybridomas
 - d. Digoxigenin
7. DNA replication proceeds with the new daughter strand synthesized in the following orientation:
 - a. 5' to 3'
 - b. 3' to 5'
 - c. The daughter strand is not synthesized in any order
 - d. Either 5' to 3' or 3' to 5'
8. HIV genotyping is performed for which of the following reasons?
 - a. Monitor development of antiretroviral drug resistance
 - b. Confirm HIV infection
 - c. Quantify amount of HIV in the patient
 - d. Determine source of HIV

9. **The specificity of western blots depends on what interaction?**
 - a. DNA/RNA complementarity
 - b. RNA/RNA complementarity
 - c. DNA antigens
 - d. Antigen/antibody recognition
10. **Which of the following is a genotypic method for typing organisms?**
 - a. Antibigram patterns
 - b. Pulsed field gel electrophoresis
 - c. Serotyping
 - d. Bacteriophage typing
11. **What type of mutations usually occur in tumor suppressor genes in cancer cells?**
 - a. of function
 - b. Loss of function
 - c. Activating
 - d. Amplifications
12. **Which of the following translocations can be used to monitor treatment for chronic myelogenous leukemia?**
 - a. t(9;22)
 - b. t(11;14)
 - c. t(8;14)
 - d. t(9;11)
13. **The melting temperature of nucleic acid is the temperature when:**
 - a. All of the double-stranded DNA is single-stranded
 - b. Half of the double-stranded DNA is single-stranded
 - c. A quarter of the double-stranded DNA is single-stranded
 - d. All of the single-stranded DNA is double-stranded
14. **Which of the following PCR controls ensures that the enzyme is active, the buffer is optimal, and the primers are priming the correct target sequence and must have a PCR product detected in order to be valid?**
 - a. Positive control
 - b. Negative template control
 - c. Contamination control
 - d. Amplification control
15. **A patient with a family history of breast cancer wants to know her risk of having breast cancer. Which of the following genes should be analyzed in this patient?**
 - a. BRCA1
 - b. Von Hippel-Lindau
 - c. N-myc
 - d. K-ras
16. **Which of the following methods is best suited for qualitative analysis of DNA, such as mutational analysis, where many samples are compared simultaneously?**
 - a. Dot Blot
 - b. Traditional southern blot
 - c. Western blot
 - d. Northern blot
17. **Which of the following controls defines the lower limit of reproducible and accurate detection of a molecular target?**
 - a. Positive
 - b. Negative
 - c. Sensitivity
 - d. Amplification
18. **A PCR reaction that uses more than one primer pair is called:**
 - a. Long-range PCR
 - b. Multiplex PCR
 - c. Signal amplification
 - d. Quantitative PCR

19. **How do gene expression arrays differ from comparative genome hybridization (CGH) arrays?**
 - a. CGH arrays detect gain or loss of DNA regions; gene expression arrays detect changes in gene expression
 - b. CGH arrays can interrogate hundreds of genes; while genes expression arrays test thousands
 - c. CGH arrays are simpler to perform than gene expression arrays
 - d. arrays require co-hybridization with comparative reference nucleic acid, while gene expression arrays do not
20. **Which of the following is the correct order of steps when performing a Southern blot after isolation of the DNA?**
 - a. Probe hybridization, restriction enzyme digestion, denaturation, electrophoresis
 - b. Denaturation, electrophoresis, probe hybridization, restriction enzyme digestion
 - c. Restriction enzyme digestion, electrophoresis, denaturation, probe hybridization
 - d. Electrophoresis, restriction enzyme digestion, probe hybridization, denaturation
21. **In the Sanger sequencing method, which of the following when incorporated into the growing strand are used to determine the identity of the base at a particular position in a piece of DNA?**
 - a. Ribonucleotides
 - b. deoxyribonucleotides
 - c. dideoxyribonucleotides
 - d. amino acids
22. **A quantitative method was performed 100 times, and results from 99 of the 100 runs were in agreement with each other. This method has 99%:**
 - a. Precision
 - b. Specificity
 - c. Sensitivity
 - d. Accuracy
23. **Which of the following polymorphisms are tandem repeats of 10-50bp?**
 - a. Restriction fragment length polymorphisms
 - b. Short tandem repeats
 - c. Variable number tandem repeats
 - d. Single nucleotide polymorphisms
24. **What is a microvariant?**
 - a. An STR allele missing base pairs in the repeat unit
 - b. Any mini-STR allele
 - c. A viral genome integrated into host DNA
 - d. A DNA region with many HaeIII sites
25. **DNA found at the crime scene was determined to have one peak at 212 bp at the amelogenin locus. The source of this DNA is which of the following?**
 - a. Female
 - b. Male
 - c. Impossible to tell from one locus
 - d. This locus does not discriminate between males and females.
26. **A patient is tested to determine the number of CGG repeats in the FMR1 gene by Southern blot. The patient is found to have a band that runs above the normal control band. Which of the following is the correct interpretation of these results?**
 - a. The patient is normal.
 - b. The patient has Huntington's disease.
 - c. The patient has Tay-Sachs disease.
 - d. The patient has full fragile X mutation.
27. **Which end of the sequenced DNA is found at the bottom of a sequencing gel?**
 - a. 5'
 - b. 3'
 - c. 2'
 - d. 1'
28. **A pyrosequencer detects visible light, making it which type of instrument?**
 - a. Luminometer
 - b. UV spectrotometer
 - c. Mass spectrometer
 - d. Fluorometer

29. A woman has been sexually attacked by an unknown man. Which of the following laboratory procedures can be used to more accurately analyze residual DNA left by the man in an effort to identify him?
- RFLP
 - STR
 - Y-STR
 - VNTR
31. Which of the following is true of restriction enzymes? Please select all that apply.
- Restriction enzymes are exonucleases.
 - Restriction enzymes are endonucleases.
 - Restriction enzymes always cut to leave DNA 'sticky' ends.
 - Restriction enzymes are part of the defence system of human cells against attack by viruses.
33. What was the great advantage to molecular analysis offered by Southern blot?
- Ability to analyze specific regions of DNA without cloning them
 - A rapid method to eliminate DNA contaminants
 - A more efficient buffer system
 - Ability to analyze nanogram amounts of DNA
35. Microarray analysis has allowed scientists to view what phenomenon?
- The genome sequence in a cell
 - The cDNA of a cell
 - The RFLPs of a cell
 - The expression of specific genes in a cell
37. The field that is concerned with collection and analysis of environmental, microbiological, and clinical data of an infectious disease is known as ____.
- Molecular epidemiology
 - Epidemiology
 - Endemiology
 - Pandemiology
30. An ASO (allele specific oligonucleotide) is
- A short DNA probe that will specifically hybridize to either the normal gene sequence or to a particular mutant sequence
 - Used to detect specific mutations by amplification of known disease genes
 - Used for quantitation of target RNA sequence
 - Technique for tracking an unknown mutant gene within a family
32. Dideoxynucleoside triphosphates (ddNTPs) are used in sequencing DNA because:
- ddNTPs are fluorescent.
 - ddNTPs are incorporated very efficiently into DNA by DNA polymerase.
 - ddNTPs cannot be incorporated into DNA by DNA polymerase.
 - ddNTPs prevent further DNA synthesis once they are incorporated into the DNA sequence.
34. In the Sanger method of DNA sequencing, what causes the termination of chain elongation?
- The incorporation of a deoxynucleotide
 - The incorporation of a dideoxynucleotide
 - Denaturation of the double-stranded test fragments
 - When the DNA polymerase encounters a stop codon
36. What method would you use for sequencing the whole genome of a patient?
- Sanger sequencing
 - Next generation sequencing
 - Microarray sequencing
 - Gilbert sequencing
38. Which of the following genotyping techniques does not require any specific knowledge of the DNA sequence of the target organism?
- RAPD.
 - PCR amplification of interspersed repetitive elements.
 - PCR-RFLP
 - Sequencing

39. Cytochrome P-450s ____.
- Are localized to the endoplasmic reticulum.
 - Vary from one person to another.
 - Can serve as a good example for personalized medicine
 - All of the above
40. The initial identification of the HLA alleles of a specimen through protein or DNA-based methods is known as ____.
- Screening.
 - Crossmatching.
 - Typing.
 - Resolution
41. Which of the following statements about forensic analysis of DNA is correct?
- A DNA profile using short tandem repeats is unique to an individual.
 - Forensic analysis makes use of SNPs in coding sequences to distinguish between individuals.
 - Microarray is used for DNA profiling (DNA fingerprinting).
 - DNA fingerprinting cannot be used for paternity testing.
42. Why is the mitochondrial DNA (about 16.6 Kb) cut with *PvuII* before electrophoresis and Southern blot to detect a 2Kb deletion.
- The mitochondrial DNA is too large to be resolved with gel electrophoresis and has to be digested into smaller fragments.
 - Circular DNA is supercoiled and needs to be linearized in order to run in its true size.
 - Circular DNA in general cannot be separated by agarose gel and needs to be linearized before.
 - PvuII* cuts within the deleted region and can tell if it is present or deleted.
43. HLA-gene sequences differ from one individual to another
- The changes range from (SNP) to loss or gain of entire genes.
 - Concentrated in exons 2 and 3 of the class I genes and in exon 2 of the class II genes.
 - The maternal and paternal HLA antigens are expressed codominantly on cells.
 - all of the above
44. In accepted HLA nomenclature for identifying HLA alleles by DNA sequence information, the fourth specific allele of the HLA-A31 family would be noted as which of the following?
- HLA-A*31:04
 - HLA-A*04:31
 - HLA-A*31-04
 - HLA-A*04:31
45. The most definitive way to analyze DNA at the nucleotide sequence level is ____.
- SSP-PCR
 - SBT
 - SSOPH
 - RFLP

Answer the questions**15 points**

1. Data collected from 4 different PCR experiments are represented in the following table. Carefully study the quality controls and decide if the experiment is valid? If not, state why? And what can be done to correct the experiment?

	sample	Experiment 1	Experiment 2	Experiment 3	Experiment 4
1.	Extraction Positive template control	+	+	+	-
2.	Extraction Negative template control	-	+	+	-
3.	Amplification control	+	+	+	+
4.	Reagent blank	-	-	+	-
5.	Unknown	+	+	+	-

	Do you accept the result of each experiment?	If you don't accept the result say why?	If you don't accept the result, what should be done to correct the problem?
Experiment 1			
Experiment 2			
Experiment 3			
Experiment 4			

2. An ancient bone fragment was found and said to belong to an ancestor of a famous family. Living members of the family donated DNA for confirmation of the relationship.
- a. What type of analysis would likely be used for this test?

.....

.....

- b. Why?

.....

.....

.....

1. A husband volunteers to be the donor for his wife's organ transplant. In pre-transplantation testing, the woman's serum was mixed in vitro with lymphocytes from her husband. After a few hours, complement and Trypan blue were added to the culture well. The cells were observed under the microscope and determined to be viable.

- a. Can the husband donate his organ to the wife?

.....

.....

- b. Why?

.....

.....

.....

END

Dr. Basim Ayesh

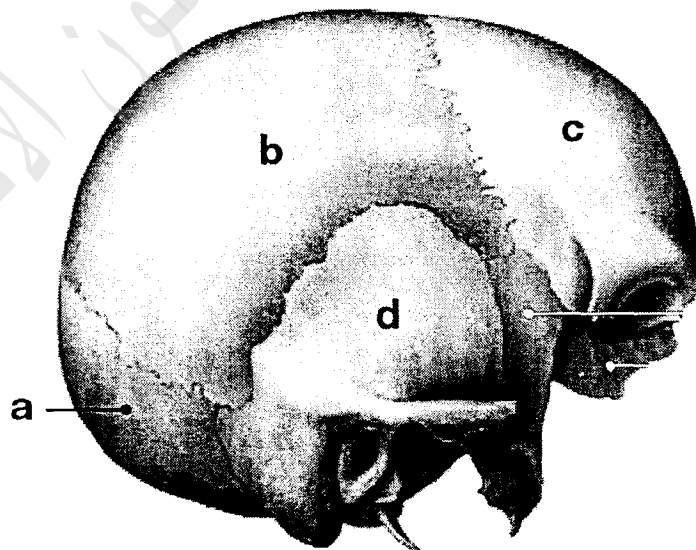


اسم الطالب/ة	اسم المساق	تشريح ووظائف أعضاء
الرقم الجامعي	رقم المساق	MEDT 1303
الشعبة	مدة الامتحان	ساعتان
مدرسو المساق	وقت الامتحان	11:00 - 13:00
عدد الأسئلة	تاريخ الامتحان	31/05/2018
4	عدد الصفحات	6

Question one / Fill in the spaces.

2marks each

- The protective membranes called meninges cover the brain and spinal cord
A.----- B.----- C.-----
- The autonomic nervous system composed of:
A.----- B.-----
- The functions of the skeletal system are:
A.----- B.-----
C.----- D.-----
- Write down of the structures below:
A.----- B.-----
C.----- D.-----



Cranial bones

- The adrenal (suprarenal) glands consists of two distinct entities
A.----- B.-----

6. The posterior pituitary gland secretes two hormones:

A.----- B. -----

7. The main neurotransmitters are:

A.-----B.-----C.-----

8. The three parts of the brain stem are:

A.-----B.-----C.-----

9. The points of attachment of each muscle are its _____ and _____

10. Skin has three main parts:

A.-----B.-----C.-----

Question two / True and False Statements.

One mark each:

Write all of the T & F 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

1. The fact that axons in the brain and spinal cord have no neurilemma is clinically significant because it plays an essential part in the regeneration of cut and injured axons.

True false

2. ALL Hormones are extremely potent but they need high concentration to be effective. **True false**

3. Prolactin initiates and maintains milk secretion from breasts. **True false**

4. The thyroid hormones increase the rate of metabolism, , and oxygen consumption in most body tissues. **True false**

5. The parathyroid glands, usually five in number, are embedded in the dorsal surface of the thyroid gland. **True false**

6. A myelinated nerve fiber conducts impulses more slowly than an unmyelinated fiber of the same size. **True false**

7. Myofibrils consist of two major kinds of protein fibers: actins, and myosins.

True false

8. Contraction of skeletal muscle requires adenosine diphosphate (ADP). **True false**

9. Compared with anaerobic respiration, aerobic respiration is much more efficient. **True false**
10. Ribosomes are site of ATP synthesis. **True false**
11. Blood tissue is a mixed connective tissue. **True Or false**
12. Serous membrane lines the cavities of the freely movable joints. **True false**
13. Osteoclasts are multinuclear giant cell found where bone is resorbed . **True false**
14. The Anterior (frontal) fontanel closes 3 to 6 months after birth. **True false**
15. Coronal plane divides the body into upper and lower body section. **True false**
16. Lysosomes contain powerful digestive enzymes capable of breaking down many kinds of molecules. **True false**
17. Normal human body cells usually divide at uncontrolled rate. **True false**
18. Keratinized stratified squamous epithelium covers the mouth, tongue and vagina. **True false**
19. Adipose tissue is a form of connective tissue proper specialized for fat storage. **True false**
20. Light enters the eye through the pupil and is refracted or bent so that it is focused on the retina. **True false**

Question three / Cross Matching Question

One mark each:

- | | |
|-----------------|---|
| A. Sense organs | () eye ,ear and tongue |
| B. Adrenal | () secretes insulin and glucagon |
| C. Cell | () secretes adrenalin and noradrenalin |
| D. Transmitters | () Mitochondria, Golgi and Ribosome |
| E. Pancreas | () Acetylcholine, Adrenalin and Noradrenalin |

Question four/ Multiple Choice Questions.**One mark each:****Write all of the MCQ answers in the following table.**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

1. Effects produced by the parasympathetic branch of the autonomic nervous system include

- A. dilation of the pupils.
- B. increased secretion by digestive glands.
- C. dilation of respiratory passages.
- D. increased heart rate.
- E. increased breakdown of glycogen by the liver

2. The most important structural elements of the cytoskeleton are:

- A. Microfilaments
- B. Vacuoles
- C. Ribosome
- D. Asters
- E. Microtubules

3. The main function of the skeletal system is:

- A. Protection
- B. Storage of minerals
- C. Support
- D. Producing motion
- E. All of the above

4. The major bone at the posterior aspect of the base of the skull is: -

- A. Sphenoid
- B. Temporal
- C. Lacrimal
- D. Occipital
- E. Zygomatic

5. The autonomic division of the nervous system directs

- A. voluntary motor activity.
- B. conscious control of skeletal muscles.
- C. unconscious control of skeletal muscles.
- D. processes that maintain homeostasis.
- E. sensory input from the skin.

6. FSH production in males supports

- A. the maturation of sperm by stimulating nurse cells.
- B. the development of muscles and strength.
- C. the production of male sex hormones.
- D. an increased desire for sexual activity.
- E. None of the above.

7. The division of the autonomic nervous system that prepares the body for activity and stress is the _____ division.

- A. somatomotor
- B. sympathetic
- C. parasympathetic
- D. craniosacral
- E. intramural

8. The type of contraction in which the tension rises, but the load does not move, is

- A. an isometric contraction.
- B. a wave summation.
- C. a twitch.
- D. an isotonic contraction.
- E. None of the above.

9. The _____ contains vesicles filled with acetylcholine.

- A. motor end plate
- B. neuromuscular junction
- C. synaptic cleft
- D. synaptic terminal
- E. transverse tubule

10. In the CNS, a neuron typically receives information from other neurons at its

- A. axon.
- B. Nissl bodies.
- C. dendrites.
- D. nucleus.
- E. None of the above.

11. Which of the following is the site of cerebrospinal fluid production?

- A. dural sinus
- B. choroid plexus
- C. falx cerebri
- D. tentorium cerebelli
- E. insula

12.The muscles of facial expression are innervated by cranial nerve

- A. .II
- B.V.
- C.IV.
- D. VI.
- E. VII

13.The adult spinal cord extends only to

- A. the sacrum.
- B.the third or fourth lumbar vertebra.
- C.the last thoracic vertebra
- D. the first or second lumbar vertebra.
- E.. the coccyx.

14.Adrenocorticotrophic hormone (ACTH) stimulates the release of

- A. thyroid hormones by the hypothalamus.
- B. gonadotropins by the adrenal glands.
- C. steroid hormones by the adrenal glands.
- D. growth hormones by the hypothalamus.
- E. None of the above.

15.A cell's hormonal sensitivities are determined by the

- A. presence or absence of appropriate receptors.
- B. chemical nature of the hormone.
- C. quantity of circulating hormone.
- D. shape of the hormone molecules.
- E. thickness of its plasma membrane.

GOOD LUCK

AL-AQSA UNIVERSITY		جامعة الأقصى 2017-2018
Medical Laboratory Sciences		كلية العلوم - قسم العلوم الطبية المخبرية
اسم محاضري المساق: د. نبيل العيلة أ. ناهض عبداللطيف		استم المتناقي: علم الأحياء الدقيقة الغام MEDT1302
مدة الامتحان: ساعتين	الامتحان النهائي للفصل الدراسي الثاني (2017-2018)	اسم الطالب/ة:

Write all of the answers in the following table.

MCQ	MCQ	Matching
1	31	56
2	32	57
3	33	58
4	34	59
5	35	60
6	36	61
7	37	62
8	38	63
9	39	64
10	40	65
11	✓ or X	
12	41	
13	42	
14	43	
15	44	
16	45	
17	46	
18	47	
19	48	
20	49	
21	50	
22	51	
23	52	
24	53	
25	54	
26	55	
27		
28		
29		
30		

AL-AQSA UNIVERSITY		جامعة الأقصى
Medical Laboratory Sciences		كلية العلوم - قسم العلوم الطبية المخبرية
اسم محاضري المساق: د. نبيل العيلة أ. ناهض عبداللطيف		اسم المساق: علم الأحياء الدقيقة العام MEDT1302
مدة الامتحان: ساعتين	الامتحان النهائي للفصل الدراسي الثاني (2017-2018)	اسم الطالب/ة:

I- Choose the best answer (40 Marks):

1. Enterotoxin responsible for food poisoning is secreted by:

- A. Enterococci
- B. Corynebacterium
- C. Enterobacteriaceae
- D. Staphylococci
- E. Mycobacterium

2. Which of the following can provide naturally acquired passive immunity for the new born:

- A. IgA
- B. IgG
- C. IgE
- D. IgM
- E. IgD

3. Nalidixic acid activity is due to:

- A. The inhibition of DNA synthesis
- B. Inhibition of protein synthesis
- C. The inhibition of cell wall synthesis
- D. Both b and c
- E. Antifolate antagonist

4. All of the following are selective media except:

- A. XLD
- B. Salmonella shigella agar
- C. Selenite F broth
- D. Loeffler's serum slope
- E. Hecktoen enteric agar

5. The mode of action of quinolones (Ciprofloxacin) on growing bacteria is thought to be

- A. Inhibition of reverse transcriptase
- B. Inactivation of penicillin-binding protein
- C. Inhibition of β -lactamase
- D. Prevention of the cross-linking of glycine
- E. Inhibition of DNA gyrase

6- The most resistant microbe for sterilization is:

- A. Bacterial Spores
- B. Non-enveloped viruses
- C. Fungi
- D. Protozoan Cysts
- E. TB organisms

7. For sterilization of heat sensitive solution, we use:

- A. pasteurization
- B. membrane filtration
- C. autoclave
- D. dry heat
- E. none of the above

8. In this phase : cell division stops due to depletion of nutrients & accumulation of toxic products:

- A. Phase of Decline.
- B. Stationary phase.
- C. Lag phase.
- D. Log OR Exponential phase
- E. None of above.

9. Which of the following antibiotics is mismatched?

- A. Aminoglycosides ----- protein synthesis inhibitor
- B. Penicillin-----cell wall synthesis inhibitor
- C. Sulfonamides-----Folate antagonist
- D. Cephalosporins ----- protein synthesis inhibitor
- E. Bacitracin-----cell wall synthesis inhibitor

10. Antibiotics stains of teeth; retardation of bone growth and not used in children and during pregnancy:

- A. Erythromycin
- B. Ciprofloxacin
- C. Rifampicin
- D. Tetracyclines
- E. Vancomycin

11. Genetic recombination in which a DNA fragment from a dead, degraded bacterium enters a competent recipient bacterium?

- A. Conjugation.
- B. Transduction.
- C. Transformation.
- D. All of these.
- E. None of these.

12. The antibacterial action of penicillin is due to its effect on:

- A. Cell membrane permeability
- B. Cell wall synthesis
- C. DNA synthesis
- D. Protein synthesis
- E. All of above

13. All of the following are considered spirochates except:

- A. Borrelia
- B. Treponema
- C. Leptospira
- D. Spirillum
- E. Chlamydia

14. All of the following are chemical components of bacterial cell walls EXCEPT:

- A. cellulose
- B. peptidoglycan
- C. lipopolysaccharide
- D. peptide chains
- E. n-acetyl muramic acid (NAM)

15. B cells mature in the..... while T cells mature in the

- A. Thymus/ Bone marrow (bursa of Fabricius in birds)
- B. Spleen/Thymus
- C. Bone marrow (bursa of Fabricius in birds) /Thymus
- D. Liver/Kidneys
- E. None of above

16. The ID50 is :

- A. a measure of pathogenicity.
- B. the dose that will cause an infection in 50 percent of the test population.
- C. the dose that will kill some of the test population.
- D. the dose that will cause an infection in some of the test population.
- E. the dose that will kill 50 percent of the test population

17. All of the following is correct about adaptive immunity except:

- A. respond slowly
- B. memory
- C. No or low specificity
- D. It include B cells and T cells.
- E. It include antibodies and cytokines

18. Which of the following statements is FALSE?

- A. leukocidins destroy white blood cells
- B. hemolysins lyse red blood cells
- C. coagulase destroys blood clots
- D. hyaluronidase breaks down substances between cells
- E. kinase destroys fibrin clots

19. Which method of gene transfer involves direct contact between the bacteria?

- A. Conjugation.
- B. Transduction.
- C. Transformation.
- D. All of these.
- E. None of these.

20. the Ig associated with allergies

- A. IgG
- B. IgM
- C. IgD
- D. IgE
- E. IgG

21. Media is commonly used for Fungal Isolation:

- A. Mueller Hinton Agar.
- B. Triple Sugar Iron Agar.
- C. Lysine Iron Agar.
- D. Sabouraud's Dextrose Agar
- E. Urea agar base

22. These organisms which are harmless in their normal site but capable of causing infection when transferred to an abnormal site

- A. Parasites
- B. Saprophytes
- C. Commensals
- D. Pathogen
- E. None of above

23. This gas is used in sterilization process is:

- A. Glutaric aldehyde
- B. formaldehyde
- C. Ethylene oxide
- D. Halogens chlorine
- E. Iodine

24. This method able to damages DNA and produces peroxides, which act as powerful oxidizing agents in cells.

- A. Incineration
- B. Moist heat
- C. Dry heat
- D. Ionizing radiation
- E. Filtration

25. What is the name of the process of bacterial DNA being transferred from one bacterium to another by a virus?

- A. Transformation
- B. Transduction
- C. Conjugation
- D. Vertical gene transfer
- E. Replication

26. Which antibacterial drug does not inhibit protein synthesis?

- A. Aminoglycosides
- B. Penicillin
- C. Chloramphenicol
- D. Tetracycline
- E. Erythromycin

27. A group of plasma proteins (20) that are activated in the presence of foreign substances:

- A. Complement
- B. Antibodies
- C. Interferon
- D. Chemotaxis
- E. C-reactive proteins

28. a smaller molecule that is not immunogenic until attached to proteins:

- A. Antigen
- B. Virus
- C. Hapten
- D. Peptide
- E. Antibody

29. may participate in cell replication by serving as a place of attachment for the bacterial chromosome:

- A. Mesosome.
- B. Plasmid.
- C. Nucleic acid.
- D. Ribosomes

30. All of the following are Enetrobacteriaceae except:

- A. E. coli
- B. Klebsiella pneumoniae
- C. Pseudomonas aeruginosa
- D. Salmonella typhi
- E. Shigella

31. All of the following are Gram positive bacilli except:

- A. *Bacillus cereus*
- B. *Listeria species*
- C. *Clostridium tetani*
- D. *Corynebacterium species*
- E. *Mycoplasma pneumoniae*

32. Hyaluronidase causes damage to which of the following?

- A. Connective Tissue
- B. Nails
- C. Collagen
- D. All of the above
- E. None of the above

33. A microbiologist detects clue cells from a vaginal swab of a patient. These cells are diagnostic of an infection associated with

- A. *Neisseria gonorrhoeae*
- B. *Trichomonas vaginalis*
- C. *Gardnerella vaginalis*
- D. *Staphylococcus aureus*
- E. *Chlamydia sp.*

34. In terms of a bacterium's optimal growth requirements, which group would you expect to be MOST likely pathogenic in humans?

- A. acidophiles
- B. psychrophiles
- C. extreme halophiles
- D. mesophiles
- E. thermophiles

35. Which of the following organism have an unusual cell wall, resulting in their inability to be Gram-stained?

- A. *Clostridium*
- B. *Proteus*
- C. *Mycoplasma*
- D. *Bacillus*
- E. *Mycobacterium tuberculosis*

36. Which of the following does not kill endospores?

- A. Autoclave
- B. Incineration
- C. Hot air oven
- D. Pasteurization

37. Endotoxin produced by gram negative bacteria is present in

- a. Peptidoglycan
- b. Lipopolysaccharide
- c. Teichoic acid
- d. Inner membrane

38. The greatest number of pathogens use what as a portal of entry?

- A. Skin
- B. Gastrointestinal tract
- C. Respiratory tract
- D. Urogenital tract
- E. Transplacental

39. Glassware are sterilized by

- A. Autoclaving
- B. Hot air over
- C. Incineration
- D. None of these

40. Beta-lactum antibiotics include:

- A. Penicillin
- B. Cephalosporin
- C. Carbapenem
- D. Aztreonam
- E. All of above

II- Write T for true statement and F for false statement (15 marks)?

- 41- () Interferon stimulate nearby cells to produce antiviral proteins that interfere with viral replication
- 42- () In the A-B toxin A part binds to receptor of host cell and B component inhibits protein synthesis and kills cell.
- 43- () Fermentation is complete oxidation of glucose or other carbohydrates in the absence of oxygen.
- 44- () Hfr strains of bacteria contain F factors that include some genes from the bacterial chromosome.
- 45- () Macrolide include erythromycin, azithromycin, clarithromycin and kanamycin.
- 46- () Transport media maintain the pathogen to commensal ratio and inhibit overgrowth of unwanted bacteria.
- 47- () Methicillin is considered a narrow spectrum, Beta lactamase sensitive antibiotic.
- 48- () In active humoral immunity maternal antibody crosses the placental barrier conferring temporary immunity to the baby
- 49- () Coliform bacilli like E.coli & other medically important bacteria doubles every 20 hours while Tubercle bacilli every 20 minutes.
- 50- () Chlamydia, Legionella and Rickettsia are obligate intracellular bacteria.
- 51- () Gene transfer by conjugation converts a strain that cannot act as a donor to a strain that can initiate conjugation.
- 52- () In generalized transduction, A DNA fragment is transferred from one bacterium to another by a lytic bacteriophage
- 53- () Koch made the active agent of anthrax and made a vaccine against it.
- 54- () Campylobacter jejuni are grow best at high content of O₂ and at 37°C .
- 55- () Improper application of the methods of sterilization and disinfection can lead to microbial resistance.

III- Match the following (10 marks)

	56	<i>Escherichia coli</i>	A	Gas gangrene
	57	<i>Pseudomonas aeruginosa</i>	B	trachoma, and infertility
	58	<i>Staphylococcus epidermidis</i>	C	Plaque
	59	<i>Shigella dysenteriae</i>	D	Neonatal infections
	60	<i>Helicobacter pylori</i>	E	Whooping cough
	61	<i>Gardnerella vaginalis</i>	F	cystic fibrosis
	62	<i>Chlamydia trachomatis</i>	G	typhoid fever
	63	<i>Yersinia pestis</i>	H	Prosthetic implant infections
	64	<i>Streptococcus agalactiae</i>	I	Bacillary dysentery
	65	<i>Clostridium perfringens</i>	J	cholera
			K	Urinary tract infection
			L	Bacterial vaginosis
			M	Peptic ulcer

IV- Answer three of the following questions (15 Marks):

1- What are the differences between exotoxins and endotoxins? (5 Marks)

Property	Exotoxins	Endotoxins

2- Explain in details the mechanism of action of antibiotics?

3- Explain the life cycle of bacteriophage (Lytic and Lysogenic cycle)

4- Write short note about Antibody Classes and their functions?

انتهت الأسئلة

مع تمنياتنا لكم بالنجاح والتوفيق



Al- Aqsa University - Gaza
Faculty of Medical Science
General Pathology

جامعة الأقصى
كلية العلوم الطبية المخبرية
علم الأمراض

الامتحان يحتوى على 6 صفحات
اسم الطالبة (ثلاثي) ----- التاريخ : 22 - 5 - 2018 مدة الامتحان : ساعتان
ممنوع الكتابة بالقلم الرصاص او القلم الاحمر
FINAL EXAM 2017/2018

QUESTION I MATCH

No	I	II	The answer
1-	Lymphatic edema	Shock	
2-	Localized edema	An active process .	
3-	Cartilages benign tumor	Metaplasia	
4-	Muscle benign tumor	Nephrotic syndrome	
5-	Substitution of one tissue type normally found at a site for another	Parasitic infection	
6-	Failure of the circulatory system to maintain adequate cellular perfusion	Chondroma	
7-	Hypermia	Hydrothorax	
8-	Congestion	Rhabdomyoma	
9-	Generalized Edema	Deep venous thrombosis	
10-	Fluid accumulation in pleural cavity in a pathologic amount	A passive process	

ملاحظة: توضع الاجابات في المربع المحدد لها في نهاية سؤال اختر

QUESTION II Please choose the correct answer :

1. Which ONE of the following is NOT a useful effect of acute inflammation?

- A. Dilution of toxins.
- B. Formation of fibrin.
- C. Phagocytosis.
- D. Swelling of tissues.

2. Which ONE of the following does NOT impair healing of a wound?

- A. Good vascular supply.
- B. Deficiency of vitamin C.
- C. Excess of adrenal glucocorticoid hormones.
- D. Tissue hypoxia.

3. Thromboembolism of small branches of pulmonary artery can cause:

- A. Pulmonocoronary reflex
- B. Lung infarction
- C. DIC-syndrome.
- D. Shock

4. The most often cause of infarction development:

- A. Venous congestion;
- B. Arterial thrombosis;
- C. Thrombosis of large veins;
- D. Microcirculatory bed embolism

5. Red infarction is usual for:

- A. Myocardium;
- B. Spleen;
- C. Lung;
- D. Kidney

6. What is main in DIC-syndrome development?

- A. Thrombocytopenia;
- B. Anemia;
- C. Insufficiency of fibrinogen synthesis;
- D. Increased intravascular blood coagulation

7. Call mesenchymal tumour:

- A. Adenoma;
- B. Angiosarcoma;
- C. Papilloma;
- D. Hepatoma

8. What is the favorite pathway of spreading in sarcomas?

- A. Lymphogenic;
- B. Hematogenic;
- C. Perineural;
- D. Contact.

9. Where are Red infarcts not typically seen:

- A. Intestines
- B. Liver
- C. Lungs
- D. Kidneys

10. Infarcts typical of arterial occlusion in solid organs such as the kidneys and heart are:

- A. Black
- B. Caseous
- C. White
- D. Red

11. What is the most common form of emboli seen in clinical practice ?

- A. Liquid emboli
- B. Fat emboli
- C. Gaseous emboli
- D. Thromboemboli

12 Generalized edema results from all the following EXCEPT:

- A. Systemic hypertension
- B. Congestive heart failure.
- C. Liver cirrhosis.
- D. Nephrotic syndrome

13. Which of the followings is the mechanism of edema in patients with congestive heart failure?

- A. Decreased plasma oncotic pressure.
- B. Endothelial damage.
- C. Increase hydrostatic pressure.
- D. Lymphatic obstruction.

14. What is the most common site of origin of thrombotic pulmonary emboli?

- A. Lumen of left ventricle.
- B. Deep leg veins.
- C. Lumen of right ventricle.
- D. Superficial leg veins.

15. Infarcts tend to be hemorrhagic when they occur in:

- A. Kidney.
- B. Lungs.
- C. Spleen.
- D. Heart.

16. The most common site of venous thrombosis is:

- A. Brain.
- B. Kidney.
- C. Legs.
- D. Liver.

17. Petechiae is best defined as:

- A. Subcutaneous hemorrhage measuring 1-2 cm.
- B. Subcutaneous edema in association with heart failure.
- C. Skin hemorrhages appearing as minute spots measuring 1-2 mm.
- D. Hemorrhage into the thoracic cavity.

18. Endothelial cell injury is the principal mechanism for production of thrombosis in case of:

- A. Thrombosis occurring in post-partum women.
- B. Thrombosis associated with pancreatic cancer.
- C. Thrombosis of atherosclerotic coronary arteries.
- D. Protein C deficiency.

19. Mural thrombi is the term used to define thrombi of:

- A. Thrombi of heart valve.
- B. Venous thrombi of the legs.
- C. Thrombi of ovarian venous plexus
- D. Thrombi occurring in the heart chambers.

20. What does the proliferation of neoplastic cells lead to?

- A. Neoplasia
- B. Tumors
- C. Atrophy
- D. Brain cancer

21. What is the term that means "new growth"?

- A. Anaplasia
- B. Metaplasia
- C. Neoplasia
- D. Hyperplasia

22. Correlation of both _____ and _____ data have lead to criteria for diagnosing tumors as either benign & malignant.

- A. Clinical, statistical
- B. Histologic, clinical
- C. Histologic, statistical
- D. Demographical, hitological

23. What kind of tumors have a limited growth potential and a good outcome?

- A. Malignant
- B. Hypertrophic
- C. Hypotrophic
- D. Benign

24. Which of the following is NOT a pathway in which malignant cells spread (metastasize)?

- A. Lymph
- B. Saliva
- C. Blood
- D. Cavities

25. What is an example of lymphatic metastasis?

- A. Renal cell carcinoma
- B. Adrenal adenoma
- C. Breast cancer
- D. Leiomyoma

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	X	X	X	X	X
										X	X	X	X	X

QUESTION III TRUE OR FALSE :

ملاحظة توضع الاجابات في المربع المحدد لها في نهاية سؤال الصح و الخطاء

1. Red infarcts are also typical of organs that have a dual blood supply such as the liver or lungs.
2. White infarcts are caused by Venous obstruction.
3. Malignant tumors are sharply demarcated and are often encapsulated in connective tissue.
4. Benign tumors compress the normal, surrounding tissue.
5. Malignant tumors invade the surrounding tissue by infiltration.
6. Is an adenocarcinoma of the colon considered benign?
7. Is a lipoma considered to be benign?
8. People who are obese are more likely to develop type 2 diabetes.
9. Prediabetes is considered an irreversible condition.
10. With type 1 diabetes, the body does not produce insulin.
11. When the body does not respond to the insulin it makes, this is called Type 1 diabetes
12. Gout is a form of arthritis.
13. Gout happens when uric acid crystals build up in a joint.
14. For many people, gout first appears in the thumb.
15. A painful joint that is swollen, red, and warm is one symptom of gout.
16. Women are more likely to develop gout than are men.
17. Human papillomavirus (HPV) infection is associated with Cervical and Anogenital cancer
18. 100mL of air embolism, is the least amount required to produce symptoms
19. Edema is a fluid accumulation in the body cavities in excessive amount.
20. Anasarca is a severe & generalized edema of the body with profound subcutaneous swelling.
21. Lung cancer more frequent in female .
22. Septic shock most commonly caused by gram -positive infection
23. Healing by second intention is more extensive loss of cells and tissue
24. Leukopenia is a feature of typhoid fever and some parasitic infections.
25. Acute inflammation is categorized into a late vascular and early cellular responses

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	X	X	X	X	X
										X	X	X	X	X

QUESTION IV SHORT ANSWER write about the followings

1. Define Hyperemia and Congestion

2 Describe about Hemorrhage

3 .Define and types of Shock

4 Describe about DIC

5. Enumerate the Types of carcinogenesis

6. Enumerate DNA oncogenic viruses

7. Enumerate Grading and staging of cancers

8. The differences between an exudate and a transudate :

9. Enumerate the chronic Complications of Diabetes

10. Causes of chronic inflammation

11. Pathogenesis of hyperuricemia

12. Enumerate the Clinical classification of edema

13 Virchow's triad

14. Pathophysiology of diabetes mellitus

15. Fates of a thrombus (Enumerate)

انتهت الاسئلة ارجو لكم التوفيق



التاريخ: 2018/6/2
الزمن: 2 ساعة
عدد الأسئلة:
الرقم الجامعي:

الفصل الثاني : 2018
محاضر المساق : د. معتصم سعيد صلاح
اسم الطالب /ة :

Part (1): Multiple Choice Questions

(20 points)

- Relative risk can be measured in which of the following studies
a. Cross-sectional b. Case-control c. Cohort d. Ecological
- Interventional randomized control trial include:
a. Simple mastectomy for patients with breast cancer
b. MMR vaccine to decrease the risk of mumps, measles and rubella
c. BCG vaccination for the prevention of tuberculosis
d. Physical exercise for decreasing the risk of diabetes mellitus type II
- The study design which is best able to prove causation of disease is
a. Cross-sectional b. Case-control c. Randomized controlled trial d. Cohort
- Examples related to the application of primary prevention include
a. Educating a hypertensive patient about healthy diet.
b. Educating young adult male about testicular self-examination
c. Educating college students about the danger of smoking
d. All of the above answers are correct
- Which from the following is true regarding selection of controls in a case-control study
a. Cases are selected on the basis of disease, not exposure
b. Choice of controls and cases should be influenced by exposure status
c. Cases are selected on the basis of exposure
d. Controls are selected on the basis of exposure
- Sensitivity of hepatitis B virus test can be well-defined by
a. Probability of the patient having hepatitis when hepatitis B virus test is positive
b. Probability of a negative hepatitis B virus test in people with hepatitis
c. Probability of a positive hepatitis B virus test in people with hepatitis
d. Probability of the patient not having hepatitis when hepatitis B virus test is negative
- In a Framingham study, a group of residents have been followed since the 1950s to identify the occurrence and risk factors for heart disease, this study is an example of which type of study?
a. Cross-sectional b. Case-control c. Cohort d. Experimental

8. When conducting a case-control study, the researcher links the factors with how many diseases?
- Single disease
 - Two diseases
 - Multiple diseases
 - All are correct
9. Before conducting a screening test for a disease, we should make sure that
- The natural history of a disease and costs of treatment are well known
 - A disease must have short lead time
 - A disease has an impact on morbidity, mortality and disability
 - Both a & c
10. Screening of workers who are working in asbestos factory, refereed as
- Mass screening
 - Targeting screening
 - Case finding
 - Opportunistic screening
11. Which from the following is/are true regarding case-control study
- Start with a group of people who are free of disease
 - Acts by looking forward from the possible cause to a disease
 - It is good for investigating the causes of rare diseases
 - All are correct
12. Temporal relation as a concept of considering causation is best known as
- The association between obesity and DM type II is consistent with other knowledge
 - Obesity as a factor should precede DM type II as an outcome
 - Removal of obesity lead to reduction of DM type II
 - The association between obesity and DM type II is shown in previous studies
13. Which from the following is considered a precipitating factor
- Loss of loved one and depression
 - Repeated exposure to Hib
 - Family history and DM type II
 - Exposure to asbestos and lung cancer
14. The study design which explores the relationship between the environmental factors and the disease is
- Case-control
 - Ecological
 - Cohort
 - Descriptive
15. The nurse conducted a health educational program for a patient with diabetes for the purpose of preventing diabetic foot. The nurse understands that this action is an example of
- Primordial
 - Primary
 - Secondary
 - Tertiary prevention
16. A study of cancer and steroid hormone was conducted, in which women with breast cancer are compared with group of women without breast cancer, they were asked about their prior use of oral contraceptives , is an example of which type of study?
- Cross-sectional
 - Case-control
 - Cohort
 - Experimental
17. Predisposing factor/s for gestational diabetes include
- Age
 - Family history
 - Race
 - All are correct

18. A study in which children are randomly assigned to receive either a newly formulated vaccine or the currently available vaccine, and are followed to monitor for side effects and effectiveness of each vaccine, is an example of which type of study?

- a. Clinical trial b. Case-control c. Cohort d. Observational

19. Which of the following is/are principles of early disease detection?

- a. The condition sought (search for) should be an important problem.
b. There should be an accepted treatment for patients
c. There should be a recognizable early symptomatic stage.
d. All of the following

20. All of the following are True regarding behavioral factors affecting participation in screening program Except?

- a. Threat of the disease
b. Cost of the test
c. Relevancy to the people
d. Expected actions

Part (2): Put (✓) in front of the true sentence and (×) in front of the false one (10 points)

1. A study with a small systematic error is said to have a high accuracy ()
2. Case finding during screening tests should be a continuing process ()
3. Analytical epidemiology used to test hypothesis ()
4. All levels of prevention are important and complementary. ()
5. Smoking with exposure to asbestos dust causing lung cancer higher than smoking alone ()
6. Tertiary prevention contributes most to the health of the whole population ()
7. Primary prevention activities include skin testing for the diagnosis of tuberculosis ()
8. The decline in death rates in 19th century in high-income countries was principally due to a decrease in deaths from infectious disease. ()
9. The screening test must be cheap, easy, valid and reliable ()
10. A Long lead time implies a rapidly progressing disease ()

Part (3): Read the following and answer the questions below (10 points)

A. What are the criteria for the screening test?

1.
2.
3.
4.
5.

B. Potential errors in epidemiological studies?

1.
2.
3.

C. Make the following comparison between case-control and cohort studies

Comparison	Case-control studies	Cohort studies
Exposures		
Outcomes		
Odd ratio		
Confounding		
Sample size		
Study time		
Relative risk		
Cost		

Part (4) : Discussion Questions

(10 points)

1. Read the following table about the examination of blood sugar and calculate the following

	Diabetic	Non	Total
Positive Test	400	1200	
Negative Test	120	6800	
Total			

A. Sensitivity

B. Specificity

C. Positive predictive value

D. Negative predictive value

انتهت الأسئلة
تمنيتي لكم بالتفوق

التاريخ: 23 / 5 / 2018م
الزمن : 2 ساعة
عدد الأسئلة : 5 أسئلة
الرقم الجامعي :

الاختبار النهائي لمساق
Parasitology
MEDT3309
علم الطفيليات

الفصل الثاني : 2017-2018
محاضر المساق: د. منصور اليازجي
أ. ناهض عبد اللطيف
عدد الأوراق : 8 صفحات
اسم الطالب/هـ :

❖ Write all of the answers in the following table.

MCQ				Match		T and F	
1		16		1		1	
2		17		2		2	
3		18		3		3	
4		19		4		4	
5		20		5		5	
6		21		6		6	
7		22		7		7	
8		23		8		8	
9		24		9		9	
10		25		10		10	
11		26		11		11	
12		27		12			
13		28		13			
14		29		14			
15		30					

درجات الطالب	
السؤال الاول	
السؤال الثاني	
السؤال الثالث	
السؤال الرابع	
السؤال الخامس	
المجموع	

Q 1. Choose the correct answer for each of the following sentences: (30 marks)

1. Plasmodium Falciparum characterized by presence of (in infected RBCs):

- A. Ziemann's stippling
- B. Schuffner's dots
- C. Maurer's clefts
- D. Basophilic stippling
- E. C & D

2.of Toxoplasma gondii develop only in definitive hosts, in the intestine of cats and other felines but not in human:

- A. Oocys
- B. Trophozoite
- C. Tissue cyst
- D. Tachyzoites

3. Definitive host of Toxoplasma gondii are :

- A. Mice
- B. Humans
- C. Cats
- D. Sheep
- E. All of above

4. All of these characteristic is present in helminthes Except :

- A. Many possess suckers or hooks for attachment
- B. Many have a primitive nervous system
- C. The excretory system is better developed
- D. Locomotion is generally by pseudopodia
- E. The mouth may be provided with teeth or cutting plates

5. Because this malarial asexual phase occurs in man, it is also called the:

- A. Invertebrate, extrinsic, or exogenous phase.
- B. Vertebrate, extrinsic, or exogenous phase.
- C. Vertebrate, intrinsic, or endogenous phase
- D. Invertebrate, extrinsic, or endogenous phase.

6. The larval forms of trematodes are:

- A. Miracidium
- B. Cercaria
- C. Metacercaria
- D. Sporocyst
- E. All of above

7. Its female is parthenogenic is:

- A. Ascaris
- B. Ancylostoma
- C. Trichinella
- D. Enterobius
- E. Strongyloides

8. Binucleate rings (stereo headphones appearance) are common in:

- A. *Plasmodium falciparum*
- B. *Plasmodium malariae*
- C. *Plasmodium vivax*
- D. *Plasmodium ovale*

9. Terminal spined eggs are seen in:

- A. *Schistosoma haematobium*
- B. *Schistosoma mansoni*
- C. *Schistosoma japonicum*
- D. *Clonorchis sinensis*

10. Larva found in muscle is:

- A. *Trichinella spiralis*
- B. *Ancylostoma duodenale*
- C. *Trichuris trichiura*
- D. *Enterobius vermicularis*

11. The hind end of proglottids in tapeworms are the:

- A. Head
- B. Neck
- C. Gravid
- D. Scolex

12. The products of schizogony in malaria , whether erythrocytic or exoerythrocytic, are called:

- A. Porozoites
- B. Trophozoites.
- C. Hypnozoites
- D. Merozoites

13. The ciliated stage aquatic embryo in *diphyllbothrium Latum* is:

- A. First stage larva (coracidium)
- B. Second stage larva (procercoid)
- C. Third stage larva (plerocercoid)
- D. Fourth stage larva (plerocercoid)

14. The most infected organ with *Echinococcus granulosus* in humans is:

- A. lung
- B. brain
- C. spleen
- D. liver
- E. bones

15. The smallest intestinal cestode that infects man.:

- A. *Taenia solium*
- B. *Hymenolepis Nana*
- C. *Taenia sagnata*
- D. *Echinococcus granulosus*

16. **Merozoites, appears as a rosette appearance in :**
- A. *Plasmodium falciparum*
 - B. *Plasmodium malariae*
 - C. *Plasmodium vivax*
 - D. *Plasmodium ovale*
17. **Laboratory diagnosis of *Hymenolepis Nana* by:**
- A. The finding the eggs in the urine of patients
 - B. The finding the eggs in the stool of patients
 - C. The finding the eggs in the liver of patients
 - D. The finding the eggs in the blood of patients
18. **The largest tape worm inhabiting the small intestine of man is:**
- A. *Taenia solium*
 - B. *Taenia saginata*
 - C. *Diphyllobothrium Latum*
 - D. *Ancylostoma*
19. **The alimentary canal, appears like an inverted Y in:**
- A. Flukes
 - B. Cestoda
 - C. Nematoda
 - D. Tapeworms
20. **River blindness is the name given to disease caused by:**
- A. *Loa loa*
 - B. *Onchocerca volvulus*
 - C. *Toxoplasma gondii*
 - D. *Ancylostoma*
 - E. *Strongyloides stercoralis*
21. **In all species, the female gametocyte is:**
- A. Macrogametocyte
 - B. Microgametocyte
 - C. Schizonts
 - D. Exflagellating female gametocytes
22. **1st stage larva, which is released from the eggs when hatched as soon as are laid:**
- A. Rhabditiiform larva
 - B. Filariform larva
 - C. Eggs
 - D. Adult worm
23. **Which parasite is live in the vesical and pelvic plexuses of veins?**
- A. *Schistosoma mansoni*
 - B. *Schistosoma haematobium*
 - C. *Schistosoma japonicum*
 - D. *Dracunculus medinensis*
 - E. Answers A & C

24. Second intermediate host is required for encystment in some trematodes. is:

- A. Freshwater molluscs or snails.
- B. Humans or animals
- C. Mammals
- D. Fish or crab

25. The best specimen for laboratory diagnosis of *Trichinella spiralis* is:

- A. Stool
- B. Urine
- C. Stool collected at night
- D. Muscle biopsy
- E. Lung biopsy

26. The usual portal entry for *Strongyloides stercoralis* is the:

- A. Intestinal tract
- B. Skin penetration
- C. Respiratory tract
- D. Answers A & B are correct
- E. All of the above

27. Casoni test is used to diagnose this parasite:

- A. *Enterobius vermicularis*
- B. *Trichinella Spiralis*
- C. *Strongyloides Stercoralis*
- D. *Trichuris Trichiura*
- E. *Echinococcus Granulosus*

28. Its egg is barrel-shaped with a projecting mucus plug at each pole containing an unsegmented ovum:

- A. *Enterobius vermicularis*
- B. *Trichinella Spiralis*
- C. *Strongyloides Stercoralis*
- D. *Trichuris Trichiura*
- E. *Echinococcus Granulosus*

29. It has a characteristic shape, being elongated ovoid, attenuated on one side, and convex on the other (planoconvex) and contains a tadpole-shaped coiled embryo:

- A. Egg of *Enterobius vermicularis*
- B. Egg of *Schistosoma Haematobium*
- C. Egg of *Strongyloides Stercoralis*
- D. Egg of *Trichuris Trichiura*
- E. Egg of *Hymenolepis Nana*

30. This species is responsible for almost all deaths caused by malaria.:

- A. *Plasmodium falciparum*
- B. *Plasmodium malariae*
- C. *Plasmodium vivax*
- D. *Plasmodium ovale*

Q 2. Put the No. from Colum A in the brackets in front of Colum B (Match)(14 Mark)

Colum A(Parasite)	Colum B (Disease)
1. (.....)Echinococcus Granulosus	A. Dracontiasis
2. (.....)Hymenolepis Nana	B. Onchocerca
3. (.....)Dracunculus Medinensis	C. Chronic strongyloidiasis
4. (.....)Enterobius vermicularis	D. Cysticercosis
5. (.....)Loa Loa	E. Elephantiasis
6. (.....)Onchocerca Volvulus	F. Endemic hematuria
7. (.....)Wuchereria bancrofti	G. Loiasis
8. (.....)Trichuris Trichiura	H. Benign Tertian Malaria
9. (.....)Trichinella Spiralis	I. Hydatid cyst
10.(.....)Taenia solium	J. Hymenolopiasis
11.(.....)Strongyloides Stercoralis	K. Pruritis ani
12.(.....)Schistosoma Mansoni	L. Trichinosis
13.(.....)Schistosoma Haematobium	M. Katayama fever
14.(.....)Plasmodium vivax	N. Whipworm infection

Q3- Write T for true statement and F for false statement ? (11 marks)

- () Female nematodes may produce eggs (viviparous) or larvae (oviparous).
- () Larva Migrans seen when human infection occurs with human species of nematodes.
- () The major source of human infection by Trichinella Spiralis was shown to be the consumption of inadequately cooked pork.
- () the egg of Strongyloides Stercoralis are excreted in feces and detected on stool examination.
- () Enterobiasis occurs mostly in children. It is more common in males than in females.
- () Geophagy means that the children can transmit eggs to their mouth through eating food by dirty fingers.
- () The female worm of Wuchereria bancrofti is viviparous and directly liberates sheathed third-stage filariform larva into lymph.
- ()The Microfilaria of Loa Loa appear in peripheral circulation only during the day from 12 - 2 pm.
- () Flukes are dioecious except for schistosomes, in which are monoecious.
- () In the pseudophyllidea order, the scolex does not possess suckers but possesses a pair of longitudinal grooves called as bothria.
- () The egg of Diphyllbothrium latum has an operculum at one end and often a small knob at the other and infective to humans .

Q 4. Fill the blank: (10 Mark)

Parasite	Habitat	Diagnostic stage	Mode of transmission
Diphyllobothrium Latum			
Schistosoma Mansoni			
Trichinella Spiralis			
Schistosoma Haematobium			
Trichuris trichiura			
Ancylostoma Duodenale			
Strongyloides Stercoralis			
Enterobius Vermicularis			
Ascaris lumbricoides			
Dracunculus Medinensis			

Q 5 :Discuss all of the following: (5 Mark)

A. Life cycle of Onchocerca volvulus.

B. Pathogenicity and Clinical Features of Ascaris lumbricoides .

انتهت الأسئلة

With best wishes.

AL-AQSA UNIVERSITY	جامعة الأقصى
Medical Technology Department	كلية العلوم - قسم العلوم الطبية المخبرية
اسم محاضر المساق: أ.د. عبد الرؤوف المناعمة أ.ناهض عبد اللطيف	اسم المساق: علم الفيروسات الطبية MEDT4220
مدة الامتحان: ساعتين	اسم الطالب/ة: الامتحان النهائي للفصل الدراسي غزة الثاني (2017-2018)

I. Select the best correct answer: (30 Marks)

1. This gene assists in transports viral HIV core from cytoplasm into nucleus in non-dividing cells

A. <i>rev</i>	B. <i>tat</i>
C. <i>nef</i>	D. <i>vif</i>
E. <i>vpr</i>	

2. Twinrix is a combination vaccine that immunizes against both:

A. HAV and HCV	B. HCV and HBV
C. HAV and HBV	D. HDV and HBV
E. HEV and HBV	

3. This protein in HBV act as an activator of viral RNA transcription.:

A. DNA polymerase	B. X protein
C. Surface (envelope) protein	D. Core (nucleocapsid) protein

4. If these is serologic results for HBV : HBsAg positive, HBsAb negative, HBcAb positive, HBeAg positive This case can be:

A. Complete convalescence	B. Window Phase
C. Chronic Carrier State	D. Acute Disease

5.the only example of an infectious virus transmitted by immune globulins.:

A. HAV	B. HEV
C. HBV	D. HDV
E. HCV	

6. This HIV antiviral is non-nucleoside and acts by inhibition of reverse transcriptase:

A. Indinavir	B. Nelfinavir
C. Azidothymidine	D. Efavirenz
E. Zidovudine	

7. Confirmatory assays for HIV is:

A. ELISA test	B. Western blot
C. RT-PCR	D. serial CD4 counts

8. Adenoviruses can be cause all of the following diseases in humans Except:

A. Pharyngitis	B. The common cold
C. Keratoconjunctivitis	D. Sarcomas
E. Hemorrhagic cystitis	F. Gastroenteritis

9. Some papillomaviruses genes encode proteins that inactivate proteins encoded by tumor suppressor genes in human cells, these genes are:

A. <i>nef</i> and <i>vif</i> genes	B. <i>p53</i> and the retinoblastoma (RB) genes
C. <i>tat</i> and <i>rev</i> genes	D. E6 and E7 genes

10. The only viruses that obtain their envelope by budding from the nuclear membrane:

A. Adenovirus	B. Human papillomavirus
C. Parvovirus B19	D. Herpesviruses
E. Epstein-Barr virus	F. Varicella zoster virus

11. The mechanism of action of raltegravir is:

A. Fusion inhibitors	B. Reverse transcriptase inhibitors
C. Protease inhibitors	D. Blocks the binding of the gp120 envelope protein of HIV to CCR-5
E. inhibit the HIV-encoded integrase	

12. Dissemination the viruses through the nerves occurs in:

A. Rabies and herpesvirus	B. Mumps and AIDS.
C. Measles and Hepatitis B	D. Rubella and Hepatitis A

13. Negri bodies are important in the laboratory diagnosis of:

A. Rubella virus	B. Polioviruses
C. Rabies virus	D. Rhinoviruses
E. None of the above	

14. Confirmatory assays for HCV is:

A. ELISA test	B. Western blot
C. RT-PCR	D. Recombinant Immunoblot Assay
E. Complement fixation test	

15. Rabies-exposed persons are subjected to:

A. Passive immunization	B. Active immunization
C. Both A and B	D. Neither A nor B

16. There is strong relationship between presence of koilocytes in the lesions and:

A. Papillomaviruses infection	B. Cytomegalovirus
C. Adenovirus infection	D. Varicella zoster infection

17. Which of the following vaccines is not safe for immuno-deficient individuals?

A. Inactivated vaccines	B. Attenuated vaccines
C. Synthetic vaccines	D. Recombinant vaccines

18. The most serious complication of rubella infection is:

A. Acute arthralgia	B. Congenital rubella syndrome
C. Thrombocytopenia	D. Encephalopathy

19. All of the following statements are true regarding subunit vaccines except:

A. Safe, contamination with infectious virus is impossible
B. The antibody response they elicit is often strong and life long
C. Expensive
D. Mutants can escape the immunity produced by this vaccine
E. None of the above

20. What is an important difference between the genome of paramyxoviruses and orthomyxoviruses?

A. Orthomyxoviruses segmented RNA genome, Paramyxoviruses nonsegmented genomes.
B. Paramyxoviruses segmented RNA genome, orthomyxoviruses nonsegmented genomes.
C. They have the same shape of genome
D. Mutants can escape the immunity produced by vaccine
E. None of the above

21. Herpesvirus group infect and become latent primarily in lymphoid cells:

A. Alpha herpesvirus	B. Beta herpesvirus
C. Gamma herpesvirus	D. Delta herpesvirus
E. None of above	F. All of above

22. All of these are characteristic of HIV Except:

A. HIV are associated with tumors, leukemias, and immunodeficiencies
B. Genome consists of 2 copies of (-) stranded RNA
C. The virus kills or damages cells of the body's immune system
D. RNA converted to DNA followed by chromosomal integration
E. Complement fixation test

23. All of these are characteristic of HBV Except:

A. It is a 42-nm enveloped virion
B. An icosahedral nucleocapsid core
C. Completely double-stranded circular DNA genome
D. its envelope contains a protein called the surface antigen (HBsAg)

24. If these is serologic results for HBV: HBsAg negative, HBsAb negative, HBcAb positive. This case can be:

A. Complete convalescence	B. Window Phase
C. Chronic Carrier State	D. Acute Disease

25.. The only viruses with a fiber protruding from each of the 12 vertices of the capsid.:

A. Adenovirus	B. Human papillomavirus
C. Parvovirus B19	D. Cytomegalovirus
E. Epstein-Barr virus	F. Varicella zoster virus

26. Adenovirus types 11 and 21 cause:

A. Respiratory disease	B. Keratoconjunctivitis
C. Hemorrhagic cystitis	D. Infantile gastroenteritis

27. If these is serologic results for HCV: Anti HCV(ELISA) positive, Anti HCV(RIBA) positive, Anti HCV(RNA) negative. This case can be:

A. No infection	B. Past or current infection
C. Ongoing infection	D. False positive ELISA; no infection

28. Parvovirus B19 can be causes:

A. Erythema infectiosum	B. Slapped cheek syndrome
C. Hydrops fetalis	D. Aplastic anemia
E. Arthritis	F. All of above

29. All of these factors induce reactivation of herpes viruses from latent state Except:

A. Sunlight	B. Hormonal changes
C. Trauma	D. Stress
E. Obesity	F. Fever

30. All these diseases can be caused by HSV-1 Except:

A. Acute gingivostomatitis	B. Recurrent herpes labialis
C. Keratoconjunctivitis.	D. Encephalitis.
E. Genital herpes	

Write all of the MCQ 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	27	28	29	30

II. Matching (12 Marks)

- A. gp41
- B. Vertical transmission
- C. hepatitis A
- D. HBeAg
- E. Tat
- F. gp120
- G. immune reconstitution
- H. iatrogenic disease
- I. Reye's syndrome
- J. pp65
- K. syncytia
- L. SARS

	1. Is a severe atypical pneumonia characterized by a fever of at least 38°C, nonproductive cough, dyspnea, and hypoxia
	2. Are form multinucleated giant cells which give rise to the name of the RSV
	3. Attachment to CD4 protein
	4. Activation of transcription of viral genes
	5. Is an illness that is caused by a medication or physician
	6. A protein located in the nucleocapsid of CMV
	7. From mother to the newborn
	8. Fusion with host cell
	9. Also known as enterovirus 72
	10. Important indicator of transmissibility
	11. Increased damage to the hepatocytes by the cytotoxic T cells.
	12. Characterized by encephalopathy and liver degeneration, and associated with VZV and influenza B virus infection

Write all of the Matching answers in the following table.

1	2	3	4	5	6	7	8	9	10	11	12

III. True and false (13 Marks)

1. RIG are injected intramuscular in exposed patients and at the same time as much as possible of the vaccine is injected at the site of bite. ()
2. The envelope proteins of HTLV are gp46 and gp21, whereas those of HIV are gp120 and gp41. ()
3. The Varicella Zoster virus is thought to gain entry via the oral fecal routes. ()
4. The surface spikes of parainfluenzavirus consist of hemagglutinin, and neuraminidase proteins only. ()
5. Most patients with Kaposi's sarcoma have antibodies against HHV-8. ()
6. Lesions caused by HSV-2 are, in general, above the waist, whereas those caused by HSV-1 are below the waist. ()
7. Infection cycle of Rabies virus completed when virus replicates in the salivary glands. ()
8. In influenza viruses the hemagglutinin functions at the beginning of infection, whereas the neuraminidase functions at the end. ()
9. High doses of vitamin C have great ability to prevent rhinovirus-induced colds.
10. HBV is the only human virus that produces spheres and filaments in large numbers in the patient's blood, and its contains viral DNA. ()
11. Diagnosis of infection with rotavirus is made by finding the virus in the child's stool by enzyme immunoassay. ()
12. Encephalitis as a complication occurs in most cases of measles. ()
13. Along with coxsackieviruses, echoviruses are one of the leading causes of aseptic meningitis. ()

Write all of the T & F answers in the following table.

1	2	3	4	5	6	7	8	9	10	11	12	13

IV. Discuss all of the following: (15 Marks)

1. Why an HIV Vaccine Doesn't Exist Yet?

2. Discuss the mechanism of latency in Herpes simplex virus.

3. What is the association between EBV and Cancer?

4. Why the smallpox vaccine success to eradicate the disease from the world completely.

5. How Infections with rotavirus are diagnosed?

انتهت الأسئلة

مع تمنياتنا لكم بالنجاح والتوفيق



التاريخ: 2018 / 5 / 20

الزمن : 2 ساعة

عدد الأسئلة : 4 أسئلة

الرقم الجامعي :

الاختبار النهائي لمساق

علم المناعة السريرية

Clinical Immunology

الفصل الثاني : 2017-2018

محاضر المساق: د. منصور اليازجي

عدد الأوراق : 8 صفحات

اسم الطالب :

Q 1. Choose the correct answer for each of the following sentences (40 Marks)

1. Rheumatoid arthritis (RA) is different from some other forms of arthritis because it...
 - a. Is more painful than other forms
 - b. Occurs below the waist
 - c. Is symmetrical, affecting the right and left sides of the body
 - d. Generally occurs above the knee
2. Psoriasis is considered :
 - a. is not contagious
 - b. T-cell mediated autoimmune disease
 - c. Anti-desmoglein 3
 - d. A & bare correct
3. Rheumatoid arthritis is a disease caused by abnormalities in which system of the body?
 - a. Nervous system
 - b. Immune system
 - c. Digestive system
 - d. Respiratory system
4. The single best defining feature of systemic lupus erythematosus (SLE) is that it is:
 - a. An autoimmune disease
 - b. A disease that often affects the skin
 - c. A disease in which, characteristically, anti-DNA autoantibodies are present
 - d. A disease that often affects the kidneys
5. Which of the following is a non-organ-specific (systemic) autoimmune disease:
 - a. Myasthenia gravis.
 - b. Systemic lupus erythematosus (SLE).
 - c. Hashimoto's thyroiditis.
 - d. Pernicious anemia.
6. Which of the following antibodies are of most use for the diagnosis of pernicious anemia:
 - a. Anti-parietal cell.
 - b. Anti-thyroid peroxidase.
 - c. Anti-nuclear.
 - d. Anti TSH receptor

7. The high concordance rate for monozygotic vs dizygotic twins in type 1 diabetes indicates:
- A strong environmental element.
 - A strong genetic element.
 - A major influence of sex.
 - The influence of HLA.
8. Which of the following antibodies are useful for the diagnosis of Sjögren's syndrome:
- Anti-cardiolipin.
 - Anti-neutrophil cytoplasm (ANCA).
 - Anti-SS-A(Ro), anti-SS-B(La).
 - Anti-21-hydroxylase.
9. Which one of these statements about inflammatory bowel disease is true?
- Crohn's disease and ulcerative colitis have the same histological findings
 - Crohn's disease and ulcerative colitis affect the same parts of the intestinal tract
 - Smoking is an important triggering factor in both Crohn's disease and ulcerative colitis
 - Mutations in the (NOD)2 gene are associated with Crohn's disease.
10. In celiac disease there is T-cell sensitivity to:
- Thyroid peroxidase.
 - Gluten.
 - adrenergic receptors.
 - Myelin basic protein.
11. The pathogenic autoantibody in Graves' disease has specificity for which one of the following?:
- Glycosylation.
 - Thyroglobulin
 - Thyroid-stimulating hormone (TSH) receptors.
 - TSH.
12. In type 1 diabetes (insulin-dependent diabetes mellitus), the target of the autoimmune attack is:
- All of the cells in the islets of Langerhans.
 - Antibodies to pancreatic islet cells [ICA].
 - The somatostatin-producing cells in the islets of Langerhans.
 - The glucagon-producing cells in the islets of Langerhans.
13. Which of the following factors has not been associated with the development of autoimmune disease:
- SCID.
 - HLA.
 - Genetic factors other than HLA.
 - GPC are found more frequently in gastric juice than in serum
14. Which one of the following statements about gastric parietal cell antibodies [GPC] is true?
- They inhibit absorption of vitamin B12 in the ileum
 - They are best considered a screening test for pernicious anemia
 - They are usually of IgM isotype
15. Autoimmune hepatitis is
- A disease of connective tissue
 - Develops when immune cells attacks gall bladder
 - Develops when immune cells attacks liver cells
 - B & c are correct

16. Involves antibody-mediated destruction of cells
- Type II hypersensitivity reactions
 - Type III hypersensitivity reactions
 - Type I hypersensitivity reactions
 - Type IV hypersensitivity reactions
17. Rheumatoid factor , found in synovial fluid of patients with RA, is found to be
- IgM reacting with L chain of IgG
 - IgM reacting with heavy chain determinant of IgG
 - IgE reacting with bacterial antigens
 - Antibody to DNA
18. Most patients express HLA-DQ2 or HLA-DQ8 in
- Systemic sclerosis
 - Coeliac disease
 - Psoriasis
 - Ulcerative colitis
19. Myasthenia gravis is
- Systemic autoimmune disease
 - Mediated by antibodies to TSH-receptor
 - Mediated by antibodies to acetylcholine receptor
 - B & C
20. Systemic lupus erythematosus
- Is due to mutation in nucleoproteins
 - Has many symptoms and affects many organs
 - Is a classic example of a T cell-mediated autoimmune disease
 - All of the above
21. In type III hypersensitivity reactions
- Antigen-antibody complexes are deposited in tissues
 - Antibodies are of IgE class
 - Antibodies binds to a cell surface antigens
 - All of the above
22. Multiple sclerosis are accompanied by
- affects the CNS
 - attacks the fatty tissue called myelin
 - Exophthalmia
 - A& B are correct
23. Guillain Barre Syndrome (GBS) is characterized by
- A disease of the liver
 - A disease of gastrointestinal tract
 - A disease of the peripheral nervous system
 - A disease of the endocrine system
24. anti-citrullinated antibody is of diagnostic value for:
- pernicious anemia
 - Crohn's disease
 - rheumatoid arthritis
 - SLE

25. HLA-B27 is considered a diagnostic marker for :
- SLE
 - Ankylosing spondylitis
 - RA
 - Systemic sclerosis
26. Diabetes mellitus type1 is caused by
- Anti-Glutamic decarboxylase
 - Antibodies against α cells of pancreas
 - C3 deficiency
 - All of the above
27. Sjogren's syndrome is
- Systemic disease
 - Causes inflammation of exocrine glands
 - Causes inflammation of adrenal glands
 - All of the above
28. Hashimoto's disease is characterized by
- Autoantibody to thyroid peroxidase
 - Tachycardia
 - Anti-TSH receptor
 - Weight loss
29. Addison's disease is characterized by
- Autoimmune destruction to B-cell
 - Aldosterone, cortisol, adrenal androgen deficit
 - Increased production of ACTH
 - B & C
30. Gluten Sensitive Enteropathy " GSE " is caused by
- T-cell mediated to gliadin
 - DQ2 associated
 - Genetics play a major role
 - All of the above
31. Crohn's disease
- Is transmural, involving all layers of the bowel
 - Affected the parietal cells of stomach
 - HLA.B27 associated
 - All of the above
32. As seen in many patients with lupus, the hallmark "butterfly rash" appears...
- On the back
 - Between the shoulders
 - Across the nose and cheeks
 - All of the above
33. Autoimmune hepatitis can be diagnosed laboratorally
- Elevated level of IgE
 - ANA , SMA and LKM-1 are positive
 - Anti SS-A(Ro) Or Anti SS-B(La) is more specific
 - A&B are correct

34. The main symptoms of Polymyositis includes :
- Dysphagia and other aspects of oesophageal dysmotility
 - Thickening of the skin on the fingers and hands
 - Foot drop in one or both feet
 - All of the above
35. What are some symptoms of lupus (SLE)?
- Vomiting and thyroid disorders
 - Dry mouth and dysphagia
 - Is an inflammatory disease of lacrimal gland
 - Sun sensitivity rash, arthritis and fatigue
36. All the following have been implicated in causing or exacerbating g SLE except
- MHC genes
 - sunlight
 - Viruses
 - Testosterone
37. Bullous Pemphegoid can be diagnosed by
- Bullous pemphegoid antigen 1&2 (BPAg1&2)
 - Anti-dismoglein-3
 - A & B
 - IgM is elevated
38. Alopecia universal's :
- It is mild patchy hair loss on the scalp
 - It is complete hair loss on the scalp
 - It is complete loss of hair all over the body
 - All of the above
39. Pemphigus vulgaris
- Autoimmune disorder that involves blistering & sores of the skin
 - Usually occurs at age between 40 to 60 years
 - Can be diagnosed by detecting antibodies to desmosome adhesion molecules such as desmoglein-3
 - All of the above
40. Which of the following organ systems can be affected by SLE?
- cardiovascular
 - pulmonary
 - hematologic
 - all of the above

MCQ	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	27	28	29	30
	31	32	33	34	35	36	37	38	39	40					

Q 2. Put True (T) or False (F).Correct the false one

(10 Marks)

1. () Langerhans' cells are intra-epidermal antigen-presenting cells.
2. () People with rheumatoid arthritis experience the most stiffness at night.
3. () People do not die from lupus.
4. () Chronic psoriatic lesions contain infiltration of neutrophils, Th1 & Dc.
5. () Bullous pemphigoid is most likely autoantibody mediated of the skin.
6. () Rheumatoid arthritis can be cured if diagnosed and treated early.
7. () Crohn's disease affects any parts of the GIT.
8. () Celiac disease is diagnosed by Anti intrinsic factor antibodies.
9. () Addison's disease is characterized by a decrease in TSH .
10. () Pernicious anemia is caused by autoantibodies against intrinsic factor

	1	2	3	4	5	6	7	8	9	10
T or F										

Q 3. Write short notes on each of the following

(10 Marks)

1- Immunological mechanisms of celiac disease

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2- Clinical feature of Pernicious anemia

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3- Clinical features and immunopathogenesis of ulcerative colitis

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Q 4. Write on each of the following

(10 Marks)

1. Laboratory diagnosis of

a. SLE

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b. Autoimmune hepatitis

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c. Celiac disease

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d. Polymyositis syndrome

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e. Bullous pemphigoids

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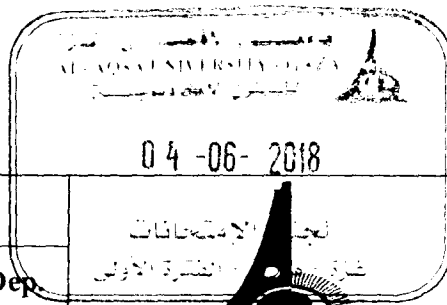
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انتهت الأسئلة

With best wishes



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Q 1: Choose the single best answer for the following questions: (40 marks)

- All of the following will lead to shift of dissociation curve toward right, Except:**
 - Decreased pH
 - Increased 2,3-DPG level
 - Decreased CO₂
 - Increased CO₂
- All true regarding delta-aminolevulinic acid dehydratase, Except:**
 - The control step in heme synthesis
 - Inhibited by lead
 - Require the presence of vitamin B6 for activity
 - Occur in the cytosol
 - A & C
- One of the following conditions will most likely lead to hypoxia:**
 - high levels of 2,3-DPG
 - acidosis
 - Methemoglobinemia
 - bacteremia
- In the human body, iron is found in the largest amount in:**
 - Macrophages of the reticuloendothelial system
 - Hemoglobin
 - Myoglobin
 - Enzymes
- ONE of the following laboratory findings is NOT a feature of iron deficiency anemia:**
 - Decreased bone marrow iron
 - Decreased red cell protoporphyrin
 - Microcytic hypochromic anemia
 - Increased total iron binding capacity

6. Anemia of chronic disease is characterized by all of these, Except:
- Low levels of serum iron
 - Reduced transferrin saturation
 - Reduced iron binding capacity
 - Reduced serum ferritin
7. One of the following statements is NOT correct:
- A unit of blood contains 200–250 mg iron
 - A man needs to absorb about 1 mg of dietary iron daily
 - A molecule of transferrin may transport four atoms of iron
 - Haemorrhage is the major cause of iron deficiency
8. One of the following is NOT a feature of megaloblast:
- Larger than normoblast
 - Nuclei have more open sieve-like chromatin
 - Cytoplasmic maturation lags behind nuclear maturation
 - Marrow shows increased proportion of more primitive erythroid cells
9. Iron absorption is increased in all, Except:
- Iron deficiency
 - Pregnancy
 - Hypoxia
 - Alkaline pH of stomach
10. Homozygous β -thalassemia can be confused with iron deficiency because both have:
- Decreased serum ferritin
 - Decreased serum iron
 - Decreased % transferrin saturation
 - Microcytic hypochromic RBCs
11. In lead poisoning, coarse basophilic stippling is seen and this is due to:
- Inhibition of the enzyme 5' pyrimidine nucleotidase
 - Inhibition of the enzyme ferrochelatase
 - Inhibition of the enzyme δ aminolevulinic acid dehydratase
 - All of the above
12. The most common cause of beta thalassemia is:
- Point mutation
 - Insertion
 - Deletion
 - All are equally distributed

13. Vaso-occlusive crisis leading to infarcts being the hallmark of:

- a. Hereditary spherocytosis
- b. α -thalassemia
- c. β -thalassemia
- d. Sickle cell anemia

14. Hb H disease is characterized by:

- a. Deletion of one α gene
- b. Deletion of two α genes
- c. Deletion of three α genes
- d. Deletion of four α genes

15. A 55-year-old woman with rheumatoid arthritis is referred to the haematology outpatient department. She has symptoms of profound fatigue and tinnitus and a routine full blood count had revealed her to have microcytic anemia. Her iron studies reveal a low iron and low iron binding capacity. Which of the following is the most likely cause of anemia:

- a. Anemia of chronic illness
- b. Iron deficiency anemia
- c. Thalassemia
- d. Sideroblastic anemia

16. Elevated serum ferritin, serum iron and percentage transferrin saturation are most consistent with diagnosis of:

- a. IDA
- b. Hemochromatosis
- c. Anemia of chronic inflammation
- d. Lead poisoning

17. Hemoglobin S is due to a β chain defect. Hb S is formed when:

- a. Glutamic acid is replaced by lysine at the 26th position of the β chain
- b. Glutamic acid is replaced by lysine at the 121st position of the β chain
- c. Glutamic acid is replaced by lysine at the 6th position of the β chain
- d. Glutamic acid is replaced by valine at the 6th position of the β chain

18. ONE of these statements is TRUE about Classical Hereditary haemochromatosis:

- a. It is dominantly inherited
- b. It is usually caused by HFE gene missense mutation 845 G to A
- c. Serum hepcidin levels are high in patients with mutated HFE
- d. It is associated with reduced saturation of transferrin

19. In pernicious anemia, all of the following are true, Except:

- a. Causes of pernicious anemia are immunologically related
- b. Patients are at risk of developing gastric carcinoma
- c. Folate levels are low
- d. B12 levels are low

20. All of the following statements regarding paroxysmal nocturnal hemoglobinuria (PNH) are true, Except:

- a. Inherited X linked mutation
- b. Occurs due to mutation of the PIG- A gene
- c. Chronic intravascular haemolysis due to the uncontrolled effect of complement on the abnormal red blood cells
- d. PNH may be diagnosed by flow cytometry and Ham's acidified serum test

21. All of the following are manifestations of folate deficiency, Except:

- a. Reticulocytopenia
- b. Neurological complications
- c. Bone marrow hypercellularity
- d. Elevated serum LDH

22. An adult patient suspected of having thalassemia presents with the following hemoglobin electrophoresis pattern: Hb A=0.0%, Hb F=92%, Hb A2=8%. This pattern best fits a diagnosis of :

- a. Hb H disease
- b. Cooley's anemia
- c. α -Thalassemia trait
- d. Thalassemia minor

23. The most common manifestation of G6PD deficiency is:

- a. Chronic hemolytic anemia caused by cell shape change
- b. Acute hemolytic anemia caused by drug exposure, infections and fava beans
- c. Mild compensated hemolysis caused by ATP deficiency
- d. Chronic hemolytic anemia caused by intravascular RBC lysis

24. ONE of the following statements is TRUE about β -thalassaemia minor:

- a. It is associated with a raised haemoglobin A2 level more than 3.5%
- b. It is associated with iron overload
- c. It is associated with a reticulocytosis
- d. It is associated with splenomegaly

25. A 34 year old patient with a hemoglobin of 7.5 g/dl, a smooth and sore tongue, a peculiar desire to eat ice and spooning of the fingernails, the most likely red blood cell indices are:
- Microcytic and hypochromic indices
 - Macrocytic indices
 - Normocytic indices with an elevated reticulocyte count
 - Normocytic indices with a normal reticulocyte count
26. Homozygous beta-thalassemia major patients have:
- No manifestations of anemia
 - Only mild anemia
 - Moderate anemia
 - Severe transfusion-dependent anemia
27. Hydrops fetalis is fatal because:
- Hb H cannot bind to oxygen
 - The excess β -globin chains form insoluble precipitates
 - Microcytic red cells gets trapped in the placental blood vessels
 - Hb Barts cannot deliver oxygen to tissues
28. Regarding the alpha globin gene, Which of the following is Correct?
- The presence of 0 functional alpha globin genes is associated with Hb H disease
 - The alpha globin gene is on the same chromosome as the beta globin gene
 - Alpha globin gene defects are manifest at birth
 - The production of alpha globin chains is normally twice that of beta globin chains
29. A 33 year old female was admitted to the hospital for a hysterectomy (استئصال رحم) to control excessive uterine bleeding. Her Hgb was 7.4 g/dl, Hct was 23% and red blood cell count was 2 million/ μ l. The most likely cause of her anemia is:
- Iron deficiency anemia secondary to blood loss
 - Megaloblastic anemia
 - Thalassemia major
 - Anemia of chronic disease
30. In anemia of chronic disease the expected combination of parameters would be:
- High serum iron; low TIBC; low marrow iron stores
 - High serum iron; high TIBC; high marrow iron stores
 - Low serum iron; low TIBC; low marrow iron stores
 - Low serum iron; low TIBC; high marrow iron stores

31. Extravascular hemolysis is best characterized by all, Except:

- a. Increased LDH
- b. Splenomegaly
- c. Jaundice
- d. Hemosiderinuria

32. Which of the following is not associated with hemolytic anemia:

- a. The red cell distribution width (RDW) is increased with RBC fragmentation .
- b. The level of serum haptoglobin is increased .
- c. Reticulocytosis is suggested by the appearance of polychromasia .
- d. The level of unconjugated bilirubin is increased .
- e. Hemoglobinuria appear with intravascular hemolysis.

33. In a case of hypochromic anemia in association with splenomegaly and hemochromatosis, patient is most likely to have:

- a. Hereditary spherocytosis
- b. Thalassemia
- c. G6PD deficiency
- d. Sickle cell anemia

34. One of the following statements regarding IDA is NOT true:

- a. RDW will be high
- b. Microcytic & hypochromic cells will be observed during pre-latent stage
- c. Serum iron and ferritin levels are low, TIBC is high
- d. Reticulocyte counts will be low

35. Which of the following statements is incorrect:

- a. peripheral blood smear that has target cells is consistent with chronic alcoholism.
- b. Basophilic stippling in RBC's suggests bone marrow injury by a drug or by a toxic agent.
- c. Schistocytes on the peripheral smear suggest iron deficiency anemia.
- d. Howell-Jolly bodies in RBC's suggest a previous splenectomy

36. One of the following morphological classifications best describes the hemolytic anemias:

- a. microcytic,hypochromic
- b. normocytic,hypochromic
- c. normocytic,normochromic
- d. macrocytic,hypochromic

37. Of the four clinical states of alpha thalassemia, which is incompatible with life:

- e. hemoglobin H disease
- f. Hydrops Barts fetalis
- g. alpha thalassemia trait
- h. alpha thalassemia silent carrier

38. A macrocytosis with MCV of 105 observed in all the peripheral blood RBC's, Except:

- a. Vitamin B12 deficiency
- b. Anemia of chronic disease
- c. Chronic liver disease
- d. Folate deficiency

39. One of the following findings is LEAST likely to be associated with drug use:

- a. Microcytic anemia
- b. G6PD deficiency with anemia
- c. Autoimmune hemolytic anemia
- d. Aplastic anemia

40. A 51-year-old female has been feeling tired for months. A CBC demonstrates the following: Hgb 9.5, Hct 28.1, and MCV 134. The reticulocyte index is low. Hyper segmented PMN's are seen on the peripheral blood smear. Which of the following tests should be ordered next:

- a. Bone marrow biopsy
- b. Hemoglobin electrophoresis
- c. Serum B12 and folate
- d. Serum ferritin

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	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Q 2: Write T for true statement and F for false statement: (20 marks)

	1. Inflammatory disorders decrease iron absorption due to increased hepcidin level.
	2. Hb is 70% saturated in arterial blood and P50 of normal blood is 26 mmHg.
	3. The earliest sign of iron deficiency anemia is decreased serum iron.
	4. The iron regulatory hormone hepcidin is one of the mediators of the iron abnormalities seen in ACD.
	5. Hereditary spherocytosis is characterized by defects of vertical connections between lipid bilayer and membrane skeleton proteins.
	6. The diagnostic test for PNH is flow cytometry to assess the expression of glycosyl phosphatidyl inositol (GPI)-linked antigens on the surface of the blood cells.
	7. Patients with β^0 thalassaemia major are able to produce small quantities of β globin chains.
	8. Reticulocyte count, lactate dehydrogenase and haptoglobins are all markers of hemolysis.
	9. In β -Thalassaemia major, Symptoms develop around the age of 6 months as the main haemoglobin switches from HbA to HbF.
	10. Major cause of death in patients with thalassemia major is secondary to cardiomyopathy.
	11. The pathophysiology of megaloblastic anemia is due to Defective RNA synthesis and abnormal nuclear maturation
	12. Beta thalassemia minor is similar to IDA, with the exception of an elevated RBC and an elevated Hb A2.
	13. In Warm antibody immune haemolytic anaemia the antibody responsible is IgM.
	14. Hemolytic disease of the newborn develops with Rh -ve fetus while an Rh +ve mother.
	15. In hereditary hemochromatosis, transferrin will be increased but ferritin decreased.
	16. Site of folate absorption is ileum.
	17. All macrocytic anemias are megaloblastic.
	18. Hereditary Elliptocytosis is a membrane disorder in which red blood cells have an intrinsic defect to sodium and potassium permeability.
	19. α thalassaemia is more commonly due to point mutations than deletions of the α genes.
	20. Earliest response during treatment of iron deficiency anemia is increasing in hemoglobin level.

Q 3: Fill and mention the following:

(20 marks)

	1. Known as γ_4 tetramers
	2. Is cellular iron exporter, Its important as the last step in intestinal iron absorption
	3. The common cause of anemia is a defect in heme synthesis.
	4. Is a type of hemolytic anemia in which the defects in horizontal interactions between components of the membrane skeleton
	5. Required for absorption of Vitamin B12, synthesized by the gastric parietal cells
	6. Is a hematopoietic stem cell (HSC) disorder characterized by hypocellular bone marrow
	7. Is the essential plasma protein for transferring B12 into the cells of the body
	8. The leading cause of death in PNH patient
	9. Positive coombs test (give example)
a) b) c)	10. Biochemical tests used to diagnose VB12 deficiency
a) b) c)	11. Regulators of iron absorption
a) b) c) d)	12. Factors promote sickling
a) b) c)	13. Types of antibodies in pernicious anemia.
a) b) c)	14. Causes of iron overload
a) b)	15. Alloimmune Hemolytic Anemia (2 examples)
a) b) c) d)	16. Causes of aplastic anemia

Q 4: Matching**(10 marks)**

1.	Dilutional anemia	A.	NADPH and reduced glutathione are impaired	
2.	Acute blood loss	B.	IDA	
3.	Desferrioxamine	C.	parasitic competition for vitamin B12	
4.	Vitamin B12 deficiency	D.	Pregnancy	
5.	G6PD deficiency	E.	Sideroblastic anemia	
6.	Schilling test	F.	Pernicious anemia	
7.	Pappenheimer Bodies	G.	suppress and destroy hematopoietic progenitors	
8.	Koilonychia	H.	Iron chelation therapy	
9.	<i>Diphyllobothrium latum</i>	I.	Neurological complications	
10.	IFN γ and TNF	J.	Blood volume disruption	

Q 5: Write briefly about the following:**(10 marks)**

1. Transcobalamin deficiency causes megaloblastic anemia, While the serum B12 level is normal, explain:

2. Laboratory findings of Aplastic anemia:

3. **Laboratory Findings of Hereditary spherocytosis:**

4. **Laboratory Findings of Sideroblastic anemia:**

END of QUESTIONS

With all best wishes

Miss: Amany Suhail AlHindi

<p style="text-align: center;">  جامعة الأقصى AL-AQSA UNIVERSITY - GAZA جامعة القدس </p> <p style="text-align: center;">21-05-2018</p>		
Al-Aqsa University	لجنة الامتحانات	جامعة الأقصى
Medical Laboratory Sciences Dep.	غزة - طرابلس - الفترة الاولى	قسم العلوم الطبية المخبرية
اسم محاضر المساق: أ. أماني سهيل الهندي		اسم المساق: علم دم متقدم
مدة الامتحان: ساعتين	الامتحان النهائي للفصل الدراسي الثاني (2017-2018)	اسم الطالب/ة:
العلامة: 90 درجة		عدد الأسئلة: 5 أسئلة
تاريخ الإمتحان: 2018/05/21 (فترة أولى)		عدد الصفحات: 11 صفحة

Q 1: Choose the single best answer for the following questions: (40 marks)

1. All of the following are serine proteases Except:

- Factor II
- Tissue factor
- Factor X
- Factor XII

2. Platelet glycoprotein which is the main binding receptor for fibrinogen:

- Gp Ia/ IIa
- Gp VI
- Gp Ib- IX- V
- Gp IIb/ IIIa

3. Hageman was a patient with a deficiency of one of the coagulation factors, which coagulation factor he is deficient in:

- Factor XII
- Factor XI
- Factor IX
- Factor X

4. Two regulatory proteins form a complex that digests activated factors V and VIII:

- TFPI and Xa
- Antithrombin and protein C
- APC and protein S
- Thrombomodulin and plasmin

5. On the EC surface, thrombomodulin acts with thrombin to activate:

- Plasmin
- TxA2
- Protein C
- Antithrombin

6. **Serine protease that activates factor X and factor IX :**
- Factor XIIa
 - Factor VIIa
 - Factor Va
 - Factor XIIIa
7. **Which of the following are directly activated by low concentration of thrombin:**
- Factor VIII
 - Factor IX
 - Factor XI
 - Factor XIII
 - a, c and d
8. **Stuart-Prower Factor is:**
- Factor V
 - Factor VII
 - Factor XI
 - Factor X
9. **Factors are part of the intrinsic system of the coagulation cascade:**
- II, VII, IX, X
 - VII, TF
 - X, V, II, I
 - VIII, IX, XI, XII
 - II, V, VIII, X
10. **The factor that has the shortest plasma half- life:**
- Factor IX
 - Factor XI
 - Factor VII
 - Factor I
11. **A deficiency of which clotting factor will lead to bleeding problems:**
- HMWK
 - Prekallikrein
 - Factor XI
 - Factor XII

12. Is not a vitamin K dependent clotting factor:

- a. Factor XII
- b. Factor II
- c. Factor VII
- d. Factor X
- e. Factor IX

13. One of the following would result in an increase in free protein S levels:

- a. C4b binding protein deficiency
- b. Pregnancy
- c. Disseminated intravascular coagulation
- d. Liver failure

14. Baby aspirin exerts its inhibitory action on:

- a. PGI₂ formation
- b. TXA₂ formation
- c. TXA₂ and PGI₂
- d. Thrombin formation

15. Factor VII deficiency will have the following results:

- a. Prolonged PT and APTT
- b. Prolonged PT and Normal APTT
- c. Normal PT and APTT
- d. Normal PT and prolonged APTT

16. A 2-year-old child with an unexpected platelet count of 15,000/ μ L and a recent history of a viral infection most likely has:

- a. HIT
- b. TTP
- c. Acute ITP
- d. Chronic ITP

17. Platelets with alpha granules deficiency, this syndrome is called:

- a. Bernard Soulier syndrome
- b. Glanzmann's thrombasthenia
- c. Gray platelet syndrome
- d. Dense platelet syndrome

18. When ingesting aspirin, which of the following is prolonged:

- a. APTT
- b. PT
- c. TT
- d. Bleeding time

19. Thrombosis is an expected event in all of the following, Except:

- a. Protein C deficiency
- b. Protein S deficiency
- c. Antithrombin deficiency
- d. Hypohomocystinemia

20. Type I vWD is characterized by:

- a. Qualitative defect in vWF
- b. Complete deficiency of vWF
- c. Partial deficiency of vWF
- d. Autosomal recessive inheritance

21. Is considered an anti-platelet agent:

- a. Streptokinase
- b. Alteplase
- c. Clopidogrel
- d. Warfarin

22. The patient has deep vein thrombosis. The PTT is prolonged and when we mix of patient plasma with an equal part of normal plasma (mixing studies) the PTT result is not corrected. What is the condition?

- a. Factor IX deficiency
- b. Lupus anticoagulant
- c. Factor VIII deficiency
- d. Factor V Leiden mutation

23. Bernard Soulier syndrome is characterized by all Except:

- a. Low platelet count
- b. Giant platelets
- c. Aggregation with ristocetin
- d. Has defect in GPIb/IX

24. ONE of the following statements is TRUE in haemophilia:

- a. The prothrombin time is prolonged
- b. The activated partial thromboplastin time (APTT) time is prolonged
- c. The bleeding time is prolonged
- d. The level of von Willebrand factor (vWF) in plasma is reduced

25. A disease characterized by primary defected platelet aggregation:

- a. Bernard Soulier syndrome
- b. Glanzmann's thrombasthenia
- c. Vasculitis
- d. Hereditary hemorrhagic telangiectasia

26. The hemostatic defect which is characterized by normal aggregation with agonists except with Ristocetin is:

- a. Glanzmann's thrombasthenia
- b. Bernard Soulier syndrome
- c. Aspirin ingestion
- d. Idiopathic thrombocytopenia purpura

27. In Thrombotic Thrombocytopenic Purpura (TTP) which of the following is true:

- a. PT is prolonged
- b. APTT is prolonged
- c. Both PT and APTT are prolonged
- d. Both PT and APTT are normal

28. Disseminated intravascular coagulation (DIC) differs from thrombotic thrombocytopenic purpura. The DIC is mostly characterized by:

- a. Significant numbers of schistocytes
- b. Thrombocytopenia
- c. Reticulocytosis
- d. Decreased coagulation factors level

29. ONE of the following exhibits decreased Factor VIII activity due to increased rates of Factor VIII degradation:

- a. Hemophilia B
- b. Hemophilia C
- c. Von Willebrand Disease
- d. Liver disease

30. Test is used most often to monitor UFH therapy:

- a. PT
- b. PTT
- c. ACT
- d. Chromogenic anti-factor Xa heparin assay

31. Joint bleeding can be seen in all, Except:

- a. Hemophilia A
- b. Hemophilia B
- c. Bernard Soulier syndrome
- d. Type III VWD

32. All used to treat VWD, Except:

- a. DDAVP
- b. Cryoprecipitate
- c. Platelets
- d. FVIII concentrate

33. A prolonged PT, a low factor VII level, but a normal factor V level are characteristic of an acquired coagulopathy associated with which of the following?

- a. Hemophilia
- b. Liver disease
- c. Thrombocytopenia
- d. Vitamin K deficiency

34. Is the most common inherited cause of venous thromboembolism in Caucasians:

- a. Protein S deficiency
- b. Factor V leiden mutation
- c. Anti thrombin III deficiency
- d. Protein C deficiency

35. All true regarding factor VIII, Except:

- a. High level thrombin destroy the procoagulant function of factor VIIIa
- b. Has no enzymatic activity but as a part of intrinsic pathway function as a cofactor for factor XIa activation of factor X
- c. Antihemophilic Factor and its activity is rapidly destroyed at room temperature
- d. Individuals with hemophilia A (X-linked recessive disorder) have low VIII activity but normal vWF levels

36. A 30 year old female is admitted to the hospital with neurological symptoms. The following results are obtained: Hb 6g/dl , hematocrit 19%, platelet count $25 \times 10^3/\mu\text{l}$, blood film with many schistocytes and ADAMTS-13 level markedly decreased. The most likely diagnosis for the patient is:

- a. Hemolytic uremic syndrome
- b. Thrombotic thrombocytopenic purpura
- c. Idiopathic thrombocytopenic purpura
- d. Von willeibrand disease

37. Drug enhances the capacity of antithrombin to inactivate thrombin and Factor Xa:

- a. Warfarin
- b. Heparin
- c. Lepirudin
- d. Aspirin

38. Activated protein C resistance due to Factor V Leiden is caused by which of the following:

- a. An autoantibody to activated protein C
- b. A deletion in protein C
- c. A point mutation in Factor V
- d. A point mutation in protein C

39. Type IIN Von Willebrand disease is a qualitative disorder that results in:

- a. A mutation in the VWF domain that binds Factor VIII
- b. Enhanced ristocetin induced platelet aggregation
- c. A mutation in VWF that prevents binding to platelet GP1b
- d. A mutation that interferes with VWF assembly

40. All disorders are inherited in an autosomal dominant fashion, Except:

- a. Protein S deficiency
- b. Protein C deficiency
- c. Antithrombin deficiency
- d. vWD Type III

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	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Q 2: Write T for true statement and F for false statement: (20 marks)

	1. Acute idiopathic thrombocytopenic purpura (ITP) is more common in adults than chronic ITP.
	2. The effect of aspirin on platelets has a half-life of 8 hours
	3. Vitamin K is required for glycosylation of II, VII, IX, X and protein C & S.
	4. The prothrombin time is prolonged in abnormalities of the extrinsic pathway.
	5. The mode of inheritance for Hemophilia B is X- linked dominant.
	6. Shigella dysenteriae is the most common cause of hemolytic uremic syndrome (HUS) in Children.
	7. Thrombus type most likely to be formed in low pressure veins is white thrombus.
	8. A pulmonary embolism is a blood clot that blocks blood flow in a vessel supplying lung.
	9. Concerning warfarin treatment, A target INR range of 2-3 is used for treatment of deep vein thrombosis.
	10. In hemophilia A, the bleeding is mainly superficial mucosal.
	11. Desmopressin acetate treatment is effective for vWD Type 3
	12. In vWD, the PT is normal and the PTT is prolonged.
	13. Haemostatic platelet count level is impaired when the platelet count falls below $50 \times 10^9/L$.
	14. Excessive anticoagulant effect in bleeding due to warfarin can be reversed by stopping the drug.
	15. Plasma vWF is derived from endothelial cells.
	16. Bleeding is an expected event in alpha 2 anti-plasmin deficiency.
	17. Lupus anticoagulants in APL syndrome give prolongation in PTT that does not correct in mixing studies.
	18. Functional plasmin activity only restricted to site of thrombosis by binding to fibrin meshwork via lysine binding sites.
	19. All coagulation factors are normally circulate in the plasma as inert form proteins.
	20. Factor V variant has normal procoagulant activity but is resistant to inhibition by activated protein C (APC).

Q 3: Fill in the blank:**(21 marks)**

	1. Refers to Tertiary Hemostasis.
	2. A disease characterized by primary defected platelet adhesion
	3. A blood clot that breaks and travels through the bloodstream.
	4. The hemostatic disease which is characterized by decreased mAb expression of CD41 (GPIIb) and CD61 (GPIIIa) in flow cytometry.
	5. Heparin antidote to reverse the overdose
	6. Thrombolytic drug (example)
	7. Anti-fibrinolytic drug (example)
	8. People with which blood group have the lowest mean levels of VWF
	9. Factor IX inhibitor (example)
	10. Triggers the release of VWF from stores so raising factor VIII serum levels.
	11. Thrombolytic drug is monitored by
	12. Factor V leiden point mutation
	13. Regulates the size of vWF multimers by converting large vWF multimers to normal vWF multimers.
a) b) c) d)	14. Advantages of LMWH over UFH
a) b) c) d)	15. Acquired risk factors of thrombosis
a) b) c)	16. Adverse effects of heparin therapy
a) b) c) d) e)	17. Clinical features of TTP patient

Q 4: Answer the following questions:

1. **Write briefly about DIC:** (5 marks)
- a. **Pathophysiology**
 - b. **Mention 2 conditions related to DIC**
 - c. **Laboratory findings**

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2. **Anti-phospholipid Antibody Syndrome** considered one of the **Acquired Hypercoagulable States**, explain your answer using these points (Types of antibodies, clinical features, Laboratory Tests): (4 marks)

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Q 5: Bonus Question

Match the hemostatic effect with the associated description:
(3 marks)

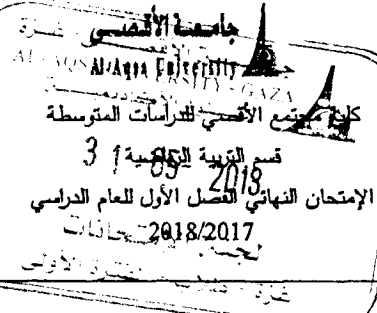
1)	Secretion of inhibitors of plasminogen activator (PAIs)		a)	Platelet effect
2)	TNF and IL-1 synthesize tissue factor		b)	Antiplatelet effect
3)	Synthesize of tissue plasminogen activator		c)	Fibrinolytic effect
4)	Mediated by thrombomodulin		d)	Antifibrinolytic effect
5)	Production of von willebrand factor (vWF)		e)	Procoagulant effect
6)	Endothelial prostacyclin and nitric oxide effect		f)	Anticoagulant effect

End of Questions

With All Best Wishes

Miss: Amany S. AlHindi

عدد صفحات الامتحان: ٤ صفحات	اسم المساق: علم وظائف الأعضاء
اسم الطالب:	رقم المساق: B
الرقم الجامعي:	مدة الإمتحان: ساعتان
رقم الشعبة:	وقت الإمتحان:
اسم المدرس: د. إياد أبو مسلمية	تاريخ الإمتحان:



- () يسيطر المخ علي التنفس عن طريق الأعصاب المخية والتي تخرج من الجزء السفلي من الدماغ.
- () معدل عدد ضربات القلب عن الإنسان البالغ تتراوح ما بين ٦٠ الي ٨٠ ضربة في الدقيقة.
- () عند قياس ضغط الدم في جسم الإنسان، يتم قياس ضغط الدم الموجود في أوردة الجسم.
- () الوظيفة الأساسية لمادة الهيموجلوبين في الدم هي نقل الغازات.
- () يتم التحكم في الشعبات الهوائية عن طريق الجهاز الإرادي حيث يقوم العصب الحائر بتوسيع الشعبات الهوائية.
- () الشريان الرئوي الخارج من القلب يحمل دم مؤكسد.
- () تتكون الشعبات الهوائية في الرئتين من عضلات لإرادية يتحكم فيها الجهاز العصبي للإرادي.
- () تعد عضلة الحجاب الحاجز من العضلات الأساسية في عملية التنفس وتكون علي شكل مخروط متجهة إلي أعلي.
- () يحتوي جسم الإنسان علي عدد كبير من العضلات، فهي تشكل حوالي ٥٠% من وزن الجسم.
- () تتكون اللييفة العضلية من مواد بروتينية هي خيوط الميوسين الكثيفة وخيوط الأكتين الرفيعة.
- () مثال علي الإنقباض العضلي بالتقصير هي عملية رفع الوزن ضد الجاذبية الأرضية.
- () من صمامات القلب، الصمام ثلاثي الشرفات والذي يوصل بين البطين الأيسر والشريان الرئوي.
- () معدل ضربات القلب عند الإنسان البالغ تكون أقل منه عند حديثي الولادة.
- () لون الدم الشرياني أحمر بسبب لون مادة أوكسي هيموجلوبين الموجودة علي كرات الدم الحمراء.
- () يبلغ عدد كرات الدم البيضاء في الإنسان البالغ حوالي ٥-٩ آلاف كرية لكل مم^٣.
- () تنتقل الغازات في جسم الإنسان من التركيز المنخفض إلى التركيز الأعلى بواسطة الانتشار البسيط.
- () ينقل الدم الأوكسجين بواسطة كرات الدم الحمراء والبلازما، حيث يذاب في البلازما بكميات قليلة جداً.
- () عدد كرات الدم الحمراء في الشخص البالغ حوالي ٥-٦ آلاف كرية لكل مم^٣.
- () الضغط الجزئي لغاز الأوكسجين في الدم أعلي منه في الهواء الموجود في الرئتين.
- () معدل التنفس للشخص البالغ في وقت الراحة حوالي ٤٠ مرة في الدقيقة الواحدة.

- تتكون خيوط الاكتين والميوسين في اللييفة العضلية من:
 - أ. مادة دهنية
 - ب. نسيج ضام
 - ج. مادة بروتينية
 - د. من نسيج خاص
- العضلات اللاإرادية هي عضلات:
 - أ. مخططة
 - ب. ملساء
 - ج. غير مخططة
 - د. من نسيج خاص
- يغطي العضلة من الخارج نسيج:
 - أ. ضام
 - ب. عضلي
 - ج. وعائي وعصبي
 - د. ساركولما
- جميع ما يلي من وظائف الشعيرات الدموية ما عدا واحدة:
 - أ. تبادل الغازات
 - ب. تبادل العناصر الغذائية
 - ج. تنقية الدم
 - د. صنع المضادات
- من وظائف الصفائح الدموية:
 - أ. تؤثر في سيولة الدم
 - ب. تساعد علي تجلط الدم
 - ج. تدافع عن الجسم
 - د. (أ + ب)
- يتكون وتر العضلة من نسيج:
 - أ. ليفي ابيض متين
 - ب. عضلي قابل الانقباض
 - ج. نسيج طلائي عصبي
 - د. ليس مما سبق
- الأوردة الرئوية الأربعة تحمل دم:
 - أ. دم مؤكسد
 - ب. دم غير مؤكسد
 - ج. دم فاسد
 - د. (أ + ب)
- التوازن القاعدي الحامضي للدم (PH).
 - أ. 7,35-7,45
 - ب. 6,35-6,45
 - ج. 5,35-5,45
 - د. ليس مما سبق
- عملية إطلاق الطاقة داخل الخلية الحية بعد أكسدة المواد الغذائية بواسطة الأكسجين.
 - أ. تنفس رئوي
 - ب. تنفس داخلي
 - ج. تنفس خارجي
 - د. تنفس خلوي
- من التغيرات الكيميائية في الجسم والتي تؤثر في زيادة معدل التنفس هي.
 - أ. نقص الأكسجين
 - ب. زيادة ثاني أكسيد الكربون
 - ج. زيادة درجة الحموضة في الدم
 - د. جميع ما سبق

(٥)

١- اشرح/ي في نقاط كيفية حدوث عملية التنفس (آلية التنفس) ؟

(٥)

٢- أذكر/ي خمسة من التغيرات الفسيولوجية لعضلة القلب نتيجة للجهد البدني (القلب الرياضي)؟

(٥)

٣- اشرح/ي في نقاط آلية إنقباض العضلة أو ما يسمى نظرية الخيوط المنزلقة ؟

(٣)

١- أذكر/ي أنواع العضلات في جسم الإنسان مع الشرح وذكر مثال علي كل نوع؟

(٢)

٢- يقوم الدم بالدفاع عن الجسم بواسطة آليتين، أذكرهما؟

(٥)

٣- أذكر/ي وظائف الدم؟

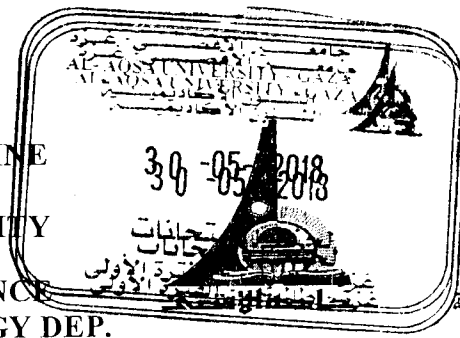
(٥)

٤- أذكر/ي وظائف الجهاز اللمفاوي؟

انتهت الأسئلة

مع تمنياتنا لكم بالتوفيق والنجاح

STATE OF PALESTINE
AL-AQSA UNIVERSITY
FACULTY OF SCIENCE
MEDICAL TECHNOLOGY DEP.



دولة فلسطين
جامعة الأقصى

كلية العلوم - قسم العلوم الطبية المخبرية

التاريخ: 30/5/2018
الزمن: ساعتان - فترة أولى
الاختبار النهائي لمساق: كيمياء حيوية طبية
محاضر المساق: د. محمود اسماعيل الحبيبي
رقم الطالب/ة:

الفصل الثاني 2017 / 2018

إسم الطالب/ة:

عدد الأسئلة: 6 أسئلة

ملاحظات : عدد الصفحات : 6 صفحات.

Answer Sheet

MCQ's						False/True		
1.	a	b	c	d	e	1.	T	F
2.	a	b	c	d	e	2.	T	F
3.	a	b	c	d	e	3.	T	F
4.	a	b	c	d	e	4.	T	F
5.	a	b	c	d	e	5.	T	F
6.	a	b	c	d	e	6.	T	F
7.	a	b	c	d	e	7.	T	F
8.	a	b	c	d	e	8.	T	F
9.	a	b	c	d	e	9.	T	F
10.	a	b	c	d	e	10.	T	F
11.	a	b	c	d	e	11.	T	F
12.	a	b	c	d	e	12.	T	F
13.	a	b	c	d	e	13.	T	F
14.	a	b	c	d	e	14.	T	F
15.	a	b	c	d	e	15.	T	F
16.	a	b	c	d	e	16.	T	F
17.	a	b	c	d	e	17.	T	F
18.	a	b	c	d	e	18.	T	F
19.	a	b	c	d	e	19.	T	F
20.	a	b	c	d	e	20.	T	F
21.	a	b	c	d	e	21.	T	F
22.	a	b	c	d	e	22.	T	F
23.	a	b	c	d	e	23.	T	F
24.	a	b	c	d	e	24.	T	F
25.	a	b	c	d	e	25.	T	F
26.	a	b	c	d	e	26.	T	F
27.	a	b	c	d	e	27.	T	F
28.	a	b	c	d	e	28.	T	F
29.	a	b	c	d	e	29.	T	F
30.	a	b	c	d	e	30.	T	F

Part I MCQ's (30 marks)

Choose the most correct answer

1. Amino acids are the building blocks of
 - a. nucleoproteins
 - b. proteins
 - c. lipoproteins
 - d. glycogen
2. Urine is normally
 - a. slightly acidic
 - b. slightly basic
 - c. neutral
 - d. strong acidic
3. Uric acid is the end product of catabolism
 - a. lipids
 - b. nucleic acids
 - c. proteins
 - d. carbohydrates
4. Normal level of blood glucose renal threshold..... Mg/dl
 - a. 80-120
 - b. 170-180
 - c. 70-110
 - d. 180
5. The following are disaccharides except
 - a. sucrose
 - b. maltose
 - c. lactose
 - d. galactose
6. The following is classified as a derived lipid
 - a. cholesterol
 - b. prostaglandins
 - c. triacylglycerol
 - d. both a and b
 - e. both a and c
7. Deficiency of vitamin A causes
 - a. Scurvy
 - b. Night blindness and Xerophthalmia
 - c. Pellagra
 - d Growth retardation
 - e. Both b and d are true
8. Human store excess proteins on the form of
 - a. glycogen
 - b. triacylglycerol
 - c. proteins
 - d. cholesterol
9. Albumin is involved in the control of
 - a. basal metabolic rate
 - b. osmotic pressure
 - c. body temperature
 - d. glucose level
10. High blood cholesterol level is involved in
 - a. atherosclerosis
 - b. renal stone formation
 - c. hepatic comma
 - d. vitamin D deficiency
11. The hormone that involved in the control of carbohydrates metabolism
 - a. serotonin
 - b. insulin
 - c. ceruloplasmin
 - d. selenium
12. Lipoprotein; that can enhance the development of atherosclerosis or coronary heart diseases (CHD)
 - a. High density lipoprotein (HDL)
 - b. Low density lipoprotein (LDL)
 - c. Very low density lipoprotein (vLDL)
 - d. Chylomicrons
13. The plasma protein that involved in blood clotting is
 - a. albumin
 - b. heparin
 - c. folic acid
 - d. fibrinogen
14. The optimum pH of pepsin enzyme is
 - a. 9
 - b. 2
 - c. 7
 - d. 4

15. The stress hormones included the following except

- a. adrenalin b. glucagon c. insulin d. thyroxin

16. All enzymes are

- a. lipids b. proteins c. carbohydrates d. nucleic acids

17. The best fuel to be used by the human cells is

- a. amino acids b. fatty acids c. nucleic acids d. glucose

18. Gluconeogenesis occurs in order to

- a. raise blood glucose level b. decrease blood sugar level
c. decrease blood glycogen level d. increase blood glycogen level

19. Disorder of carbohydrates metabolism causes

- a. ketoacidosis b. hypoxia c. ketonuria d. all of the above

20. Isoenzymes are

- a. enzymes with the same catalytic activity b. structurally the same
c. with diagnostic value d. both a and c are true

21. Sugar that can be given to patients who are unable to take food by mouth

- a. sucrose b. glucose c. galactose d. starch

22. Normal level of fasting blood sugar is mg/dl

- a. 200-210 b. up to 110 c. 70-110 d. 80-120

23. Hemoglobin is involved in

- a. transport of food b. control of water balance
c. control of iodine level d. transport of CO₂ and O₂

24. Human store carbohydrates on the form of

- a. glycogen b. triacylglycerol c. proteins d. cholesterol

25. Building blocks of nucleic acids are

- a. ribose sugar b. adenosine c. nucleotides. d. nucleosides

26. Sucrose is consists of

- a. glucose and galactose b. two glucose molecules
c. glucose and ribose d. glucose and fructose

27. Starch is a polymer of

- a. ribose b. fructose c. glucose d. galactose

28. The hormone that derived from tyrosine amino acid

- a. thyroxin b. insulin c. glucagon d. growth hormone

29. Many act as coenzymes

- a. vitamins b. hormones c. fatty acids d. amino acids

30. The following bonds are found in the structure of DNA

- a. β -N-glycosidic bond b. 3,5-phosphodiester bond c. Hydrogen bond
d. all of the above true e. only a and b are true

Part II False / True

(30 marks)

1. The kidney plays a role of gland as well as an excretory and regulatory organ.
2. Protein and glucose absolutely; should not appear in the urine.
3. Glycosuria occurs in people suffering from low renal threshold.
4. One way of combating heart disease and atherosclerosis to reduce the level of lipids in the bloodstream.
5. Keton bodies are the main fuel for many tissues during starvation and uncontrolled diabetes mellitus.
6. Nucleotides and amino acids are regulatory molecules but vitamins and hormones are structural molecules; inside the human body.
7. The aim of urine formation is excretion of the wastes and regulation of electrolytes balance only.
8. The net action of glucagon and adrenaline is to decrease blood glucose level.
9. Glycogen is a polymer of glucose units and found in the liver and muscles.
10. The rate of lipolysis and lipogenesis is not regulated by controlling the synthesis of cAMP.
11. Obesity is a risk factor for hypertension, cardiovascular diseases and diabetes mellitus type-2.
12. Prostaglandins can be used to induce labor but does not used in the treatment of hypertension.
13. Radiation and salts of heavy metals can cause proteins and nucleic acids denaturation.
14. High blood level of acid phosphatase (AP) enzyme is a marker of prostatic cancer.
15. Pancreatic diseases can be diagnosed with low plasma level of amylase enzyme.
16. Density of blood and urine is increased in diabetes mellitus due to presence of large amount of glucose.
17. Pernicious anemia can be caused by deficiency of Vitamin B₁₂ and Folic acid
18. The color of urine is caused by the presence of urobilinogen and urobiline.
19. Erythropoietine is a renal hormone concerned with the activation of red blood cells formation from the bone marrow.
20. An enzyme that found in the human saliva and able to hydrolyze starch is called beta amylase.

21. The peptide bond links two amino acids.
22. The rate of the biochemical reactions and cellular activity does not affected with pH and temperature.
23. Bacterial resistance to penicillin is caused by secretion of an enzyme penicillinase.
24. Hormones that involved in the control of calcium metabolism include calcitonin.
25. Byrimidine base thymine is involved in the structure of RNA.
26. Purine bases adenine and guanine; are joined to sugars through nitrogen atom number 9.
27. 7-Methylguanine is one of the additional heterocyclic bases in the structure of nucleic acids that function in oligonucleotide recognition and regulating the half-lives of RNA.
28. Allopurinol is a purine analog used in treatment of hyperuricemia, gout and leukemia.
29. Fate soluble vitamins included vitamin C.
30. Deficiency of Vitamin E is contributed with a type of infertility leading to fetal death.

Part III Short Questions (20 marks)

1. Fats are stored in the adipose tissues under the skin and around the internal organs for several functions; mention these functions?

2. Write the reactions of Krebs Cycle and calculate the number of ATP molecules produced from this cycle?

3- Discuss the importance of nucleotides for the human body?

4. Mention the hormones of the anterior lobe of the pituitary gland?

Questions Finished
Good Luck

التاريخ: 30-05-2018	الاختبار النهائي لمساق	الفصل الثاني: 2017-2018
الزمن: ساعتان	(الكيمياء الحيوية الطبية-MEDT2331)	محاضر المساق: د. إيداد القوقا
عدد الأسئلة: 4		عدد الأوراق: 6
الرقم الجامعي:		اسم الطالب:

Question One:

42 Marks

1. All of the following are considered "weak" interactions in proteins, except : A. Hydrogen bonds. B. Hydrophobic interactions. C. Van der Waals forces. D. Peptide bonds.	2. Which of the following best represents the backbone arrangement of two peptide bonds? A. $\text{C}\alpha\text{---N---C}\alpha\text{---C---C}\alpha\text{---N---C}\alpha\text{---C}$. B. $\text{C}\alpha\text{---N---C---C---N---C}\alpha$. C. $\text{C---N---C}\alpha\text{---C}\alpha\text{---C---N}$. D. $\text{C}\alpha\text{---C---N---C}\alpha\text{---C---N}$.
3. Which vitamin is derived from cholesterol? A. A B. B12 C. D D. E	4. In competitive inhibition, an inhibitor: A. Binds at several different sites on an enzyme. B. Binds covalently to the enzyme. C. Binds reversibly at the active site. D. Lowers the characteristic V_{max} of the enzyme.
5. Roughly how many amino acids are there in one turn of an α helix? A. 2.8 B. 3.6 C. 4.2 D. 10	6. Which among the following is both glucogenic and ketogenic? A. Isoleucine B. Leucine C. Lysine D. Histidine
7. D-Alanine and L-Alanine are known as: A. Anomers. B. Enantiomers. C. Epimers. D. Polymer.	8. Which of the following is an epimeric pair? A. D-Glucose and D-Galactose. B. D-Glucose and L-Glucose. C. D-Glucose and D-mannose. D. Both A and C.
9. Which of the following amino acids can form hydrogen bonds with their side (R) groups? A. Asparagine. B. Aspartic acid. C. Glutamine. D. All of these.	10. Which of the following amino acid contain an imidazolium moiety? A. Alanine. B. Valine. C. Cysteine. D. Histidine.
11. Protein fluorescence arises primarily from which residue? A. Arginine. B. Tryptophan. C. Tyrosine. D. Phenylalanine.	12. D-amino acid would interrupt an α helix made of L-amino acids. Another naturally occurring hindrance to the formation of an α helix is the presence of: A. A negatively charged Arg residue. B. A nonpolar residue near the carboxyl terminus. C. A positively charged Lys residue. D. A Pro residue.

<p>13. In the peptide chain, the alpha helix is stabilized by:</p> <p>A. Sulfur linkage. B. Amide group. C. Carboxyl group. D. Hydrogen bonding.</p>	<p>14. If $pK_1 = 2.34$ and $pK_2 = 9.60$, then the isoelectric point pI is:</p> <p>A. 5.87 B. 5.97 C. 3.67 D. 11.94</p>
<p>15. Which of the following is an imino acid?</p> <p>A. Alanine. B. Glycine. C. Proline. D. Serine.</p>	<p>16. When the pH of a solution of a weak acid, HA, is equal to the pK_a, the ratio of concentrations of the salt and the acid ($[A^-]/[HA]$) is which one of the following?</p> <p>A. 0 B. 1 C. 2 D. 3</p>
<p>17. Which one of the following is not among the six internationally accepted classes of enzymes?</p> <p>A. Hydrolases. B. Oxidoreductases. C. Polymerases. D. Transferases.</p>	<p>18. At physiologic pH (7.4), a hexapeptide—<u>DASEVR</u>—will contain a net charge of which one of the following?</p> <p>A. -2 B. -1 C. 0 D. +1</p>
<p>19. Which of the following is an essential amino acid?</p> <p>A. Tryptophan. B. Methionine. C. Lysine. D. All of these.</p>	<p>20. The kinetic effect of purely competitive inhibitor of an enzyme</p> <p>A. Increases apparent K_m without affecting V_{max}. B. Decreases apparent K_m without affecting V_{max}. C. Increases V_{max} without affecting apparent K_m. D. Decreases V_{max} without affecting apparent K_m.</p>
<p>21. A person with Type 1 diabetes ran out of her prescription insulin and has not been able to inject insulin for the past 3 days. An overproduction of which of the following could cause a metabolic acidosis?</p> <p>A. Hemoglobin. B. Ketone bodies. C. HCl. D. Bicarbonate.</p>	<p>22. The conversion of 1 mol of pyruvate to 3 mol of CO_2 via pyruvate dehydrogenase and the citric acid cycle also yields _____ mol of NADH, _____ mol of $FADH_2$, and _____ mol of ATP (or GTP).</p> <p>A. 2; 2; 2 B. 3; 1; 1 C. 4; 1; 1 D. 4; 2; 1</p>
<p>23. Which of the following is not an essential amino acid?</p> <p>A. Aspartic acid. B. Glutamic acid. C. Glycine.. D. All of these</p>	<p>24. The following amino acids are both glucogenic as well as ketogenic except</p> <p>A. Isoleucine. B. Leucine. C. Tyrosine. D. Phenylalanine.</p>

<p>25. Which of the following statements about Michaelis-Menten kinetics are correct?</p> <p>A. A high Michaelis constant (K_m) indicates a high affinity of an enzyme for its substrate.</p> <p>B. A low Michaelis constant (K_m) indicates a high affinity of an enzyme for its substrate.</p> <p>C. The Michaelis constant (K_m) of an enzyme increases when the enzyme concentration is increased.</p> <p>D. The Michaelis constant (K_m) of an enzyme is unchanged when the enzyme concentration is increased.</p>	<p>26. An allosteric enzyme influences the enzyme activity by</p> <p>A. Competing for the catalytic site with the substrate.</p> <p>B. Changing the specificity of the enzyme for the substrate.</p> <p>C. Changing the conformation of the enzyme by binding to a site other than catalytic site.</p> <p>D. Changing the nature of the products formed.</p>
<p>27. Substrate-level phosphorylation occurs in glycolysis in the reaction catalyzed by _____ and belongs to _____ class of enzymes.</p> <p>A. Phosphoglycerate kinase; transferase.</p> <p>B. Hexokinase; transferase.</p> <p>C. Phosphofructokinase; transferase.</p> <p>D. Glyceraldehyde-3-phosphate dehydrogenase; oxidoreductase.</p>	<p>28. Entry of acetyl-CoA into the citric acid cycle is decreased when:</p> <p>A. [AMP] is high.</p> <p>B. The ratio of [ATP]/[ADP] is low.</p> <p>C. The ratio of [ATP]/[ADP] is high.</p> <p>D. The ratio of [NAD⁺]/[NADH] is high.</p>
<p>29. Which of the following is not an intermediate of the citric acid cycle?</p> <p>A. Acetyl-CoA.</p> <p>B. Citrate</p> <p>C. Oxaloacetate.</p> <p>D. Succinyl-CoA.</p>	<p>30. All of the oxidative steps of the citric acid cycle are linked to the reduction of NAD⁺ except the reaction catalyzed by:</p> <p>A. Isocitrate dehydrogenase.</p> <p>B. Malate dehydrogenase.</p> <p>C. Succinate dehydrogenase.</p> <p>D. The alpha-ketoglutarate dehydrogenase complex.</p>
<p>31. Which of the below is not required for the oxidative decarboxylation of pyruvate to form acetyl-CoA?</p> <p>A. ATP.</p> <p>B. CoA-SH.</p> <p>C. FAD & NAD⁺.</p> <p>D. Lipoic acid.</p>	<p>32. Lineweaver – Burk double reciprocal plot is related to</p> <p>A. Substrate concentration.</p> <p>B. Enzyme activity.</p> <p>C. Temperature.</p> <p>D. Both A and B.</p>
<p>33. Dietary deficiency of thiamin inhibits the activity of the enzyme:</p> <p>A. Pyruvate kinase.</p> <p>B. Pyruvate dehydrogenase.</p> <p>C. Phosphofructokinase.</p> <p>D. Enolase.</p>	<p>34. A specific fructokinase present in liver has a very high affinity for its substrate because</p> <p>A. K_m for fructose is very high.</p> <p>B. K_m for fructose is very low.</p> <p>C. Activity is affected by fasting.</p> <p>D. Activity is affected by insulin.</p>
<p>35. All are allosteric effectors of pyruvate kinase except:</p> <p>A. Pyruvate.</p> <p>B. AMP or ATP.</p> <p>C. Acetyl-CoA.</p> <p>D. Fructose-1,6-bisphosphate.</p>	<p>36. The step that commits glucose to glycolysis is catalyzed by:</p> <p>A. Hexokinase.</p> <p>B. Phosphoglucose isomerase.</p> <p>C. Phosphofructokinase-1 (PFK-1).</p> <p>D. Glucokinase.</p>

<p>37. All of the following enzymes of glycolysis are allosterically regulated EXCEPT:</p> <p>A. Phosphofructokinase-1. B. Glyceraldehyde-3-phosphate dehydrogenase. C. Hexokinase. D. Pyruvate kinase.</p>	<p>38. The activity of the glycolytic enzyme phosphofructokinase-1 is increased by which one of the following molecules?</p> <p>A. Fructose-1,6-bisphosphate. B. Fructose-6-phosphate. C. Fructose-2,6-bisphosphate. D. ATP.</p>
<p>39. Glyceraldehyde-3-phosphate dehydrogenase belongs to what class of enzymes?</p> <p>A. Oxidoreductases. B. Isomerases. C. Transferases. D. Hydrolases.</p>	<p>40. The coenzyme not involved in the formation of acetyl-CoA from pyruvate is</p> <p>A. TPP B. Biotin C. NAD D. FAD</p>
<p>41. Which of the following compounds cannot serve as the starting material for the synthesis of glucose via gluconeogenesis?</p> <p>A. Acetate. B. Glycerol. C. Lactate. D. Oxaloacetate or α-ketoglutarate.</p>	<p>42. Phosphofructokinase key enzyme in glycolysis is inhibited by</p> <p>A. Citrate and ATP. B. AMP. C. ADP. D. TMP.</p>

Question Two:

20 Marks

A. Match each term in the left column with the best descriptions in the right column. Use each item once. 5 points (5 pts)

- | | |
|----------------------------------|---|
| ___ 1. Supersecondary structures | A. Amphoteric compound that can behave either as an acid, or a base. |
| ___ 2. Gluconeogenesis | B. Aggregates of α -helical and β -sheet structures. |
| ___ 3. Mutarotation | C. Linear amino acid sequence. |
| ___ 4. Tertiary structure | D. Stereoisomers that are not mirror images of one another and are non-superimposable on one another. |
| ___ 5. Epimers | E. A metabolic pathway that results in the generation of glucose from non-carbohydrate precursors. |
| ___ 6. Isoelectric point | F. Interconversion of α - and β - anomers. |
| ___ 7. Quaternary structure | G. A stereoisomer that differs in configuration at a single carbon atom. |
| ___ 8. Primary structure | H. The pH at which a protein has no net electrical charge or is electrically neutral. |
| ___ 9. Ampholyte | I. Association of multiple protein subunits. |
| ___ 10. Diastereomers | J. The overall three-dimensional structure of a polypeptide. |

B. List the five major groupings of amino acids? Then, what are the characteristic features of peptide bond? (5 pts)

C. Write short notes on the followings: (5 pts)

1. Lectin:
2. Amyloid disease & Prions:
3. Ketone bodies:
4. Diabetes mellitus Type I & Type II:
5. Phenylketonuria:

Question Three:

18 Marks

-
- A. Explain the biochemical basis of the human metabolic disorder called lactose intolerance. (6pts)**
- B. List the six major classes of enzymes and explain how the enzymes catalyze the reaction? (6 pts)**
- C. What are the factors affecting enzyme activity? How enzymatic activity can be regulated? (6 pts)**

Question Four:**20 Marks**

- A. Which of the enzymes represents a major regulation point in glycolysis? Which catalyzes a reaction in which ATP is produced? Which catalyzes a reaction in which NADH is produced? (4 pts)
- B. What is the cost (in ATP equivalents) of transforming glucose to pyruvate via glycolysis and back again to glucose via gluconeogenesis? (4pts)
- C. Mammalian liver can carry out gluconeogenesis using oxaloacetate as the starting material. Would the operation of the citric acid cycle be affected by extensive use of oxaloacetate for gluconeogenesis? Explain your answer. (4 pts)
- D. Citric Acid cycle is amphibolic. Explain this statement and give examples (4 pts)
- E. What are the biological functions of the pentose phosphate pathway? (4 pts)

End of Questions-Good Luck

نسخة امتحانات تربية - الشؤون الأكاديمية

STATE OF PALESTINE

AL-AQSA UNIVERSITY



دولة فلسطين

جامعة الأقصى

Faculty of science- Lab. Med. Sc. Dept.

كلية العلوم - قسم العلوم الطبية المخبرية

التاريخ: 2/6/2018
الزمن: ساعتان فترة ثلاثة
عدد الأسئلة: 5 أسئلة

الاختبار النهائي لمساق: كيمياء
سريرية ٢ (MEDT3313)

الفصل الثاني 2017 / 2018م
محاضر المساق:
د. محمود اسماعيل الحبيبي

رقم الطالب/ة:

إسم الطالب/ة:

Answer Sheet

MCQ's					False/True	
1.	a	b	c	d	e	1. T F
2.	a	b	c	d	e	2. T F
3.	a	b	c	d	e	3. T F
4.	a	b	c	d	e	4. T F
5.	a	b	c	d	e	5. T F
6.	a	b	c	d	e	6. T F
7.	a	b	c	d	e	7. T F
8.	a	b	c	d	e	8. T F
9.	a	b	c	d	e	9. T F
10.	a	b	c	d	e	10. T F
11.	a	b	c	d	e	11. T F
12.	a	b	c	d	e	12. T F
13.	a	b	c	d	e	13. T F
14.	a	b	c	d	e	14. T F
15.	a	b	c	d	e	15. T F
16.	a	b	c	d	e	16. T F
17.	a	b	c	d	e	17. T F
18.	a	b	c	d	e	18. T F
19.	a	b	c	d	e	19. T F
20.	a	b	c	d	e	20. T F
21.	a	b	c	d	e	21. T F
22.	a	b	c	d	e	22. T F
23.	a	b	c	d	e	23. T F
24.	a	b	c	d	e	24. T F
25.	a	b	c	d	e	25. T F

Part I short questions

(15 marks, 5 each)

Answer the following questions

1. For assessment of the iron status for individuals; what are the serum variables that must be measured?

2. Explain how can you differentiate between respiratory and metabolic alkalosis by using the results of laboratory tests?

3. Discuss the clinical significance of tumor markers measurement?

Part II MCQs

(12.5 marks, 0.5each)

Choose the most correct answer

1. Several of these viruses are associated with sexually transmitted diseases and may be indicators of increased risk of developing of a genital cancer

- a. Human immunodeficiency viruses (HIV)
- b. Human papilloma viruses (HPV)
- c. Human rubella viruses (HRV)
- d. Non of the above

2. Calcitonin (hCT) is a tumor marker for

- a. hyperthyroidism
- b. parathyroid gland cancer
- c. medullary carcinoma of the adrenal gland
- d. medullary carcinoma of the thyroid gland

3. Factors affecting the blood level of an administered drug include the following except

- a. Absorption
- b. Reabsorption
- c. Metabolism
- d. distribution of drug in tissues
- e. Biotransformation of the drug in the liver.

4. Considering resolution factor (Rf); all are true except

- a. Always equal a fraction
- b. Calculated as a distance of the solvent over the distance of the solute.
- c. Each compound has its own Rf value.
- d. depends on the ionic strength and solvent type.

5. Therapeutic levels of lithium is in the range of

- a. 1.3-3mmol/L
- b. 0.3 – 1.3 mmol/L
- c. 0.3 – 2 mmol/L
- d. ≥ 0.3 mmol/L

6. Considering barbiturates drugs all are true except

- a. general depressants
- b. used to prevent seizures
- c. taken to induce sleep
- d. with different acting period
- e. non of the above

7. The compound that facilitate the transport of fatty acids from plasma to the mitochondria

- a. Keratin
- b. albumin
- c. carnitine
- d. calmodulin

8. Odor of urine in urea cycle defects is

- a. Ammonia
- b. Musty
- c. Acetone
- d. Maple Syrup

9. Essential pentosuria is represented in the presence of in urine

- a. Ribose
- b. Lactose
- c. Fructose
- d. Glucose
- e. Xylulose

10. Is due to renal transport defect of sulfur containing amino acid; is the most common cause of stones in children

- a. Homocystinuria b. Cystinuria c. Tyrosinemia d. Glycinuria e. PKU

11. Causes of hypercalcemia are the following except which one?

- a. malignant diseases of bone b. Hyperparathyroidism
c. Vitamin d toxicity d. Chronic renal failure
e. renal dialysis and transplant

12. During determination of total CO₂ level in the serum the substance that first added to convert all CO₂ into bicarbonate

- a. Acid b. Base c. salt d. NADH

13. Serum chloride level is markedly higher than chloride level in the following body fluid

- a. CSF b. urine c. Sweat d. Pleural e. Synovial

14. One of the following interferes with sodium and potassium determination

- a. Severe dehydration b. Sweating
c. DKA d. Hemolysis

15. Anion gap can be calculated by determination the following except one

- a. sodium b. potassium c. calcium d. chloride e. bicarbonate

16. Amylase result vary; and does not depend on one of the following

- a. time of sample collection b. age c. health history
d. gender e. method used

17. Measurement of urinary amylase is valuable because

- a. serum amylase is slowly cleared by the kidney
b. serum amylase is rapidly cleared by the kidney
c. some types of renal damage leads to an increase in serum amylase.
d. amylase is water soluble compound and has a small molecular weight

18. Alkaline phosphatase is decreased due to the following reasons except one

- a. Hypophosphatasia b. Pernicious anemia
c. Liver diseases d. Hypothyroidism

19. Diagnosis of muscular disorders can be carried out by determination of the following enzymes except one

- a. CK b. AST c. ALD d. LDH e. HDL

20. An enzyme its deficiency causes fatal hyperammonemia

- a. Ornithine Carbaminotransferase b. Ornithine Carbaminokinase
c. Aldolase d. Ammonia transferase.

21. When serum alanine aminotransferase (ALT) is determined another enzyme must be involved in the reagent; which one

- a. ALP b. LDH c. AST d. D6PD e. LDL

22. When aspartate aminotransferase is measured pre incubation of serum withbefore adding the substrate is necessary for the removal of any endogenous pyruvate to prevent ALT activity.

- a. ALP b. ALT c. AST d. LDH e. LDL

23. The ratio of LDH₁: LDH₂ becomes flipped in which situation of the following

- a. liver diseases b. lung diseases c. hemolysis d. renal diseases e. Non true

24. The predominant form of CK isoenzyme in the normal serum is

- a. MM b. MB c. BB d. MH e. HB

25. In Myocardial infarction; MB forms.....of the total CK activity in the serum.

- a. <3% b. >3% c. <6% d. >6% e. 6%

Part III False/True

(12.5 marks, 0.5each)

1. Radioimmunoassay (RIA) for urinary gonadotropin peptide has shown that about one third of women with ovarian, endometrial or cervical cancers had elevated urine of this marker.
2. Human chorionic gonadotropins can be assays using monoclonal antibodies directed toward either beta or intact molecule.
3. The quantity of tumor marker should not indicate how much tumor was present or to what stage the tumor has progressed.
4. Measurement of serum drug level enables the physician to adjust and optimize the dosage on an individual basis.
5. Fluorophors are molecules that fluoresce when irradiated with ultraviolet light.
6. Chromatography is represented on the form of separation and adsorption; by means of mobile and stationary phases.
7. Salicylate appears slightly in the serum of individuals who are not receiving the drug.
8. Serum lithium determination by flame emission required dilution.
9. Secondary aminoaciduria is an excretion of amino acids in the urine in excess as the result of a genetic defect lake of a crucial enzyme.
10. An abnormal pattern of thin layer chromatography of amino acids in urine should be confirmed by qualitative plasma amino acids analysis.

11. Nonketotic hyperglycinemia can be diagnosed by measuring of CSF proteins.
12. Many of the β -oxidation defects are responsive to treatment.
13. Concentration of free carnitine in the healthy individuals is greater than acyl carnitine.
14. The diagnosis of hereditary diseases at the molecular level has become more feasible; so it is the first line of testing in the clinical setting.
15. The odor of urine must be tested by the technician during diagnosis of the genetic diseases.
16. Urine is used in screening of metabolic diseases because the abnormal metabolites are concentrated in the urine and excreted.
17. Impairment of heme synthesis results in hyperironemia.
18. Assessment of iodine nutritional status is carried out by determination of T4 level in the serum.
19. During determination of serum phosphate level trichloroacetic acid is used to precipitate serum calcium to prevent interfering.
20. In a congenital disease Cystic Fibrosis sweat chloride increase so it is usually requested to screen for the disease in children.
21. Hemolysis and centrifugation are increase potassium level so; they must be avoided.
22. Genetic disease may be due to deficiency of more than one enzyme.
23. Female breast cancer that has metastasized to bone causes an increase level of acid phosphatase enzyme.
24. In cardiac muscle cells the major portion of CK isoenzymes is CK-MB.
25. During measurement of mucopolysaccharides; urine samples will give a false positive results if they are not performed at room temperature.

Questions Finished –Good Luck