

CELL BIOLOGY ARCHIVES

MIDTERM & FINEL !!!!

إعداد وتجميع : لجنة الطب والجراحة



THE MIDTERM EXAM

1. Which of the following will enter directly the cell membrane :

insulin

glucagon

histamine

testosterone*

2. which of the following is not 2nd messenger :

cAMP

cGMP

cATP*

3. In which receptor does dimer form?

Answer: receptor tyrosine kinase*

4. Process in which signal converted to response..... بما معناه

Signal transduction*

signal translation

signal

5. Inflammation will release hormone locally transferring...?

paracrine

6. peripheral proteins are located?

on the extracellular side only

on the cytoplasmic side only

mainly on the cytoplasmic side

7. which of The following is correct about H&E

Answer: hematoxylin stains acidic components blue*

8. which of the following is wrong?

Trypan blue\mast cells*

Leishman\blood films

Trichrome\collagen fibers

Silver stain\nerve cells



8. Immortalized cell line means?

Answer: **Proliferate indefinitely** *

9. Which about cell membrane is wrong?

molecular bilayer

fluid sheet like arranged in structure

the answer is maybe the 2nd choice Im not sure

10. low resistance intercellular junction that allows passage of depolarized substances in... in intercalated disc? (from choices)

electrical synapse

chemical synapse

11. protein subunit forming the gap junction?

Connexin

12. proteins junction in macula adherens?

Desmoglein XXX

Cadherin

13. Responsible for blood brain barrier is?

Answer: **Tight junction**

14. abnormality of causes leaky gut syndrome?

Answer: **Zonula occludens**

15. What adhesion molecules are in Tight junction?

Answer: Occludin and claudin

16. All of the following are CAMs except?

Cadherin

Selectin

Integrin

Catenin

Actin*

17. Responsible of high resolution in LM ?

A) Condenser lens B) Fine focus C) **Objective lens** D) Coarse focus

18. 1 millimeter equals?

Answer: **1000 micrometer**



19. Resolution power of healthy naked eye?

0.2 mm

20. Function of ECM?

- A) Fill the space between organelles
- B) Deposit sheet like under the basal lamina
- C) To connect with epithelial tissue
- D) Can have hard consistency like bones

21. The idea of phase contrast microscope?

Answer: **Difference of refractive indices**

22. All of the following are function of glycocalyx except?

Protection

Adhesion

Receptor

Lipid synthesis

23. Fluid mosaic model?

Cholesterol floating like icebergs

Integral proteins floating like icebergs

Lipid are in place

24. White blood cell engulfs a bacteria?

Answer: **phagocytosis**

25. When the ligand bind to the ligand site, the hydrophilic bind to -----

,and the hydrophobic bind to -----?

26. Most commonly used stain in the electron microscope?

Answer: **osmium tetroxide**

27. The substance that used in clearing?

Answer: **XYLOL**

28. One of the following is false about confocal laser microscope?

Answer: **Is used a beam of electron as source of light**



EXAM 2

1- The correct match:

- A.anchoring junction → allow flow of current
- B.tight junction → chemical synapse
- C.gap junction → blood brain barrier
- D.zonula occludens → prevent flow of material between the cells

Answer : D

2- Which of the following is true about freezing technique:

- A.isolating the cell to study under control condition
- B.useful in histochemical stain
- C. It include fixation
- D.can preserve for long time

Answer : b

3- Which of the following is true about the metachromatic stain:

- A- Stain which gives the tissue new color different from that of the stain
- B- stain elastic fiber brown
- C- Stain nerve cell brown

Answer : A

4- The true arrangement in centrifugation:

- A.ribosome ,nucleus, microcosms, mitochondria
- B.mitochondria, microcosms, nucleus, ribosome
- C.nucleus,mitochondria,microcosms,ribosome

Answer : c

5- The resolution power of LM:

- A- 0.2 nanometer
- B- 0.2 micrometer
- C- 0.2 millimeter
- D- 10 nanometer

Answer : b

6- Fluorescent in situ hybridization technique is used for:

- A.isolating cell components
- B.rapid technique for diagnosis of tumors
- C.purify nucleic acid fragments
- D.localize the site of the genes on chromosomes

Answer : D



7- Microscope using for studying living cell :

- A- phase contrast microscope
- B- light microscope
- C- electron microscope
- D- confocal microscope

Answer : A

8- When ligand bind to G protein coupled receptor:

- A. activate G protein
- B. Change cAMP to ATP
- C. Inactive G protein

Answer : a

9- Protein form the macula adherence :

- A- cadherins
- B-desmoglein
- C- catenin
- D-integrins

Answer : b

10- The correct match:

- A. neurotransmitter → paracrine
- B. long distance → endocrine
- C. short distance → intracrine
- D. cancer activation → gap junction

Answer : B

11- The second messenger:

- A. Na ions
- B. claudins
- C. CAMs
- D. cAMP

Answer : D

12- Not composition of CAMs:

- A. extracellular domain
- B. transmembrane domain
- C. nuclear domain
- D. cytoplasmic domain



Answer : c

13- The three primary germ layer (ectoderm ,mesoderm , endoderm) come from :

A- unipotant stem cell

B- inner cell mass

C- outer cell mass

Answer : b

14- All the following is true about adult stem cells expect:

A.they are multipotent

B.have ability to self renew

C.undifferntiated cell

D.derived from blastocyst

Answer : D

15- What the differance between cillia & flagella?

A- length & number

B-lenght & width

C- Width & number

D-None of the above

Answer : a

16- All of the following are components of nuclear envelope except:

A.internal nuclear membrane

B.external nuclear membrane

C.chromatin

D.lamina densa

Answer : c

17- Stem cell that give us all of the cell in the our body :

A- pluripotent

B- unipotent

C- multipotent

Answer : A

18- All the following is true about nuclear poers except:

A.regulate exchanges between nucleus and cytoplasm

B.contain cytoplasmic basket

C.their number grow if it is necessary

D.ensure selective transport for big molecules

Answer : B



19- Which of these organelles responsible for absorption in kidney and intestine ?

- A- flagella
- B- microvilli
- C- cilia

Answer : b

20- Which of the following provide permanent fixtures of the cell?

- A- microfilaments
- B- microtubules
- C- intermediate filaments
- D. centriole

Answer : C

21- Cilia and flagella:

- A. 9 double microtubules and 2 in the center
- B. 2 double microtubules and 9 in the center
- C. 11 double microtubules and 2 in the center

Answer : A

22- Which of the following composed of protein actin?

- A- microfilament
- B- microtubule
- C- intermediate filament
- D- microvilli

Answer : A

23- The correct match

- A. ribosome → where fatty acids are metabolised
- B. lysosome → pseudopodia
- C. nucleus → source of energy

Answer : B

24- All the following are true about cytoskeleton expect:

- A. not stable
- B. contain microtubule
- C. contain microfilament
- D. contain intermediate tubule
- E. contain intermediate filament



Answer : D

25- Stem cells:

- A.they finish quickly
- B.can make copies of it self and make specialized cell
- C.can't give mature cell
- D.there is one type of stem cell

Answer : B

26- Piece of DNA used to insert an important DNA fragment into it :

- A- vector
- B- gene
- C- chromosome
- D- centriole

Answer : A

27- Which of these come from umbilical cord ?

- A.adult stem cell
- B.hematobiotic stem cell
- C.nom of the above

Answer : B

28- The true arrangement from thinner to the thickest:

- A- DNA, histone, nucleosome, chromosome
- B- DNA, Nucleosome , chromosome , histone
- C- chromosome, histone , nucleosome , DNA
- D- nucleosome, DNA, histone, chromosome

Answer : a

29- Where calcium stored?

- A- rough endoplasmic reticulum
- B- smooth ER
- C- centerioles
- D- golgi apparatus

Answer : B

30- Which of the following membrane bounding organelles?

- A- ribozome
- B- the cytoskeleton
- C- peroxisomes



D-cilia

Answer : C

EXAM 2

1-Which of the following is the correct order according to thickness :

A-DNA-histone-nucleosom-chromosome

B-DNA-nucleosom-histone-chromosome Chistone-DNA-nucleosom-chromosome

D-DNA-histone-chromosome-nucleosom

Answer : A

2-All of the following are true regarding a composition nuclear envelop except for one of its components :

الجواب chromatin

3-What is not true of mitochondria synthesis:

outer membrane which encapsulates fluid-filled matrix

4-The way in which the two materials move together in the same direction :

Answer : symport

5-Any of them is an example inclusions :

Answer : crystal

6-It has a process permanent fixture :

Answer : (intermediate filaments)

7) Any of them in which actin :

Answer : (microfilament)

8-Which of the following options produces substances that benefit the cell :

A-ribosomes

B-RER



C-SER

D-All of them

Answer : D

9-Which of these matching is correct :

A-Facilitated diffusion-non polar molecules

B-Facilitated diffusion-polar molecules C-Difficult diffusion-polar molecules D-Difficult diffusion-non polar molecules

Answer : B

10-A piece of DNA used to insert an important DNA fragment it :

Answer : vector

11-None of enzymes is the cutting enzyme:

Answer : (Restriction enzymes)

12-Which of the following sentences is true:

A-Hematoxylin=stains nucleus blue

B-Freezing=useful for histochemical student

C-A+B

D-Non of them

Answer : C

13-The thing that results from the cord blood stem cells:

Answer : hematopoietic stem cells

14- 9+2 Microtubule "axoneme" :

Answer : cilium

15-Part of the LH responsible for resolution :

Answer : (objective)

16-Inflammation response:

A- Juxtacrine

B-Paracrine



C-Synapse

D-autocrine

Answer : B

17-Protein form the macula adherence:

Answer : (desmoglein)

18- 2ad messenger:

Answer : Camp

19-NOT composition of CAMs:

Answer : Nuclear domain

20-The false is about adult stem cells :

Answer : Derived from blastocyst

21-junction prevent flow of material between cell :

Answer : Zonula occludenes

22-Break down damaged organelles:

Answer : Autophagy

23-Which of the following gives us the three layers of the fetus ectoderm;mesoderm;endoderm:

Answer : Inner cell mass

24-When the liganded bind to receptor:

Answer : G activated

25-stem cells that give us all of the cell in our body:

Answer : Pluripotent

26-If you had a red blood cell and put it solution and it would be a god lysis is the solution he is:

A-Hypertonic B-Hyposmotic C-isotonic D-0.1%NaCl

Answer : (D)

27-What the difference between cilia&flagella:

A-Length & number

B-Length & width

C-Width & number



D-Non of them

Answer : (A)

28-Production & export of milk Golgi apparatus:

A-RER

B-SER

C-Vesicles

D-All of the above

Answer : (D)

29-What molecules can get through bilayer membrane directly:

A-NH₃

B-CO₂&O₂

C-Amino acids

Answer : (B)

30-What is the transport that doesn't move things out :

A-Exocytosis

B-Phagocytosis

C-antiport transport

D-symport transport

Answer : (B)

31-All of these external factor except :

Answer : Cyclins&kinases

32-Which is no source of genetic variation :

A-DNA replication

B-fertilization

D-Crossing over

C-independent alignment

Answer : (A)

33-Light microscope resolution power:

Answer : 0.2 micrometer



34-Karyotyping depends at all of the following except :

A-number of chromosomes

B-size of chromosomes

C-G banding

D-Genetic crossing over

E-shape of the chromosome

Answer : (A)

35-At which stage the chromosomes are more visible :

Answer : (metaphase)

36-the process of making RNA from DNA is called:

Answer : (Transcription)

37-What happens in meiosis 1:

Answer : (2 daughter cells with 23 double chromosomes)

38-Which statement is wrong

(Large and small molecules are tightly controlled by the nuclear transport)

39-What is the organelles that manufacture new product:

Answer : (ribosome-rough endoplasmic reticulum-smooth endoplasmic reticulum)

40-The NaCl 0.9% is isotonic solution, What is the solution of the sea water:

Answer : (Hypertonic solution)

41-Regarding centrifugation from first to separate:

Answer : (nucleus-mitochondria-mitoplasts-ribosomes)

42-The resolving power in light microscope depends on:

Answer : (objective lenses)

43-Which microscope use special lamp to emit ultraviolet rays :

Answer : (Fluorescence microscope)



44-stain which give the tissue new color different from that of the stain :

Answer : (metachromatic stain)

45-The idea for phase constrant microscope:

Answer : (is to view objects light and dark based on their different refractives indices)

46-the resulation power for EM is:

Answer : 0.2 nanometer

47-The microscope which uses a special lamb is :

Answer : (Fluoresense microscope)

48-one of the following is incorrect regarding the EM:

Answer : It uses beams of light

49-Insulin hormone is an example of :

Answer : (Endocrine)

50-Bone morrow stem cells are considered to be :

A-multipotent

B-unipotent

C-totipotent

D-oligopotent

Answer : (A)

51-Technique used to identify ,quantity and purify nucleic acid

Answer : (DNA electrophoresis)

EXAM 3

1- The type of stem cell in the umbilical cord blood is ?

- a-multipotent
- b-nullipotent
- c-pluripotent
- d-oligopotent
- e-unipotent

answer : a

2-The longest and most complicated stage in meiosis is :

- a-Anaphase I
- b-Telophase I
- c- Prophase I
- d-Metaphase I

Answer : c

3-B-lymphocyte is ?

- a- Multipotent
- b-Nullipotent
- c- Oligopotent
- d-Unipotent
- e-Pluripotent

Answer : d

4-One of the following is the make up structural unit of RNA and DNA ?

- a- Nucleotides
- b-TRNA
- c- Histones

Answer : a

3-One of the following is true about peroxisomes ?

- a-Digests unwanted cell parts and other wastes
- b-is a membrane-bound organelle which is present in all plant and fungal cells and some protist
- c- Where hydrogen peroxide is detoxified
- d-contains digestive enzymes

answer: c

4-Circular pieces of DNA..... ?

- a-plasmid
- b-virus
- c-RNA
- d-bacteria

answer : a

5-The stage where chromatin is separated in meiosis is ? a

- a - telophase 2
- b-anaphase 1
- c- metaphase 1
- d-anaphase 2
- e-telophase 1

answer : d

6-Where the calcium is found ?

- a-rough endoplasmic reticulum
- b-smooth endoplasmic reticulum
- c-nucleus
- d-cytoplasm
- e-nucleolus

answer : b



7-One of the following is wrong about intermediatetubules ?

- a-Bigger than microfilaments but smaller than microtubules
- b-provides tension bearing Permanent fixtures of cells
- c-Present only in animal cells of certain tissues
- d-Forms organelles such as cilia & flagella & centrioles.

Answer : d

8-One of the following is wrong about the nucleoplasm ?

- a-Highly viscous liquid that surrounds the chromosomes and nucleolus
- b-has three major elements; the -cytosol -organelles and -inclusions
- c-nucleotides and enzymes are dissolved in the nucleoplasm

answer : b

9- All of the following are part of the endomembrane system exept:

- a-The nucleus
- b-golgi complex
- c-transport vesicles
- d-cytoskeleton
- e-the endoplasmic reticulum

answer: d

10-Organelle that sort and package protein ?

- a-Golgi complex
- b-rough ER
- c-smooth ER
- d-transport vacule
- e-mitochondria

answer : a



11-If we need more protein , we have to Increase?

a-Golgi complex

b-rough ER

c-smooth ER

d-mitochondria

e-nucleus

answer : b

12-All of the following is content of the nuclear envelope except ?

a-Cromatin

b-perinuclear space

c-external (outer) nuclear membrane

d-internal (inner) nuclear membrane

e-nuclear pores

answer : a

13-The nuclear envelope starts to disappear in which stage ?

a-Metaphase

b-Anaphase

c-Prophase

d-Telophase

e-interphase

answer : c

14-Gene therapy is done by ?

a-Cloning the fault gene

b-Inserting the functional gene

c-investigate what particular genes do and how they work

d-Selection & screening of colonies with desired DNA

answer : b



15-Which one has the least tendency to differentiate ?

- a-Pluripotent
- b-Multipotent
- c-Oligopotent
- d-Unipotent
- e-Nullipotent

answer : d

16-Which of the following is wrong about “beads on string” chromatin ?

- a-Appears in interphase
- b- Made of repeating unit of nucleobase
- c-DNA is wrapped twice

Answer : b

17-Hematopoietic stem cell considered as ?

- a-Pluripotent
- b- Multipotent
- c -Oligopotent
- d- Unipotent
- e-Nullipotent

Answer : b

18-Hemidesmosome ?

- a-Attach the basal of epithelium to the basement membrane:
- b- Found at the basolateral membrane
- c-Act as electrical junction in the heart
- d-found at the head of epithelial membrane

answer : a

وفقكم الله جميعاً

