Physiology

FINAL EXAM

WATEEN BATCH

إعداد:

1-All the followings are true regarding blood vessels conductance (CL) EXCEPT? Select one.

a. A measure of the blood flow volume through a vessel for a given pressure difference

b. The exact reciprocal of resistance

c. Proportional to the vascular volume

d. 24 times higher in systemic vein than that of its corresponding artery

e. Decreased by increasing arterial compliance

Answer: E

2-What false about corticospinal tract lower motor neuron lesions? Select one.

a. Denervation atrophy

b. Fasciculations

c. Fibrillation

d. Flaccid paralysis

e. Spastic paralysis

3-Which of the following is TRUE regarding first heart sound? Select one.

a. Due to turbulent rushing of blood towards semilunar valves

b. Due to the closure of the A-V valves

c. Produced when semi-lunar valves closed

d. Produced due to turbulent blood flow into ventricles

e. The mitral component heard at the apex area: right 5th intercostal space at midclavicular line

Answer: B

4-What false about excitation—contraction coupling in skeletal muscle? Select one:

a. Cocking of myosin head - High energy form

b. Cross Bridge - Calcium binds to tropomyosin

c. Myosin in low energy - Rigor mortis

d. Power stroke — Release of inorganic phosphate

e. Relaxation- Calcium pumped back to sarcoplasmic reticulum

Answer: B

5-What kind Df somatic sensory impulses that is Not conducting by anterior spinothalamic tract? Select one:

a. Mechanical pain

b. Autonomic responses to pain O

c. Pain during sleep

d. Chemical pain

e. Fine touch

6-The segment of the systemic circulation in which blood flow ve1ocily is highest is* Select one.

a. Aorta

b. Arterioles

c. Capillaries

d. Venules

e. Vena cava

Answer: A

7-Which of the following is a decline in the ability of skeletal muscle to sustain strength of contraction?Select one:

a. Treppe

b. Fatigue

c. Summation

d. Tetanus

e. Recruitment

8-What kind of somatic sensory impulses that is not conducting by Posterior column tract? Select one:

a. Fine touch

b. Vibration

c. Pressure

d. Proprioception

e. Mechanical and chemical pain

9-Which of the following is NOT a function of heart? Select one:

a. Muscular pump

b. Mass movement of fluid in the body

c. Regulation of body temperature

d. Protection by carrying clotting factors and platelets

e. Deoxygenated blood from the right lungs returns to the heart through the right pulmonary vein

Answer: E

10- The ventricular compliance would be decreased in? Select one:

a. Resistance training

b. Walking

c. Isometric hypertrophy

d. Endurance training

e. Swimming

Answer: C

11-Which of the following is NOT CORRECT regarding somatic sensory tracts? Select one.

a. Medial-lateral rule - Sensory neurons that enter a low level of spinal cord are more medial within the spinal cord

b. Somatotopic- Ascending tracts are arranged according to the site of origin

c. Sensory modality- fine touch sensations are carried in different sensory tracts

d. Second order neuron-Interneuron within the spinal cord or brain

e. Third order neuron- Transmit information from the thalamus to the cerebral cortex

12-Which of the following is describing gradual increase in contraction intensity during sequential stimulation? Select one:

a. Treppe

b. Fatigue

c. Summation

d. Tetanus

e. Overlapped tetanus

13- What false about turbulent blood how? Select one:

a. Heard at carotid artery

b. Brutes

c. Murmur

d. Blood flow is high

e. The resistance is high

14-Is part of central nervous system where both sensory and motor neuron pass through? Select one.

a. Dorsal root of the spinal cord

b. Ventral root of the spinal cord

c. Gray ramus communication ”

d. White ramus communication

e. Spinal nerve

15- Stimulation of the greater splanchnic nerve produces? Select one:

a. Increased motility of the small intestine

b. Inhibition of micturition

c. Relaxes motility of stomach

d. Vasoconstriction of the blood vessels in the erectile tissue

e. Increases of pancreatic Secretion’s

16-which of the following is NOT describing corticobulbar tract? Select one:

a. Lower motor neuron starting from cranial nerve nuclei

b. Motor impulses carried by cranial nerve of facial, mastication, swallowing and tongue

c. Upper motor neuron coming off Percental gyrus

d. Ascending tract

e. Efferent tract

17-Changing in blood pressure and chemicals in the blood would stimulate? Select one.

a. Aortic bodies only "

b. Carotid body only

c. Vagus nerve

d. Glossopharyngeal nerve

e. Carotid body more than aortic bodies

Answer: E

18-The primary role of calcium in skeletal muscle contraction? Select one:

a. Cause depolarization of the sarcolemma

b. Cross-bridge cycle between actin and myosin

c. Provides energy necessary for contraction "

d. Causes muscle relaxation

e. Regulate ionic composition of the cell

Answer: B

19-What is the most important factor that affect the total peripheral resistance? Select one:

a. Length of blood vessels

b. Blood viscosity

c. Blood vessels radius

d. Mean arterial blood pressure

e. Conductance

Answer: C

20-What are the only two changes which can increase mean circulatory filling pressure? Select one.

a. Increased venous compliance and increased blood volume

b. Increased venous compliance and decreased blood volume

c. Decreased venous compliance and increased blood volume

d. Decreased venous compliance and decreased blood volume

e. Neither venous compliance nor blood volume affect mean circulatory filling pressure

Answer: C

21-Find the false statement about white muscle fibers (glycolytic fibers)? Select one:

a. Fiber diameter are small

b. Like gastrocnemius muscle

c. Fast or slow twitch muscle fibers

d. Low fatigue resistant

e. Mitochondrial density is law

22-One event during smooth muscle relaxation is NOT true? Select one.

a. Calcium pumped back into sarcoplasmic reticulum

b. Decreased activity of myosin ATP ase activity

c. Decreased muscle tension

d. Calcium unbind from calmodulin

e. Tropomyosin covers the actin myosin binding sites

Answer: A

23-which of the following is NOT a component of a sympathetic division of the autonomic nervous system?Select one:

a. Thoracolumbar

b. Facial and oculomotor cranial nerve

c. Preganglionic fibers release Ach

d. Lateral sympathetic trunk

e. Collateral ganglia

Answer: B

24-When measuring blood pressure, you measure two ventricular pressures. Which is the higher of the pressures? Select one:

a. Systolic pressure

b. Mean arterial pressure

c. Diastolic pressure

d. Pulse pressure

e. Examination pressure

Answer: A

25- All of the following changes of circulatory matched pairs would happen due to an INCREASE in the mean arterial blood pressure EXCEPT?

a. Decrease sympathetic output on Alpha receptors- Vasodilatation

b. Decrease sympathetic output on Beta one receptors- Decrease force of contractions of the ventricles

C. Decrease sympathetic output on Beta one receptors- Decrease heart rate

d. Increase parasympathetic output on muscarinic receptors-Decrease heart rate

e. Increase peripheral resistance and decrease cardiac output

Answer: E

26-Find the false statement about white muscle fibers (glycolytic fibers)? Select one:

a. Fiber diameter are small

b. Like gastrocnemius muscle

c. Fast or slow twitch muscle fibers

d. Low fatigue resistant

e. Mitochondrial density is law

27-Vasoconstriction in the arterioles of the legs would be expected to? Select one:

a. Increase in total blood pressure

b. Decrease In total blood pressure

c. Increase blood flow in the legs

d. No change in blood flow in the legs

e. No change in total blood pressure

Answer: A

28-What false about Henneman's size principle? Select one:

a. The relative change in force remains relatively constant

b. Minimizes the amount of fatigue

c. Motor units are recruited from smallest to largest

d. Low force recruited first

29-Myosin Is released from actin during the cross-bridge cycle by the? Select one:

a. Release of PI

b. Release of ADP

c. Binding of PI

d. Binding of new ATP

e. Release of new ATP

Answer: D

30-If the arterial blood pressure is increased from 90 mm Hg to 100 mm Hg, and if total peripheral resistance is held constant, one could calculate that the cardiac output? Select one:

a. Increased by 80%

b. Increased by 60%

c. Increased by 40%

d. Increased by 10%

e. Decreased by 40%

Answer: D

31-What are the only two changes which can increase mean circulatory filling pressure? Select one:

a. Increased venous compliance and increased blood volume

b. Increased venous compliance and decreased blood volume

c. Decreased venous compliance and increased blood volume

d. Decreased venous compliance and decreased blood volume

e. Neither venous compliance nor blood volume affect mean circulatory filling pressure

Answer:C

32-What false about corticospinal tract upper motor neuron lesions? Select one:

O a. Disuse atrophy

b. Cog wheel rigidity

c. Spastic paralysis

d. Hypertonia

e. Clasp knife spasticity

33-Which of the following will increase stroke volume? Select one:

a. Increased total peripheral resistance

b. Reduced activity of cardiac sympathetic nerves

c. Increased end venous return

d. Low extracellular Ca2+

e. Reduced end-diastolic volume

Answer: C

34-What false about excitation-contraction coupling in skeletal muscle? Select one:

a. Cocking of myosin head - High energy form

b. Cross Bridge - Calcium binds to tropomyosin

c. Myosin in low energy - Rigor mortis

d. Power stroke - Release of inorganic phosphate

e. Relaxation- Calcium pumped back to sarcoplasmic reticulum

Answer: B

35-The segment of the systemic circulation in which blood flow velocity is highest is? Select one:

a. Aorta

b. Arterioles

c. Capillaries

d. Venules

e. Vena cava

Answer: A

36-What is true about Isometric contraction in cardiac muscle? Select one: .

a. Occurs as the result of the length-tension relationship

b. Muscle fibers would decrease in the length

c. Optimum length is determined by fixed distance of sarcomere

d. Like isometric contraction in skeletal muscle

e. It doesn't depend directly upon blood filling

Answer: E

37-In a particular blood vessel, decreasing radius by two does what to the blood resistance? Select one:

a. Increase by a factor of 16

b. Increase by a factor of 4

c. Cannot be calculated from this information

d. Decrease by a factor of 4

e. Decrease by a factor of 16

Answer: A

38-What kind of somatic sensory impulses that is not conducting by Posterior column tract? Select one:

a. Fine touch

b. Vibration

c. Pressure

d. Proprioception

e. Mechanical and chemical pain

39-A lesion in the cervical sympathetic, chain causes? Select one:

a. Increased sweating

b. Drooping of the upper eyelid

c. Vasoconstriction of the skin blood vessels

d. Dilatation of pupil

e. Inhibition of salivary glands secretion

Answer: B

40-By increasing all the following factors, the viscosity of blood would increase EXCEPT One?

a. Polycythemia

b. blood Osmolarity

c. Resistance

d. Turbulent flow

e. Anemia

Answer: E

41-Which of the following is NOT CORRECT regarding somatic sensory tracts? Select one:

a. Medial-lateral rule - Sensory neurons that enter a low level of spinal cord are more medial within the spinal cord

b. Somatotopic- Ascending tracts are arranged according to the site of origin

c. Sensory modality- fine touch sensations are carried in different sensory tracts

d. Second order neuron-Interneuron within the spinal cord or brain

e. Third order neuron- Transmit information from the thalamus to the cerebral cortex

42-Which of the following is NOT consistent with the heart position? Select one:

a. The heart is located in the middle of the thorax

b. The aortic valve is on the second intercostals space at the right side

c. The apex of the heart facing toward the left and inferiorly, at the level of the 7th intercostals space

d. The base of the heart is the posterior part of the heart

e. The heart Is positioned between two bony structures sternum and vertebrae

43-La Place's Law states that?

Answer: C

a. Pressure = Tension * radius

b. Radius = Pressure *Tension

c. Tension = Pressure * Radius

d. Tension = 1/r4 .

e. A Pressure = Flow * Radius

Answer: C

44-During the cardiac cycle, which of the following occurs when left ventricular pressure rises above aortic pressure? Select one:

a. The tricuspid valve open

b. The aortic valve closes

c. The mitral valve opens

d. The aortic valve opens

e. The pulmonary valve closes

Answer: D

45-Which of the following is NOT CONSISTENT with Posterior column? Select one:

a. A alpha

b. A beta

c. Merkel disc

d. Ruffini corpuscle

e. C- fibers v .

46-During a muscle contraction which region disappears? Select one:

a. I Band

b. A Band

c. Z line

d. H band

e. M line

Answer: D

47-One of the following is attributed mainly to the upper motor neuron lesions of corticospinal tract? Select one:

a. Stroke

b. Multiple sclerosis

c. B12 deficiency

d. Amyotrophic lateral sclerosis

e. Botulinum toxin

48-Which of the following is NOT consistent with the physiological cardiac hypertrophy? Select one:

a. Is an adaptive process which occurs as a result of increased stress endured by the heart

b. Concentric hypertrophy is common in resistance training

c. Treadmill walking is an example of eccentric hypertrophy

d. Isotonic contraction

e. Isometric contraction

Answer: D

49-What false about the somatic system? Select one:

a. Effector is always skeletal muscles

b. Long myelinated nerve fiber

c. Posterior gray horn of the spinal cord

d. Release Ach

e. Effect is either stimulatory or inhibitory

Answer: E

50-Autonomic nervous system only modifies the action potential in? Select one:

O a. Cardiac and skeletal muscle

b. Smooth and skeletal muscles

c. Cardiac muscles only

d. Skeletal muscle

e. Cardiac and gastrointestinal smooth muscles

Answer: E

51-Alpha antagonist would result in? Select one:

a. vasoconstriction

b. Increases force of cardiac contraction

c. Increases heart rate

d. Decreases heart rate

d. Skeletal muscle

e. Cardiac and gastrointestinal smooth muscles •

52-All the following Is correct regarding autonomic nervous system regulation of cardiac potential EXCEPT? Select one:

a. The autonomic nervous systems is only modifying and not triggering the action potential of the cardiac muscle

b. Positive Inotropy increases cardiac contractility %

c. Negative Inotropy modify the cardiac contractility

d. Muscarinic receptors agonist would directly decreases heart rate *

e. Beta agonist would directly increases heart rate

Answer: C

53-What false about corticospinal tract lower motor neuron lesions? Select one:

a. Denervation atrophy

b. Fasciculations

c. Fibrillation

d. Flaccid paralysis

e. Spastic paralysis

54-Which of the following Is NOT a function of heart?

b. Mass movement of fluid In the body

c. Regulation of body temperature

d. Protection by carrying clotting factors and platelets

e. Deoxygenated blood from the right lungs returns to the heart through the right pulmonary vein

Answer: E

55-What is the most important factor that affect the total peripheral resistance? Select one:

a. Length of blood vessels

b. Blood viscosity

c. Blood vessels radius '

d. Mean arterial blood pressure

e. Conductance

Answer: C

56-A "positive inotrope" is? Select one:

a. Agent that increases vascular constriction

b. Agent that increases blood volume

c. Agent that increases hematocrit

d. Agent that increases cardiac contractility

e. Agent that decreases heart rate

Answer: D

57-Which of the following is CORRECTLY describing site of posterior spinocerebellar

a. Axons of most second order neurons cross before entering tract in the spinal cord

b. Axons of the second order neuron cross at the level of entry spinal cord

c. Axons of second order neuron cross before joining medial lemniscus in the medulla oblongata

d. Axons of second order neuron cross within the cerebellum .

e. There is no cross over in this tract

58-One of the following is NOT related to smooth muscle of gastrointestinal tract? Select one:

a. Cajal cells

b. Sarcomere

c. Varicosities

d. More actin than myosin

e. Modified by autonomic nervous system

Answer: B

59-What false about Soleus muscle? Select one:

a. Slow twitch oxidative O b. Mitochondrial density high

c. Resistance to fatigue high

d. Myoglobin content high

e. Slow twitch glycolytic

60-The second heart sound occur? Select one:

a. Isovolumetric contraction

b. Isovolumetric relaxation

c. Ventricular ejection

d. Mid to late ventricular systole

e. Mid to late ventricular diastole

Answer: B

61-Which of the following is describing Unitary smooth muscle? Select one:

a. Individually innervated

b. Fine control

c. Multi- unit

d. Iris muscle of the eye

e. Coordinated contraction

Answer: E

62-The segment of the systemic circulation in which each blood vessel has the smallest diameter is? Select one:

a. Aorta

b. Arterioles

c. Capillaries

d. Venules

e. Vena cava

Answer: C

63-Which of the following is a decline In the ability of skeletal muscle to sustain strength of contraction? Select one:

a. Treppe

b. Fatigue . '

c. Capillaries

d. Venules

e. Vena cava

64-Which of the following is a decline in the ability of skeletal muscle to sustain strength of contraction? Select one;

O a.Treppe

b. Fatigue - .

c. Summation

d. Tetanus

e. Recruitment

65-If you have given five different heart rate values for five persons different in their life style, which heart value do you think, may refer to athlete's person? Select one:

a. 40-60

b. 60-80

c. 80-100

d. 90-140

e. 93-150

Answer: A

66-Which of the following is TRUE regarding first heart sound? Select one:

a. Due to turbulent rushing of blood towards semilunar valves

b. Due to the closure of the A-V valves O

c. Produced when semi-lunar valves closed

d. Produced due to turbulent blood flow into ventricles O

e. The mitral component heard at the apex area; right 5th intercostal space at midclavicular line

Answer: B

67-which of the following is NOT a component of corticospinal tract LMN? Select one:

a. Anterior gray horn in the spinal cord

b. Extrafusal muscle fiber

c. Intrafusal muscle fiber

d. Muscle spindle

e. Internal capsule of the brain

68-Isovolumetric contraction of the left ventricle? Select one:

a. Begins when the aortic valve opens and ends when the aortic valve closes

b. Begins when mitral valve closes and ends when the aortic valve opens >

c. Begins when mitral valve opens and ends when aortic valve closes

d. Begins when mitral valve opens and ends when aortic valve opens

e. Begins when mitral valve closes and ends when aortic valve closes

Answer: B

69-Find the statement about turbulence and the laminar that is false? Select one:

a. Turbulent flow is not linear

b. Laminar flow is normal blood flow

c. Turbulent flow could be pathological or normal

d. Most of the flow in the cardiovascular system is turbulent

e. Laminar flow is eccentrical and soft flow

70-What false about structure of smooth muscle? Select one:

a .Dens bodies

b. Caveolae

c. Spindle shape

d. Neuromuscular junction

e. Gap junction

Answer: D

71-According to Starling's Law of the heart, an increase in end diastolic volume would lead to all the following EXCEPT? Select one:

a. Results in greater contraction of the ventricular muscle

b. Increases stroke volume

c. Increases the stretching of myocardial fibers in the left ventricle O

d. Decreases the tension of the ventricular muscle O

e. Increases the filling ventricular pressure

Answer: D

72-Which of the following is NOT consistent with Stroke Volume (SV)?Select one:

a. End diastolic volume is the amount of blood that remains in the ventricle just before ventricular early systole

b. End systolic volume is the amount of blood that remains in the ventricle at the end of ventricular systole

c. SV=End diastolic volume-End systolic volume

d. Reduced heart rate reduced ventricles end-diastolic volume .

e. The relationship between stroke volume and end diastolic volume represents the starling law the heart SE: *

73-What false about turbulent blood flow? Select one:

Answer: D

a. Heard at carotid artery

b. Brutes

c. Murmur

d. Blood flow is high

e. The resistance is high

74-Is part of central nervous system where all preganglionic sympathetic nerve fibers passe through? Select one:

a. Dorsal root of the spinal cord

b. Ventral root of the spinal cord

c. Gray ramus communication

d. White ramus communication

e. Spinal nerve

75-Which of the following is NOT correct regarding conducting system in the cardiac muscle? Select one:

a. Sinoatrial node (SA) first generates the signal

b. Atrioventricular (AV) common bundle delay the signal and send it to the ventricles

c. Purkinje fibers rapidly carry the signal throughout the ventricles, where it then spreads, and causing ventricular contraction

d. SA node is slower than AV node

e. Nodal cells trigger and stimulate the depolarization of cardiac muscle

Answer: D

76-Keeps the cell tight together and prevent stretching of tight junction during contraction? Select one:

a. Bachman's bundle

b. AV node

c. Gap junction

d. Desmosomes

e. His bundle

Answer: D

77- One of the following describes the parasympathetic division of the autonomic nervous system?
Select one:

a. Mediates the body's response to stress
b. Long postganglionic fibers
c. Collateral ganglia
d. Spinal and cervical nerves
e. Greater splanchnic nerves

Answer: C

78- In response to decreasing human blood pressure?
Select one:

a. Decreased the activity of alpha receptors
b. Decreased the activity of beta one receptors
c. Decreased the activity of Ach muscarinic receptors
d. Decreased the activity of beta two receptors
e. Decreased total peripheral resistance and cardiac output

Answer: C

79- Which of the following is NOT TRUE regarding second heart sound?
Select one:

a. Produced by the vibration associated with the closing of the semilunar valves
b. This sound is sharp and loud and described as "DUB."
c. Occurs in isovolumetric contraction
d. Pulmonary component heard at the level of 2nd left intercostal space
e. Aortic component is heard at the level of the 2nd right intercostal space

Answer: C

80- Alpha antagonist would result in?
Select one:

a. Vasoconstriction
b. Increases force of cardiac contraction
c. Increases heart rate
d. Decreases heart rate
e. Decrease total peripheral resistance

Answer : E

81- Concerning the adrenal medulla, all the following is true EXCEPT?
Select one:

a. Its secretion is increased in emergency conditions
b. It secrets epinephrine and norepinephrine
E. Prolongs the effects of sympathetic stimulation
d. It is a modified sympathetic ganglion
e. It receives preganglionic nerve supply from the anterior horn cells of the spinal cord

Answer: E

82- The second heart sound occur?
Select one:
a. Isovolumetric contraction
b. Isovolumetric relaxation
c. Ventricular ejection
d. Mid to late ventricular systole
e. Mid to late ventricular diastole

Answer: B

83- Which of the following is NOT truly describing heart valves?
Select one:
a. One -way valves
b. Semilunar valves at the origin of pulmonary artery and aorta
c. Tricuspid valves at the right side
d. Mitral valve at the left side
e. No valves between atria and vena cava because atria pressure are much higher than that in vena cava

Answer: E

84- Which of the following is NOT correctly describing Frank Starling Mechanism?
Select one:
a. Represents the relationship velocity and cross sectional area
b. As a larger volume of blood flows into the ventricles this will lead to an increase in the force of contraction
c. The physiological importance of the mechanism lles mainly in maintaining left and right ventricular output equality
d. Allows the cardiac output to be synchronized with the venous return
e. If this mechanism were not exist, blood would accumulate in the pulmonary and systemic. circulation

Answer: A

85- Which of the following is NOT true regarding Perfusion blood pressure?
Select one:
a. Equal to mean arterial blood pressure minus central venous pressure
b. Equal to the mean arterial blood pressure under physiological condition only
c. Any change in blood pressure would stimulate carotid and aortic baroreceptor
d. Decreased by increasing in the total arterial peripheral resistance
e. The central venous pressure determines the right atrial pressure

Answer: D

86- Which of the following is NOT TRUE regarding ventricular compliance?
Select one:
a. Compliance curves are plotted as the change in end diastolic volume over the change in end diastolic pressure
b. The slope of the relationship is linear in normal compliance
c. The ventricular compliance is decreased because the thickness of the ventricular wall increases
d. The dilated ventricle would have increased compliance
e. 54 is associated with decreased compliance and stiff ventricles

Answer: B