### testbank

EGEND

### CNS - MID SECOND WEEK

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# Physiology

Human eye has a near point i.e. distance of distinct vision at approximately 25cm. For a normal eye, which of the following statements is true?

The image formed on the retina is virtual, erect and diminished The image formed on the retina is real, inverted and diminished The image formed on the retina is real, inverted and magnified. More than one of the above

Why can you not see objects in a dim lit room when you come from a brightly lit room?

The iris dilates the eye lens to allow less light to enter the eye.

The iris contracts the pupil to allow less light to enter the eye. The vitreous humour dilates the pupil to allow less light to .enter the eye. More than one of the above None of the above

B, B, D

. This part of the eye dilates and contracts based on the environment

Sclera (a) Cornea (b) Lens (c) Pupil (d) The main function of the cornea present in the human eye is

structural support to the eye (a)

bends light before it reaches the lens (b)

changes the shape of the lens enabling (c)

image to be focused on the retina

contains a concentrated amount of cone cells on the correct (d) orientation

Colour vision in human eyes is the function of photoreceptor cells named

Rods .1

Cones .2

Blind spot .3

More than one of the above .4

Where does the most of refraction for light rays entering the eye occurs?

on the outer surface of cornea .1

on the eye lens .2

In Aqueous humour .3

on the retina .4

**B**, **B**, **A** 

The change in focal length of an eye is caused by the action of the -

pupil .1 retina .2 cilliary muscles .3 More than one of the above .4

The thin membrane in the eye through which light enters is known as:

Iris .1 Pupil .2 .Cornea .3 Aqueous humor .4

The colour of the human eye depends on the pigment present in the of the eye.

Iris .1 Cornea .2 Face .3 Lens .4

Which of the following statements is NOT correct about myopia?

.The vision may be corrected with the help of concavelens .1

It is also knownas near sightedness .2

In the affected eye, the image of a distant object is formed .3 beyond the retina

.The person affected by it cannot see beyond few metres .4

C, C, A, A

What is the nature of the image that is formed on the retina of human eye?

virtual and inverted .1 real and straight .2 virtual and straight .3 real and inverted .4

The human eye forms the image of an object at its

cornea .1 iris .2 pupil .3 retina .4

Cornea in human eye .is a light sensitive screen .1 .is a muscular diaphragm .2 .contains blood vessels .3 .is composed of proteins and cells .4

. The transparent lens in the human eye is held in its place by

smooth muscles attached to the iris (a)

ligaments attached to the ciliary body (b)

ligaments attached to the iris (c)

smooth muscles attached to the ciliary body (d)

#### D, D, D. B

The dilation and constriction of the pupil of the eye is due to the effect of human body. on the

Light .1 Temperature .2 Noise .3 Pressure .4

A cornea transplant is never rejected in humans because

it consists of enucleated cells (a) it is a non-living layer (b) it has no blood supply (c) its cells are least penetrable by bacteria (d)

The innermost layer and the most delicate layer of the eyeball where the photoreceptors are located are

A, C, D, C

Chloroid (a) Sclera (b) Cornea (c) Retina (d)

Myopia is also known as

Near sightedness .1 Poor sightedness .2 Extreme sightedness .3 More than one of the above .4 None of the above .5 Which of the following is best described as an elongated, encapsulated receptor found in the dermal pegs of glabrous skin and is especially abundant on lips and fingertips?

- A) Merkel's disc
- B) Free nerve endings
- C) Meissner's corpuscle
- D) Ruffini's endings

Pain receptors in the skin are typically classified as which of the following?

- A) Encapsulated nerve endings
- B) Single class of morphologically specialized receptors
- C) Same type of receptor that detects position sense
- D) Free nerve endings

Which of the following best describes an expanded tip tactile receptor found in the dermis of hairy skin that is specialized to detect continuously applied touch sensation?

- A) Free nerve endings
- B) Merkel's disc
- C) Pacinian corpuscle
- D) Ruffini's endings

Which of the following best describes the concept of specificity in sensory nerve fibers that transmit only one modality of sensation?

- A) Frequency coding principle
- B) Concept of specific nerve energy
- C) Singularity principle
- D) Labeled line principle

Which of the following is an encapsulated receptor found deep in the skin throughout the body as well as in fascial layers where they detect indentation of the skin (pressure) and movement across the

- surface (vibration)?
- A) Pacinian corpuscle
- B) Meissner's corpuscle
- C) Free nerve endings
- D) Ruffini's endings

Which of the following substances enhances the sensitivity of pain receptors but does not

- directly
- excite them?
- A) Bradykinin
- B) Serotonin
- C) Potassium ions
- D) Prostaglandins

Which of the following is an important functional parameter of pain receptors?

- A) Exhibit little or no adaptation
- B) Not affected by muscle tension
- C) Signal only flexion at joint capsules
- D) Can voluntarily be inhibited

The excitatory or inhibitory action of a neurotransmitter is determined by which of the following?

- A) Function of its postsynaptic receptor
- B) Molecular composition
- C) Shape of the synaptic vesicle in which it is contained
- D) Distance between the pre- and post-synaptic membranes

Which of the following statements concerning the transmission of pain signals into the central nervous system is correct?

- A) The "fast" pain fibers that conduct at about 6 to 30 m/sec are classified as type C fibers
- B) Type A-delta pain fibers are responsible for the localization of a pain stimulus

C) Upon entering the spinal cord dorsal horn, the fast and slow pain fibers synapse with the same populations of neurons

D) The paleospinothalamic tract is specialized to rapidly conduct pain signals to the thalamus

Which of the following is the system that transmits somatosensory information with the highest degree of temporal and spatial fidelity?

- A) Anterolateral system
- B) Dorsal column-medial lemniscal system
- C) Corticospinal system
- D) Spinocerebellar system

Which of the following pathways crosses in the ventral white commissure of the spinal cord within a few segments of entry and then courses to the thalamus contralateral to the side of the body from which the signal originated?

- A) Anterolateral system
- B) Dorsal column-medial lemniscal system
- C) Corticospinal system
- D) Spinocerebellar system

Which of the following statements concerning the mechanoreceptive receptor potential is/are true?
A) Increase in stimulus energy results in an increase in receptor potential
B) When receptor potential rises above a certain threshold action potentials will appear in the neuron attached the receptor
C) Number of action potentials generated in the neuron attached to the receptor is proportional to receptor potential

D) All of the above are correct

Neurons located in which of the following areas release serotonin as their neurotransmitter?

- A) Periaqueductal gray area
- B) Interneurons of the spinal cord
- C) Periventricular area
- D) Nucleus raphe magnus

Which of the following systems conveys information concerning highly localized touch sensation and body position (proprioceptive) sensation?

- A) Anterolateral system
- B) Dorsal column-medial lemniscal system
- C) Corticospinal
- D) Spinocerebellar

Which of the following explains why individuals in severe pain have difficulty sleeping without sedative medication?

A) The somatosensory cortical area for pain perception blocks the sleep-generating circuits

B) Pain fibers entering the dorsal horn and the ascending pain pathways block the sleep-generating circuits

C) Ascending pain pathways provide excitatory input to brainstem reticular formation areas that are involved in maintenance of the alert, waking state

D) The neurotransmitters used in the slow pain pathway diffuse to neighboring cell groups and generally raise the excitability of the brain

The first-order (primary afferent) cell bodies of the dorsal column-medial lemniscal system are

- found in which of the following structures?
- A) Spinal cord dorsal horn
- B) Spinal cord ventral horn
- C) Dorsal root ganglia
- D) Nucleus cuneatus

Which of the following structures carries axons from the nucleus gracilis to the thalamus?

- A) Fasciculus gracilis
- B) Fasciculus lemniscus
- C) Lateral spinothalamic tract
- D) Medial lemniscus

Which of the following represents the basis for transduction of a sensory stimulus into nerve impulses?

- A) Change in the ion permeability of the receptor membrane
- B) Generation of an action potential
- C) Inactivation of a G-protein-mediated response
- D) Protein synthesis

Which of the following structures carries axons from neurons in the ventral posterolateral nucleus of

the thalamus to the primary somatosensory cortex?

- A) Medial lemniscus
- B) External capsule
- C) Internal capsule
- D) Extreme capsule

#### Stimulation of which brain area can modulate the sensation of pain?

- A) Superior olivary complex
- **B)** Locus ceruleus
- C) Periaquaductal gray
- D) Amygdala

Which of the following body parts is represented superiorly and medially within the postcentral

- gyrus?
- A) Upper limb
- B) Lower limb
- C) Abdomen
- D) Genitalia

Which of the following is a group of neurons in the pain suppression pathway that utilizes seretonin

as a neurotransmitter?

- A) Postcentral gyrus
- B) Nucleus raphe magnus
- C) Periaqueductal gray
- D) Type AB sensory fibers

As the receptor potential rises higher above threshold, which of the following best characterizes the new frequency of action potentials?

- A) Decrease
- B) Increase
- C) Remain unchanged

Increase only when the receptor potential increases to twice the level of threshold

24- Which of the following is a type of interneuron in this region that utilizes enkephalin to inhibit pain transmission?

- A) Nucleus raphe magnus
- B) Postcentral gyrus
- C) Dorsal horn of spinal cord
- D) Type C sensory fiber
- The highest degree of pain localization comes from
- A) simultaneous stimulation of free nerve endings and tactile fibers
- B) stimulation of free nerve endings by bradykinin
- C) nerve fibers traveling to the thalamus by way of the paleospinothalamic tract
- D) stimulation of type A delta fibers

Inhibition of pain signals by tactile stimulation of a skin surface involves which of the following selections?

- A) Type A alpha fibers in peripheral nerves
- B) Type A beta fibers in peripheral nerves
- C) Type A delta fibers in peripheral nerves
- D) Type C fibers in peripheral nerves

Within the primary somatosensory cortex, the various parts of the contralateral body surface are represented in areas of varying size that reflect which of the following?

- A) The relative size of the body parts
- B) The density of the specialized peripheral receptors
- C) The size of the muscles in that body part
- D) The conduction velocity of the primary afferent fibers

The gray matter of the primary somatosensory cortex contains six layers of cells. Which of the following layers receives the bulk of incoming signals from the somatosensory nuclei of the thalamus? A) Layer I

- B) Layers II and III
- C) Layer III only
- D) Layer IV

Which of the following is the basis for referred pain?

A) Visceral pain signals and pain signals from the skin synapse with separate populations of neurons in the dorsal horn

B) Visceral pain transmission and pain transmission from the skin is received by a common set of neurons in the thalamus

C) Visceral pain signals are rarely of sufficient magnitude to exceed the threshold of activation of dorsal horn neurons

D) Some visceral pain signals and pain signals from the skin provide convergent input to acommon set of neurons in the dorsal horn

Pain from the stomach is referred to which area of the body?

- A) upper right shoulder area
- B) abdominal area above the umbilicus
- C) proximal area of the anterior and inner thigh
- D) abdominal area below the umbilicus

Which one of the following statements concerning visceral pain signals is correct?

A) They are transmitted along sensory fibers that course mainly with sympathetic nerves in the abdomen and thorax

- B) They are not stimulated by ischemia in visceral organs
- C) They are transmitted only by the lightly myelinated type A delta sensory fibers
- D) They are typically well localized

Which of the following somatosensory deficits is NOT typically seen following lesions that involve the postcentral gyrus?

A) Inability to discretely localize touch sensation over the contralateral face and upper limb.

B) Inability to judge the weight of easily recognizable objects

C) Inability to accurately assess the texture of common objects by touching them with the fingers D) Inability to move the contralateral arm and leg

The ability to detect two points simultaneously applied to the skin is based on which of the following physiologic mechanisms?

- A) Presynaptic inhibition
- **B)** Lateral inhibition
- C) Medial inhibition
- D) Feed-forward inhibition

Stimulation by touching or pulling on which of the following structures is least likely to cause a

?painful sensation
A) The postcentral gyrus
B) The dura overlying the postcentral gyrus
C) Branches of the middle meningeal artery that lie superficial to the dura over the postcentral gyrus
D) Branches of the middle cerebral artery that supply the postcentral gyrus

Vibratory sensation is dependent on the detection of rapidly changing, repetitive sensations. The

high-frequency end of the repetitive stimulation scale is

- ?detected by which of the following
- A) Merkel's discs
- **B)** Meissner's corpuscles
- C) Pacinian corpuscles
- D) Free nerve endings

Which one of the following statements concerning sensory neurons or their functional properties is ?true

A) All sensory fibers are unmyelinated

B) In spatial summation, increasing signal strength is transmitted by using progressively greater numbers of sensory fibers

C) Increased stimulus intensity is signaled by a progressive decrease in the receptor potential

D) Continuous subthreshold stimulation of a pool of sensory neurons results in disfacilitation of those neurons

E) Temporal summation involves signaling of increased stimulus strength by decreasing the frequency of action potentials in the sensory fibers For a sensory nerve fiber that is connected to a Pacinian corpuscle located on palmar surface of the right hand, the synaptic connection with the subsequent neuron in the corresponding sensory pathway

is located in

A) the right dorsal column nucleus

- B) the left dorsal column nucleus
- C) the dorsal horn of the right side of the spinal cord
- D) the dorsal horn of the left side of the spinal cord

Position sense, or more commonly proprioceptive sensation, involves muscle spindles and which of the following selections?

- A) Skin tactile receptors
- B) Deep receptors in joint capsules
- C) Both tactile and joint capsule receptors
- D) Pacinian corpuscles

The sensation of temperature is signaled mainly by warm and cold receptors whose sensory fibers travel in association with the sensory fibers carrying pain signals. Which of the following statements best

characterizes the transmission of signals from warm receptors?

A) Warm receptors are well characterized histologically

- B) Signals from warm receptors are mainly transmitted along slow-conducting type C sensory fibers
- C) Warm receptors are located well below the surface of the skin in the subcutaneous connective tissue

D) There are 3 to 10 times more warm receptors than cold receptors in most areas of the body

Which of the following statements accurately describes a feature of temperature sensation by the nervous system?

A) Cold receptors continue to be activated even if skin temperature is lowered well below its

- freezing
- point

B) Both cold and warm receptors each have very specific, nonoverlapping ranges of temperature sensitivity

C) Warm and cold receptors respond to both steady state temperatures and to changes in temperature

D) Temperature receptor function is the result of ion conduction changes and not changes in their metabolic rate

## Behavioral

All the following are part of big five traits of personality Except:

- a- Emotional stability
- **b- Extroversion**
- c- Openness
- d- Agreeableness
- e- Reaction formation

The following are known as the big five personality traits Except one:

- a- Emotional stability
- b- Vulnerability
- c- Extraversion
- d- Openness
- e- Agreeableness

The big five personality dimensions include the following, Except:

- a. Extraversion
- **b.** Agreeableness
- c. Recklessness
- d. Emotional stability
- e. Openness

Which of the following statements is true about personality:

- A. Body built is highly correlated with personality type
- **B.** Projective personality tests tap the unconscious
- C. Thematic apperception test is an objective test
- D. MMPI is a projective personality test
- E. People with external locus of control don't believe in luck

Which of the following statements regarding personality is Correct:

a. Objective personality tests assess conscious personality Aspects.

b. Roger considered that it is composed of two parts the ego And superego.

- c. Trait theory emphasizes the role of neuro-development.
- d. Freud studied personality through self-actualization.
- e. Personality of humans changes over time.

Which of the following statements is true about personality:

- a- Body built is highly correlated with personality type
- **b- Projective personality tests tap the unconscious**
- c- Thematic apperception test is an objective test
- d- MMPI is a projective personality test
- e- People with external locus of control don't believe in luck

Which of the following is true about personality:

- A. Freud said it is composed of ego and superego
- B. Objective tests are used to assess conscious part of Personality
- C. Personality traits are inherited
- D. Roger studied self-actualization
- E. MMPI is a subjective test

Not a defense mechanism: Answer: re-realization

The following are true about psychological defense Mechanisms EXCEPT:

- a- They are unconscious behaviors
- b- They are protective to personality
- c- They occur in stressful situation
- d- They do not distort reality
- e- May lead to anxiety in excessive use

The following are psychological defense mechanisms except

- a- Repression
- **b- Egression**
- c- Derealization
- d- Reaction formation
- e- Rationalization

All the following are true about defense mechanisms Except:

- a- Reaction formation is a defense mechanism
- b- They usually occur when anxiety is intolerable
- c- Rationalization is a rare defense mechanism
- d- Denial occurs a lot in cancer patients
- e- Projection can be a defense mechanism

Which of the following is at the top of Maslow pyramid?

- a. Self-actualization
- b. Physiological needs
- c. Esteem
- d. Love needs
- e. Safety

The most important factor when assessing personality is:

- a- Family life
- **b-** Relationships
- c- Professional affiliations
- d- Employment record

C, C, A , D

## Anatomy

Which of the following statements concerning the white columns of the spinal cord

is correct:

(a) The posterior spinocerebellar tract is situated in the posterior white column.

(b) The anterior spinothalamic tract is found in the anterior white column.

(c) The lateral spinothalamic tract is found in the anterior white column.

(d) The fasciculus gracilis is found in the lateral white column.

(e) The rubrospinal tract is found in the anterior white column.

Which of the following statements regarding the course taken by the tracts is Correct:

(a) The rubrospinal tract crosses the midline of the neuroaxis in the medulla oblongata.

(b) The tectospinal tract (most of the nerve fibers) crosses the midline in the posterior commissure.

(c)The vestibulospinal tract crosses the midline in the midbrain.

(d) The lateral corticospinal tract has crossed the midline in the medulla oblongata.

(e) The anterior corticospinal tract crosses the midline in the midbrain.

What type of nuclei in the cerebrum are involved in control of motor functions?

- A) ependymal cells
- B) candate nucleus
- C) basal nuclei
- D) lentiform nucleus

What are the enlargements on the medulla oblongata that are involved in conscious skeletal muscle control?

- A) cardiac center
- **B) olives**
- C) pyramids
- D) decussate

The ----- is the most-specific part of the midbrain that is an integral part of the auditory pathway.

- A) corpora quadrigemina
- B) superior colliculi
- C) inferior colliculi
- D) tectum

A 12-year-old boy quickly fatigues after short periods of walking and also suffers from pain in the lumbar region. After extensive neurological examinations a "Tethered-cord-syndrome" is suspected. In this disease the caudal end of the spinal cord is attached to the caudal end of the spinal canal and causes strain. What is the name of the caudal end of the spinal cord?

Anterior horn of spinal cord
Dura mater of spinal cord
Medullary cone
Lumbosacral enlargement
Cauda equina

**C**, **C**, **C** 



Epidural space

Which of the following structures occupy the posterior funiculus of the spinal cord?

Anterior fasciculus proprius

Medial longitudinal fasciculus

Cuneate fasciculus

Lateral corticospinal tract

Gracile fasciculus

Which part of the spinal cord contains the preganglionic sympathetic neurons only present in the thoracic and upper lumbar segments of the spinal cord?

Anterior funiculus of spinal cord

Posterior horn of spinal cord

Lateral horn of spinal cord

Gelatinous substance of posterior horn

Marginal nucleus

Which of the following structures contains cerebrospinal fluid (CSF) and passes through the grey matter of the spinal cord? Posterior cerebellomedullary cistern

Central canal of spinal cord

Posterior median sulcus of spinal cord

Anterior median fissure of spinal cord

Gelatinous substance of posterior horn



A 45-year-old man is admitted to the neurology department with paraesthesia in his left leg. The neurologist orders an MRI in order to screen the course of the ascending medullary tracts that carry sensory information. Which structure in the medulla oblongata should he observe carefully, as it is the point where the ascending sensory tracts from the leg synapse? A Gracile tubercle
B Tectum of midbrain
C Rhomboid fossa of fourth ventricle
D Cuneate tubercle
E Tegmentum of midbrain

Which of the following structures contains the third-order neurons of the dorsal column medial lemniscus tract (DCML)?



# Pathology

#### 1-Choose the incorrect combination:

- a. Guillain-Barre syndrome and viral infection.
- b. Multiple sclerosis and grey matter plaques
- c. Central pontine myelinolysis and rapid correction of hyponatremia
- d. Amyloid angiopathy and brain hemorrhage
- e. Neuromyelitis Optica and humoral immunity Ans: B

### 2-which of the following statements is incorrect regarding peripheral neuropathies?

a. The most common cause of generalized peripheral neuropathy is diabetic neuropathy.

b. Ischemia is thought to play a role in the pathogenesis of diabetic neuropathy
 c. Hypertrophic neuropathy reflects a chronic demyelinating disease and is
 characterized microscopically by onion bulb appearance.

d. Guillian barre syndrome is a neuropathy, characterized by an acute, asymmetric, descending muscle weakness.

e. Chronic inflammatory demyelinating polyneuropathy the occurs in association with autoimmune diseases and an AIDS patients Ans: D

### 3- which of the following is incorrect regarding Multiple Sclerosis?

a. T-helper 17 plays a major role in its pathogenesis.

- b. Oligoclonal bands are used as a diagnostic tests
- c. secondary axonal damage can be permanent
- d. Quiescent plaques show inflammation and Myelin destruction
- e. The disease is commoner in female

Ans: D

### 4-Choose the INCORRECT statement regarding multiple sclerosis (MS):

a. Axonal damage occurs late in the disease process .

- b. The disease is caused by loss of immune tolerance to a myelin protein
- c. Characterized by grey matter plaques separated in time and space .

d. T helper cells play a major role in MS pathogenesis

e. Patients have more IgG in their CSF than in the serum . Ans: c

### 5-Which of the following is not a feature of Gullian Barrie syndrome ?

- a. Respiratory failure is a possible complication .
- b. Asymmetrical paralysis
- c. Acute onset after immunization or infection .
- d. Muscle weakness starts distally then progresses proximally .
- e. The neuropathy resolves within 4 weeks

Ans : b

#### 6-Choose the incorrect combination :

- a. Acute disseminating encephalitis and full recovery in survivals .
- b. Central pontine myelinolysis and sudden change in osmotic pressure .
- c. Hypertrophic neuropathy and proliferation of Schwann cells .
- d. AGE-RAGE interaction and increased anticoagulation
- e. Diabetic neuropathy and sensory symptoms in the feet and hands . Ans : D

#### 7-A 33-year-old healthy man underwent a surgical operation, after which he started having symmetric muscle weakness in the legs followed by arm weakness. The symptoms resolved within 4 weeks. This patient most likely has :

- a. Chronic inflammatory demyelinating polyneuropathy
- b. An attack of multiple sclerosis .
- c. Central pontine myelinolysis .
- d. Guillian Barrie syndrome.
- e. Distal symmetric sensorimotor polyneuropathy Ans : D

#### 8-The following combinations are true except :

- a. Multiple scleross and oligoclonal bands .
- b. Central pontine myelinolysis and rapid correction of hyponatremia

c. Quiescente plaques in multiple sclerosis and gliosis

d. Neuromylitis optica and aquaporin 4 antibodies

e. Multiple sclerosis and grey matter plaques Ans: E

9. One of the following is correct regarding multiple sclerosis ? -oligoclonal band is usually identify in the CSF proteins electrophoresis

10.rapid correction of hyponatremia may be complication by one of the following ? -central myelinolysis

11.one of the following myelin disease involve T helper 1,16? - Multiple sclerosis

- 12-Wrong about MS :
- It affects both peripheral and central nerves



"اللهم اني اسألك فهم النبيين وحفظ المرسلين والملائكة المقربين اللهم اجعل ألسنتنا عامرة بذكرك، وقلوبنا بخشيتك، وسري بطاعتك إنك على كل شيء قدير وحسبنا الله ونعم الوكيل".