



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Physiotherapy
Course Name – Applied Human Physiology
Course Code - BPT202
(Semester II)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) All the following are characteristics of synapses except
 - a) Transmit signal in one direction
 - b) Can send multiple outputs from one single input impulse
 - c) Can not integrate the impulse
 - d) Can send repetitive impulse from on single input impulse
- (2) Which is not correct With related to nerve fibers ?
 - a) Myelinated fibers have diameter more than unmyelinated fibers
 - b) Myelinated fibers conduct signals more rapid than unmyelinated fibers
 - c) Pricking (fast) pain usually conducted by type A nerve fibers while aching pain (slow pain) conducted by type C nerve fibers
 - d) Cold and warmth usually conducted by myelinated fibers
- (3) All of the following are characteristics of EPSP except :
 - a) Na⁺ influx
 - b) K⁺ efflux
 - c) Increase the internal metabolism of neuron
 - d) Activates excitatory enzymes
- (4) Which of the following is inhibitory neurotransmitter found in spinal cord ?
 - a) Serotonin & glycin
 - b) Dopamine
 - c) Glutamate
 - d) Ach
- (5) After Hyperpolarization what will be the membrane potential inside the cell?
 - a) "-70 mV"
 - b) "-72 mV"
 - c) "+40 mV"
 - d) "-55 mV"
- (6) Rheobase (R) refers to
 - a) minimum intensity of stimulus which if
 - b) minimum duration of time for which the

- applied for adequate time
- c) Duration of time applied for action potential
- (7) Relative refractory period refers to
- a) a short period following action potential during which second stimulus, no matter how strong it may be, cannot evoke any response
- c) a short period during which the nerve fibre shows response, if the strength of stimulus is more than normal.
- (8) ___ Neurotransmitter is found in area of brain responsible for long-term behavior and memory
- a) Ach
- c) NO
- b) CO
- d) Glycine
- (9) When an collateral nerve fiber excite an inhibitory neuron and this inhibitory neuron cause inhibition to adjacent less excited neuron this called
- a) Lateral inhibition
- c) Feedback inhibition
- b) Recurrent inhibition
- d) No inhibition
- (10) Lesion confined to posterior column – medial lemniscus system can cause all the following except
- a) Sensory ataxia
- c) Loss of vibration
- b) Loss of pain and temperature sensation
- d) Loss of fine touch sensation on ipsilateral side
- (11) Which is true about Cerebrospinal fluid
- a) Is formed in the arachnoid granulations.
- c) Protects the brain from injury when the head is moved.
- b) Provides the brain with most of its nutrition.
- d) Has a lower pressure than that in the cerebral venous sinuses.
- (12) All the following cause excitation of the muscle spindle except .
- a) Contraction of the end-portion of the intrafusal fibers
- c) Lengthening of the muscle
- b) Shortening of the mid-portion of the intrafusal fibers
- d) Increase the activity of gamma-motor neuron
- (13) Which of the following is not the function of Neurotrophin is
- a) Facilitate initial growth and development of nerve cells in central and peripheral nervous system
- c) Play an important role in the maintenance of nervous tissue and neural transmission.
- b) Promote survival and repair of the nerve cells
- d) Synthesis of Neurotransmitters
- (14) Wallerian degeneration is
- a) due to first degree of nerve injury
- c) due to neurotmesis
- b) due to axonotmesis
- d) due to complete transaction of nerve fibre
- (15) In the process of REGENERATION which option is correct
- a) Myelination is completed in 1 year
- c) Diameter of the nerve fiber gradually increases
- b) pseudopodia like extensions grow from the proximal cut end of the nerve
- d) Fibrils move towards the proximal cut end of the nerve fiber
- (16) Which one is Neuromodulator in nature
- a) Ach
- b) Endorphins

- c) Substance P
- (17) Flexor Reflex is
- Withdrawal reflex
 - Antigravity Reflex
- (18) Give one example of Deep reflex.
- Scapular reflex
 - Plantar reflex
- (19) What is Clonus ?
- involuntary jerky movements due to hypertonicity of muscles in pyramidal tract lesion
 - due to upper motor neuron lesion
- (20) Bell- Magendie law states that
- During any reflex activity, impulses are transmitted in only reversible direction through the reflex arc
 - During any reflex activity, impulses are transmitted in sensory to motor direction through the reflex arc
- (21) Lateral spinothalamic tract is responsible for
- To carry sensation of pain
 - to carry cold temperature sensations
- (22) Flechsig tract starts from
- lower lumbar and sacral segments of spinal cord
 - dorsal nucleus of Clarke gray matter of the spinal cord
- (23) TRACT OF GOLL is responsible for
- Pain
 - Balance
- (24) Ipsilateral Hemiplegia occurs due to
- Unilateral lesion of lateral corticospinal fibers at upper cervical segment
 - Lesion at brainstem involves not only pyramidal tract fibers
- (25) Which of the following tract is Extra Pyramidal tract?
- Comma tract of schultze
 - Lateral corticospinal tract
- (26) Fast pain sensation is carried by
- A δ type afferent fibers
 - C type afferent fibers
- (27) Hypothalamus and Thalamus are located within
- Dopamine
 - Conditioned Reflex
 - Cerebellar Reflex
- Anal reflex
 - Jaw jerk
- deep reflex is elicited in a normal person, the contractions of a muscle or group of muscles are smooth and continuous.
 - sudden flash of light reflex
- During any reflex activity, impulses are transmitted in only one direction through the reflex arc
 - During any reflex activity, impulses are transmitted in only motor to center direction through the reflex arc
- carries impulses of crude touch (protopathic) sensation.
 - pathway for subconscious kinesthetic sensation
- cortex of anterior lobe of cerebellum
 - lateral white column of the spinal cord along the lateral periphery
- Temperature
 - Tactile sensation
- Bilateral lesion of these fibers in thoracic and lumbar segments
 - Lesion of pyramidal tract fibers at posterior limb of internal capsule
- Anterior vestibulospinal tract
 - Anterior corticospinal tract
- A β type afferent fibers
 - B type afferent fibers

- a) Cerebellum
c) Diencephalon
- b) Cerebrum
d) Limbic system
- (28) Which one of the following is the function of parasympathetic nervous system
a) Stimulates sweat gland secretion
c) Pupillary constriction
- b) Acceleration of heart
d) Increase blood pressure
- (29) At a neuromuscular junction synaptic vesicles discharge
a) Epinephrine
c) Adrenaline
- b) Acetylcholine
d) Dopamine
- (30) Broca's area in the left cerebral hemisphere is related to
a) Speech
c) Recognition of words
- b) Learning and memory
d) Smell sensation
- (31) One of the following is naturally occurring compound which reduces pain sensation-
a) Acetylcholine
c) Dopamine
- b) Epinephrine
d) Endorphine
- (32) The sensory nerves helpful in maintenance of balance and posture is
a) Cutaneous
c) Optic
- b) Olfactory
d) Proprioceptor
- (33) The monocyte that migrate from blood to CNS and modified into glial cell is
a) Astrocyte
c) Schwann cell
- b) Microcyte
d) Macrophage
- (34) The canal which communicates 3rd and 4th ventricles is called
a) Septum lucidum
c) Foramen monro
- b) Cerebral aqueduct
d) Tentorium cerebrelli
- (35) When a person is sitting CSF pressure is
a) 10 cm H₂O
c) 30 cm H₂O
- b) 20 cm H₂O
d) 40 cm H₂O
- (36) Best known examples of referred pain is
a) Cardiac pain felt in chest surface
c) Hand pain
- b) Chronic Headache
d) Chest pain to inner left arm
- (37) Neurotransmitter of acute pain is ----- while of chronic pain is -----
a) Glutamate and Substance P
c) Ach and Endorphine
- b) endorphine and Dopamine
d) Enkephaline and Glutamate
- (38) The structure which greatly increases the the surface area of cerebrum of the brain is known as
a) Corpus callosum
c) Pons
- b) Septum lucidum
d) Gyri
- (39) Causes of true visceral pain
a) Chest pain to inner left arm
c) spasm of viscous
- b) Chronic Headache
d) Muscle pain
- (40) With concerning anterior horn cells
a) Gamma-motor neuron innervate intrafusal muscle fibers
- b) Alpha-motor neuron innervate extrafusal muscle fibers

- c) Renshaw cell is inhibitory cell to sensory nerve fibers and can block transmission of unwanted sensation
- d) Gamma-motor neurons cause the muscle spindle to relax
- (41) In decerebration
- a) Medullary inhibitory system become non functional
- b) Pontine excitatory system became over-functional
- c) Block inhibition to vestibular nuclei & Development of rigidity
- d) all of the statements are correct regarding decerebration
- (42) The somatosensory area of cerebral cortex is found in
- a) Parietal lobe
- b) Limbic lobe
- c) Temporal lobe
- d) Occipital lobe
- (43) Which of the following statement is true?
- a) Purkinje fibers output is totally to deep cerebellar nuclei
- b) Vestibulocerebellum inhibit the stretch reflex
- c) Cerebrocerebellum is acting to perform the damping function of cerebellum
- d) Asthenia may produced due to defects in climbing fibers
- (44) With related to parkinsonism, all of the following could happen except
- a) Rigidity in both flexor and extensors
- b) There is static tremors
- c) broad base steps
- d) absence of arm swinging during walking
- (45) With related to reticular formation
- a) Ventral reticulospinal tract is crossed
- b) Lateral reticulospinal tract is uncrossed
- c) Reticular formation receives inputs from motor cortex, in addition to basal ganglia
- d) Pontine reticular system is excitatory
- (46) All the following cause excitation of the muscle spindle except
- a) Contraction of the end-portion of the intrafusal fibers
- b) Shortening of the mid-portion of the intrafusal fibers
- c) Lengthening of the muscle
- d) Increase the activity of gamma-motor neuron
- (47) with related to stretch reflexes
- a) They have no relation to muscle tone
- b) Can not be mediated by higher brain centers
- c) Have no role in stabilizing the body positioning during tense motor activities
- d) Reciprocal inhibition is a characteristic of the afferent nerve fibers.
- (48) Which is true about a somatic lower motor neurone
- a) Innervates fewer fibres in an eye muscle than does one innervating a leg muscle.
- b) Conducts impulses at a speed similar to that in an autonomic postganglionic neurone.
- c) Is unmyelinated.
- d) Conducts impulses which cause relaxation in some skeletal muscles.
- (49) The brain stem is composed of _____
- a) Spinal cord
- b) Axon and vertebra
- c) Medulla pons and middle brain tissue
- d) Cerebellum and Medulla
- (50) Which part of the brain controls emotion experiences?
- a) Pia matter
- b) Hypothalamus
- c) Limbic system
- d) Medulla oblongata
- (51) The sympathetic preganglionic nerve fibres:
- a) Arise from the cervical segments of the spinal
- b) Originate at the autonomic ganglia.

cord.

c) Are myelinated nerve fibres belonging to the B group of the nerve Fibres.

d) Show minimal divergence (branching) in the autonomic ganglia.

(52) Parasympathetic preganglionic neurons:

a) Are much shorter than the postganglionic neurons

b) Are more numerous than the postganglionic neurons

c) Secrete the same transmitter as the postganglionic neurons

d) Originate from all the sacral segments of the spinal cord

(53) Sympathetic tone:

a) initiated by exposure to stress

b) Determines heart rate at rest

c) Controls the level of arterial blood pressure

d) Is increased by use of a ganglion blocking drugs

(54) All of these are the functions of thalamus except

a) Centre for reflex activity

b) Relay centre

c) Processing of motor functions

d) Role in arousal and alertness

(55) Which of the following is NOT a functional and anatomical structure of the cerebellum?

a) spinocerebellum

b) cerebrospinocerebellum

c) cerebrotocerebellum

d) vestibulocerebellum

(56) Immediately following the section of both the dorsal and ventral nerve roots supplying a muscle, an increase in the frequency of discharge of a muscle spindle primary afferent from that muscle will be produced by

a) stimulation of the fusimotor fibres to the muscle distal to the section

b) stimulation of the α motor neurone to the muscle distal to the section

c) contraction of the homonymous muscle

d) strong stimulation of the proximal end of the cut dorsal root

(57) With related to reticular activating system all the following is true except :-

a) Have no role in dreaming

b) Sleep and wakefulness

c) Integrated response to stimuli and pin a specific fact

d) Sense the thing about us

(58) Spinal shock is due to :-

a) Severe pain felt at the site of the lesion

b) Severe hypotensive shock

c) Interruption of the ascending sensory pathways

d) Interruption of the descending facilitatory tracts

(59) What kind of reflexes are Golgi tendon organs involved in?

a) monosynaptic stretch reflexes

b) withdrawal reflexes

c) polysynaptic stretch reflexes

d) protective reflex

(60) All the statements below are true except :

a) Merkle disk and ruffini endings sense steady pressure

b) Pacinian corpuscle and Meissner's corpuscle sense vibration

c) Merkle disk and ruffini are naked nerve endings

d) Merkle disk and ruffini are expanded tips endings