Exercise-1

✍ **Marked Questions are for Revision Questions.**

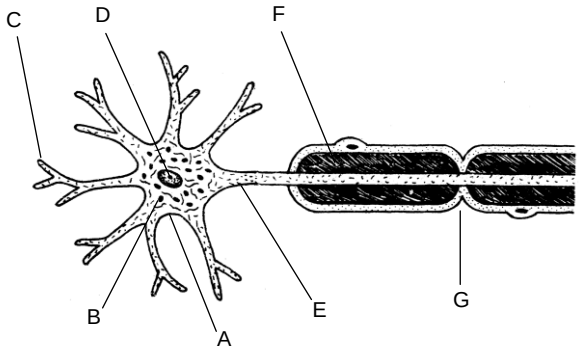
ONLY ONE OPTION CORRECT TYPE

SECTION - A # NERVOUS TISSUE

1. Most of the neurons in our body are

(1) Unipolar (2) Bipolar (3) Pseudounipolar (4) Multipolar

2.# In the diagram of multipolar myelinated neuron given below, different parts have been indicated by alphabetes; choose the answers in which these alphabetes have been correctly matched with the parts which they indicate



(1) A = Cell body, B = Nissl bodies, C = Nucleus, D = Dendrites, E = Naked portion of axon, F = Myelin sheath, G = Node of Ranvier

(2) A = Cell body, B = Nissl bodies, C = Naked portion of axon, D = Dendrites, E = Nucleus, F = Myelin sheath, G = Node of Ranvier

(3) A = Cell body, B = Nissl bodies, C = Naked portion of axon, D = Nucleus, E = Dendrites, F = Myelin sheath, G = Node of Ranvier

(4) A = Cell body, B = Nissl bodies, C = Dendrites, D = Nucleus, E = Naked portion of axon, F = Myelin sheath, G = Node of Ranvier

3. Irritability and conductivity are maximum developed in

(1) Muscular tissue (2) Nervous tissue (3) Connective tissue (4) Epithelial tissue

4. The function of repairing in nervous tissue is done by

(1) Glial cells (2) Nerve cells (3) Cytons (4) Only axons

5. The junction between Schwann cells is known as

(1) Plasmalemma (2) Node of Ranvier (3) Dendrons (4) Synapse

6. Some cells of our body can be over a foot long. These are

(1) Nerve cells (2) Muscle cells (3) Bone cells (4) Gland cells

7. Which of the following tissues in mammals show the least capacity for regeneration?

(1) Epithelial tissue of the skin (2) Endothelium of blood vessels

(3) Skeletal tissue of long bones (4) Nervous tissue of brain

8. Cell bodies or cyton is found in
(1) Brain (2) Spinal cord
(3) Brain and ganglia (4) Brain, spinal cord and ganglia

9. Neurons are classified on the basis of
(1) Number of nucleus present (2) Number of processes arising from the cell body
(3) Number of dendrites present (4) Number of axons present

10. Node of Ranvier is found in
(1) Right auricle (2) Muscle bundles (3) Dendrite (4) Axon

11. The brain develops from
(1) Ectoderm (2) Mesoderm (3) Endoderm (4) Meso-endoderm

SECTION - B # BIOCHEMICAL ASPECT OF NERVOUS PHYSIOLOGY

1. When an impulse passes, the membrane is depolarized and the charge of the cells is
(1) Outside positive and inside negative (2) Inside positive and outside negative
(3) Both sides have zero potential (4) Both sides are electronegative

2. Resting potential of the membrane is -
(1) – 60 to –70 mV (2) – 100 to – 10 mV
(3) 50 to 100 mV (4) – 20 to – 30 mV

3. The velocity conduction of impulses in motor nerve of a mammal is
(1) 4 m/sec (2) 10 m/sec (3) 50 m/sec (4) 100 m/sec

4. The chemical causing the transmission of nerve impulse across synapses is
(1) Acetylcholine (2) Cholinesterase (3) Choline (4) Acetic acid

5. The action potential of a nerve cell is
(1) 65 mV (2) 55 mV (3) 80 mV (4) 75 mV

6. After the transmission of one impulse from the synapse, it cannot transmit another impulse because one of the following chemical is active there
(1) Choline (2) Acetic acid (3) Acetylcholine (4) Acetylcholinesterase

7. The dendrite carries impulses
(1) Towards the cyton (2) Away from cyton
(3) Across the body (4) From one neuron to another

8. The neurotransmitter which communicates between two neurons or between a neuron and a muscle is
(1) Acetylcholine (2) Globulin (3) Rennin (4) ATP

9. Nerve impulse to CNS is
(1) Carried by afferent and efferent fibres
(2) Is not carried by any afferent or efferent fibres
(3) Is carried away by afferent fibres and brought about by efferent fibres
(4) Is brought by afferent fibres and carried by efferent fibres

10. Transmission of nerve impulse can be recorded with the help of
(1) Oscilloscope (2) Microscope (3) Spirometer (4) Microdensitometer

11. The potential difference between outside and inside of a nerve before excitation is known as
(1) Resting potential (2) Action potential (3) Spike potential (4) Reaction potential

12. The mineral necessary for nervous conduction is
(1) Iron (2) Sodium (3) Phosphorus (4) Magnesium

13. Suppose the terminal ends of axon are in contact with dendrites of four adjacent neurons, the nerve impulse of the axon will
(1) Travel in all the four neurons
(2) Get, distributed in all the four neurons resulting in a weak impulse
(3) Travel only in one neuron which is in closest contact and with the same intensity
(4) Travel in none of the neurons because the impulse travels from dendrites of one neuron into the axon of another neuron

14. Afferent nerve fibres carry impulses from
(1) Effector organs to central nervous system (2) Receptors to central nervous system
(3) Central nervous system to muscles (4) Central nervous system to receptors

15. To prevent leakage of an impulse layer of ..... is found on nerve fibres.
(1) Schwann cells (2) Neurilemma (3) Axons (4) Myelin sheath

SECTION - C # CSF, BRAIN COVERING, BRAIN CAVITY

1. The anterior choroid plexus in the brain of man covers
(1) Corpora bigemina (2) Medulla oblongata (3) Diencephalon (4) Mesencephalon

2. The iter/cerebral aqueduct lies
(1) In the third ventricle (2) In the second ventricle
(3) Between the third and the fourth ventricles (4) In the lateral ventricles

3. Which of the following is a richly vascular layer with lots of blood capillaries?
(1) Durameter of brain (2) Piamater of spinal cord
(3) Epidermis of skin (4) Choroid of eye

4. Lateral ventricles are found in
(1) Heart (2) Brain (3) Thyroid (4) Brain and heart

5. Which one of the following cells secrete cerebrospinal fluid?
(1) Ependymal cells (2) Neurons (3) Schwann cells (4) Neurilemma

6. Which of the following connect lateral ventricle of paracoel in brain with third ventricle?
(1) Iter (2) Foramen of Monro
(3) Corpus striatum (4) Filum terminale

7. Foramen of Magendie is situated in
(1) Right auricle (2) Base of skull
(3) Medulla oblongata of brain (4) Posterior end of humerus

8. Which of the following forms the covering of the central nervous system of man?

(1) Duramater and piamater (2) Duramater and arachnoid membrane
(3) Arachnoid membrane and piamater (4) Duramater, arachnoid mater and piamater

9. Ventricles of brain are lined by the cells called
(1) Ependymal cells (2) Neurons cells (3) Neuroglea (4) Schwann's cells

SECTION - D # BRAIN & SPINAL CORD

1. If a person has lost his memory in an accident, the following part of the brain have got injured
(1) Diencephalon (2) Medulla oblongata (3) Cerebellum (4) Cerebrum

2. The hind brain consists of
(1) Pons + cerebellum (2) Hypothalamus + cerebellum
(3) Medulla oblongata + cerebellum (4) Medulla oblongata + cerebellum + pons

3. Learning is related to which part of the human brain?
(1) Medulla oblongata (2) Hypothalamus (3) Cerebrum (4) Cerebellum

4. Which part of the brain is directly concerned with the control of heart?
(1) Cerebrum (2) Diencephalon (3) Pons verolii (4) Medulla oblongata

5. The largest number of neurons found in
(1) Brain (2) Retina (3) Spinal cord (4) Tongue

6. The branched tree like structure present in cerebellum is
(1) Arbor vitae (2) Arboreal (3) Archenteron (4) Areole

7. Crura cerebrae is found in
(1) Hind brain (2) Fore brain (3) Mid brain (4) Spinal cord

8. The dorsal root of spinal cord contains
(1) Somatic motor fibres (2) Visceral motor fibres
(3) Somatic sensory fibres (4) Visceral sensory fibres

9. White matter consists of
(1) Nerve fibres with myelinated sheath (2) Nerve fibres without myelinated sheath
(3) Scattered areolar tissue (4) Nerve fibres with blood vessels

10. The nervous strip connecting both the cerebral hemispheres in the rabbit is
(1) Corpus callosum (2) Corpus albicans
(3) Corpus stratum (4) Corpus spongiosum

11. The thermoregulatory centre is situated in
(1) Spinal cord (2) Pituitary body (3) Cerebellum (4) Hypothalamus

12. Nissl's granules are present in the ..... and contain..... respectively
(1) Muscle cells and deoxyribo nucleic acid (2) Mast cells and RNA
(3) Osteocytes and DNA (4) Neuron and RNA

13. Space between the two adjoining neurons where the chemical transmitter is released is known as
(1) Synaptic vesicle (2) Synapse (3) Synaptic cleft (4) Terminal button

14. Which part of the mammalian brain controls muscular co-ordination?
(1) Cerebrum (2) Medulla oblongata (3) Cerebellum (4) Corpus callosum

15. Reflexes for maintaining vital functions like blood pressure are localised in
(1) Hind brain (2) Mid brain (3) Fore brain (4) Cerebrum

16. In which part of the following, the vomiting centre is situated?
(1) Cerebrum (2) Cerebellum (3) Medulla oblongata (4) Hypothalamus

17. Cerebral hemisphere is the centre of
(1) Thinking (2) Will power (3) Reasoning (4) All of these

18. When degeneration of nerve cells occur which will be affected first?
(1) Dendrites (2) Motor end plates (3) Nissl granules (4) Schwann cells

19. Which one of the following is mainly used by the brain?
(1) Glucose (2) Ascorbic acid (3) Folic acid (4) Glutamic acid

20. Broca's area is situated in
(1) Frontal lobe (2) Parietal lobe (3) Temporal lobe (4) Occipital lobe

21. The control of blood sugar level, osmoregulation and thermoregulation are the function of
(1) Medulla oblongata (2) Cerebellum (3) Hypothalamus (4) Diencephalon

22. The appetite and satiety centres in the brain of man are located in the region of the
(1) Cerebral hemisphere (2) Cerebellum
(3) Medulla oblongata (4) Hypothalamus

23. Contraction of involuntary muscles, secretion of digestive glands and rate of heart beats are under the control of
(1) Cranial system (2) Reflex system
(3) Autonomic nervous system (4) Central nervous system

24. Ventilation is controlled by
(1) Cerebellum (2) Medulla oblongata
(3) Cerebrum (4) Mesencephalon

25. Main function of cerebellum is
(1) Balancing (2) To see (3) To hear (4) Remembering

26. Medulla oblongata controls
(1) Blood pressure (2) Synapse (3) High temperature (4) Low temperature

SECTION - E # REFLEX, CRANIAL NERVES, PNS, ANS

1. Which of the following cranial nerve of man is both sensory and motor?
(1) Olfactory (2) Trigeminal (3) Optic (4) Auditory

2. Which of the following cranial nerves are involved in the movement of eye?
(1) Optic, occulomotor, abducens (2) Occulomotor, abducens, trochlear
(3) Trochlear, abducens and optic (4) Abducens, optic, trochlear, occulomotor

3. The smallest cranial nerve in human being is
(1) Trochlear (2) Opthalmic (3) Abducens (4) Vagus

4. Neural stimulation in visceral organ in human being is done by
(1) Sympathetic and parasympathetic nerves and is under involuntary action
(2) Sympathetic nerves and is under voluntary action
(3) Sympathetic and parasympathetic nerves and is under voluntary action
(4) Parasympathetic nerves and is under voluntary action

5. The number of cranial nerves in rabbit/mammal is
(1) 10 pairs (2) 12 pairs (3) 24 pairs (4) 36 pairs

6. The nervous system and endocrine glands are
(1) Antagonistic (2) Synchronous (3) Independent (4) Interdependent

7. The duramater and piamater are referred as
(1) Peritoneal epithelium (2) Serosa (3) Endothelium (4) Meninges

8. Parasympathetic nervous system increases the activity of
(1) Gut, iris and urinary bladder (2) Heart, adrenal and sweat gland
(3) Heart, pancreas and lachrymal gland (4) Lachrymal gland and sweat gland

9. The lungs, heart, intestine etc. are supplied by cranial nerve
(1) Trigeminal (2) Vagus (3) Abducens (4) Oculomotor

10. IV, V and IX cranial nerves are
(1) Olfactory, spinal accessary and vagus (2) Trigeminal, vagus and glossopharyngeal
(3) Occulomotor, trigeminal and hypoglossal (4) Pathetic, trigeminal and glossopharyngeal

11. Two system which exert opposite influence on the same organs or set of organs are
(1) Endocrine and exocrine gland systems (2) Muscular and nervous system
(3) Endocrine and nervous system (4) Sympathetic and parasympathetic systems

12. What is found in the periphery of spinal cord?
(1) Grey matter (2) Myelinated nerve (3) White matter (4) Notochord

13. Which is correct about human brain?
(1) It is covered by two membranes
(2) There is no blood brain barrier
(3) Largest number of cranial nerves originate from cerebral hemisphere
(4) Cerebral cortex is highly developed

14. Which brain structure in rabbit is directly vision related?
(1) Corpus albicans (2) Hippocampal lobe (3) Corpus callosum (4) Corpora quadiregemina

15. Which of the following is the immediate covering of a nerve fibre?
(1) Sarcoplasm (2) Perineurium (3) Epineurium (4) Endoneurium

16. The ramus communicans of the spinal nerves
(1) Joins the sympathetic chain (2) Joins the parasympathetic chain
(3) Remains independent (4) Joins the brachial plexus

17. The self governing nervous system is known as
(1) Central nervous system (2) Peripheral nervous system
(3) Autonomic nervous system (4) Sympathetic nervous system

18. Which one of the following cranial nerves is mixed?
(1) Optic (2) Olfactory (3) Vagus (4) Trochlear

19. The second cranial nerve is
(1) Optic (2) Trigeminal (3) Olfactory (4) Abducens

20. The eighth cranial nerve (auditory) of vertebrates leads from brain to
(1) Ear (2) Eye (3) Nose (4) Tongue

21. One common example of simple reflex is
(1) Tying your shoe laces while talking to anoher person and not looking at them
(2) Watering of mouth at the sight of a favourite food
(3) Climbing up a stairs in dark without stumbling
(4) Closing of eyelids when an object suddenly approaches the eye

22. Tweleve pairs of ribs and twelve pairs of cranial nerves are found in
(1) Fish (2) Frog (3) Lizard (4) Man

23. Bipolar nerve cells and ganglion cells are found in the
(1) Sclerotea (2) Cochlea (3) Retina (4) Cristae

24. How many pairs of cranial nerves in mammals are purely sensory?
(1) Five (2) Four (3) Three (4) Two

25. Longest cell in body is
(1) Lymph (2) Osteoctyte (3) Neuron (4) Chromatophore

26. Reflex action in a vertebrate is an essential display exhibited by
(1) Sympathetic nerve (2) Motor nerve
(3) Sensory nerve (4) Autonomic response

27. When no intervention is done by the brain, the response is due to
(1) CNS (2) Voluntary actions (3) Spinal reflex (4) Cerebral reflex

28. The cranial nerves which are exclusively sensory in function are
(1) Olfactory and optic (2) Optic and oculomotor
(3) Hypoglossal and optic (4) Hypoglossal and olfactory

29. Function of sympathetic system is to
(1) Decrease heart beat (2) Increase heart beat
(3) Contract respiratory organ (4) Secrete saliva

30. If the sympathetic nerve to the heart is cut-off, the heart beat will
(1) Increase (2) Decrease (3) Remains same (4) Stop

31. The cranial nerves which control eye–ball movement are
(1) 4, 6 and 7 (2) 3, 4 and 6 (3) 2, 3 and 5 (4) 5, 8 and 9

32. Increase in gastro-intestinal secretion and movement after ingestion of food is mainly brought about by
(1) Sympathetic nervous system (2) Parasympathetic nervous system
(3) Central nervous system (4) Hormone secreted by thyroid

33. Simple two neuron reflex arc involves
(1) Sensory neuron (2) Spinal cord (3) Effector neuron (4) All the above

34. The nerve related with diaphragm is
(1) Vagus (2) Phrenic (3) Trigeminal (4) Glossopharyngeal

35. Conditioned reflexes are different than unconditioned reflexes in that
(1) Conditioned reflexes are limited to brain (2) Unconditioned reflexes are limited to brain
(3) Both (1) and (2) (4) None of the above

36. Which is a sensory nerve?
(1) Trigeminal (2) Vagus (3) Opthetic nerve (4) Auditory nerve

SECTION – F # EYE

1. How many types of cones are present which are responsible for the colour differentiation?
(1) Only one (2) 7 types for seven fundamental colours
(3) 3 types (4) 4 types

2. The spot where no image is formed is known as blind spot because it has
(1) Nerves but no cones
(2) Nerves and rods
(3) No cones, rods and nerves
(4) Cones and rods but contains no photochemical substance within them

3. In eyes the bipolar cells are present in
(1) Sclerotic (2) Choroid (3) Retina (4) Yellow spot

4. Mid point of yellow spot contains only cones. This point is known as
(1) Fovea centralis (2) Macula corpus (3) Macula lucidium (4) Macula rotendus

5. Vitamin A is necessary for the proper physiological function of eye because
(1) It is necessary for nerve impulses in retina
(2) Rhodopsin is made up of vitamin A
(3) Oxidation of rhodopsin requires vitamin A
(4) None of the above

6. The vitreous chamber is perforated from front to behind by a narrow tube which is known as
(1) Vitreous canal (2) Hyaloid canal
(3) Vitreous aqueous canal (4) Posterior canal

7. Cones contain a photosensitive chemical known as
(1) Rhodopsin (2) Acetylcholine (3) Acetylcholinesterase (4) Iodopsin

8. The nictitating membrane plica semilunaris is a vestigial organ and is present in
(1) Inner to the middle layer of eye (2) Outer to the middle layer of eye
(3) Inner corner of eyes (4) Outer corner of eyes

9. In mammals, the colour is perceived by or which is responsible for colour detection?
(1) Rod cells of retina (2) Cone cells of retina
(3) Cornea lens complex of eye (4) Rods and cones

10. Rhodopsin pigment is found in
(1) Bile juice (2) Retinal cells (3) RBC (4) Skin

11. The function of ciliary muscles is to
(1) Contract pupil when one moves in sunlight (2) Keep valve in position
(3) Rotate eye ball (4) Change shape of lens

12. Human eye lens is
(1) Spherical and can be moved forward (2) Biconvex and cannot be moved forward
(3) Spherical and cannot be moved forward (4) Biconvex and can be moved forward

13. Vitreous humour is seen in
(1) Ear (2) Eye (3) Brain (4) Bone marrow

14. The space between the lens and the cornea of the human eye is
(1) Vitreous chamber (2) Aqueous chamber (3) Retina (4) Iris

15. Glaucoma is an eye disease arising from
(1) Increased pressure of fluid in eye ball (2) Elongation of eye ball
(3) Shortening of eye ball (4) Irregularity in the surface of cornea

16. The movement of eye ball is brought about by the
(1) Adductor muscle (2) Rectus muscle (3) Biceps (4) Peroneus

17. The central opening of iris is called as
(1) Pupil (2) Cornea (3) Lens (4) Fovea centralis

18. In the retina of human eye, the cones are concentrated more at the
(1) Blind spot (2) Edges of retina (3) Fovea (4) Choroid

19. Chief functions of the rods and cones in the eye of a vertebrate are
(1) Rods are important for vision in bright light and cones in dim light
(2) Rods are important for vision in dim light and cones in bright light
(3) Rods are involved in colour vision and cones in distinguishing intensities of light
(4) Rods and cones are both important for vision in dim light

20. Only rods are present in the eyes of one of the following animals
(1) Pigeon (2) Squirrel (3) Fowl (4) Owl

21. In man, the image formation occur on retina for most bright vision it should form on
(1) At the place of entry of optic nerve (2) Blind spot
(3) Yellow spot (4) At the junction of ciliary body and lens

22. Which of the following has “ommatidia” as units of eye?
(1) *Pheretima* (2) House fly (3) *Pila* (4) Sepia

23. The human eye is sensitive only to light having wave length ranging from
(1) 80 to 280 nanometres (2) 380 to 760 nanometres
(3) 780 to 870 nanometres (4) 880 to 980 nanometres

24. Which of the following nerve supplies organ of corti
(1) Auditory (2) Olfactory (3) Trochlear (4) Vagus

25. The lens and cornea is not having blood supply. So the nutrients are supplied by
(1) Retina (2) Blind spot (3) Vitreous body (4) Aqueous humour

26. In the following abnormalities of the eye which one is a serious condition that leads to blindness?
(1) Presbyopia (2) Myopia (3) Hypermetropia (4) Glaucoma

27. Retina is most sensitive at
(1) Optic disc (2) Macula lutea (3) Fovea centrealis (4) Periphery

28. If the circular ciliary muscles of the eye are unable to contract, the
(1) Lens will become more convex (2) Lens will be thin and stretched
(3) Vision will be lost completely (4) Bright light will have no adverse effect on retina

SECTION - G # EAR

1. Sensation of hearing is produced as a result of the
(1) Presence of the helicotrema
(2) Vibrations set in the external auditory meatus
(3) Vibrations of the ear ossicles
(4) Nerve impulses generated by the hair cells of the organ of corti

2. Main function of eustachian tube is to
(1) Protect tympanic membrane
(2) Support the bones of middle ear
(3) Equalize pressure on two sides of tympanic membrane
(4) Prevent infection entering ear drum

3. In the auditory canal which one of the following glands is present?
(1) Ceruminous gland (2) Meibomian gland (3) Perineal gland (4) Sebaceous gland

4. Helicotrema is
(1) An aquatic mammal
(2) An aperture in between the III and IV ventricle of brain
(3) An aperture in between two scala of cochlea of mammal
(4) A disease of internal ear

5. Ear drum is known as
(1) Tympanic membrane (2) Tensor tympani
(3) Scala tympani (4) Scala vestibuli

6. Organ of corti is found in
(1) Internal ear (2) External ear (3) Both (1) and (2) (4) Vestibule

7. Otoconium is found in
(1) Perilymph (2) Haemolymph (3) Synovial fluid (4) Otolithic membrane

8. In mammalian ear, a membranous structure which separate the scala vestibuli and scala media is
(1) Basilar membrane (2) Reissner's membrane

(3) Autolith membrane (4) Tectorial membrane

9. During hearing mechanism in humans the sense cells which perceive the sound vibrations are present in
(1) Sacculus (2) Utriculus (3) Cochlea (4) Semicircular canals

10. Human ear ossicles are
(1) Incus and stapes (2) Stapes
(3) Incus, malleus and stapes (4) Incus and malleus

11. Internal ear is filled with
(1) Perilymph (2) Endolymph (3) Lymph (4) Both (1) and (2)

12. Utriculus is the part of internal ear or membranous labyrinth which forms
(1) Lower chamber and is concerned with maintenance of equilibrium
(2) Lower chamber and is concerned with transmission of sound waves
(3) Upper chamber and is concerned with maintenance of equilibrium
(4) Upper chamber and is concerned with perception

MISCELLANEOUS QUESTIONS

1. When the intensity of light is low during night, the light is detected by
(1) Rods (2) Cones (3) Lens (4) Both rods and cones

2. The centre for sense of smell in brain is
(1) Cerebellum (2) Cerebrum (3) Olfactory lobes (4) Midbrain

3. Brain depends on blood for the supply of
(1) Oxygen and ATP (2) Oxygen and electrolytes
(3) Oxygen and glucose (4) ATP and glucose

4. In cataract
(1) Due to ageing or some infection eye lens becomes opaque
(2) Elasticity of eye lens is lost
(3) There is irregular curvature of lens
(4) Eye ball becomes shorter

5. Which of the following communicates with the central canal of spinal cord
(1) Lateral ventricles (2) Third ventricle (3) Fourth ventricle (4) Fifth ventricle

6. Which part of the brain is involved in loss of control when a person drinks alcohol?
(1) Cerebellum (2) Cerebrum (3) Medulla oblongata (4) Pons varoli

7. 'Adaptation' of eyes in dark is due to
(1) Depletion of vision pigment in rod (2) Depletion of vision pigment in cones
(3) Repletion of vision pigment in rods (4) Repletion of vision pigment in cones

Exercise-2

1. If the vagus nerves (main nerves of the parasympathetic nervous system) were cut, which of the following would be true? **(8th CBO)**

(1) The heart would stop beating
(2) The diaphragm would be paralysed
(3) Adrenalin secretion by the adrenal gland would cease
(4) None of (1), (2) and (3)
(5) All of (1), (2) and (3)

2. Which statement about the vertebrate nervous system is false? **(4th CBO)**

(1) Relaxation of a muscle is caused by nerve impulses in inhibitory neurons going to the muscle from the spinal cord
(2) After completely sevring the brain from the spinal cord, reflex withdrawal of the foot from a painful stimulus could still occur
(3) In a simple reflex, the sequence followed by information is sensory receptor, sensory neuron, interneuron, motor neuron, muscle cells
(4) The sympathetic nervous system activates the body's responses to stress for example, by increasing heart beat and decreasing blood flow to the gut
(5) The spinal cord and the brain contain many synapses and both function in the processing of information

3. In a car accident a person has got damage in the sensory neurons to their hand severed with no other damage being recorded. This person will **(4th ABO)**

(1) Regain felling as the motor neurons will adapt and carry sensory impulses
(2) Be unable to feel and move their hand as feeling and movement is carried by the same neurons
(3) Regain feeling as the motor nerves replicate and the replace the damaged neurons
(4) Be unlikely to regain feeling in the hand but will be able to move it

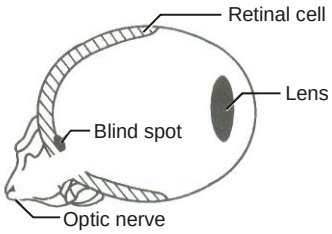
4. In an experiment, the hypothalamus of a rat is artificially cooled to 2°C below normal body temperature. Which of the following would occur? **(8th CBO)**

(1) An increase in blood flow to the skin
(2) An increase in general metabolic activity
(3) Increased excretion of water by the kidneys
(4) Increased sweating
(5) Decreased activity of skeletal muscles

5. Which sequence best describes a simple reflex are such as the knee-jerk reflex? **(2th CBO)**

(1) Sensory neuron → interneuron → motor neuron → effector cell
(2) Sensory neuron → interneuron → effector cell → motor neuron
(3) Sensory neuron → motor neuron → interneuron
(4) Sensory neuron → effector cell → motor neuron
(5) Sensory neuron → motor neuron → effector cell

6.# Diagrammatic representation of an eye of an Octopus is shown below. The major mistakes in the drawing is / are **(2th INBO)**



(1) Lens should be biconcave
(2) The retinal cells should be covered with a layer of neural cells
(3) There should not be a blind spot in the eye
(4) All of the above

Exercise-3

PART - I : NEET / AIPMT QUESTION (PREVIOUS YEARS)

1. An action potential in the nerve fibre is produced when positive and negative charges on the outside and the inside of the axon membrane are reversed,because **(AIPMT-2000)**
(1) more potassium ions enter the axon as compared to sodium ions leaving it
(2) more sodium ions enter the axon as compared to potassium ions leaving it
(3) all potassium ions leave the axon
(4) all sodium ions enter the axon

2. A person suffering from the deficiency of the visual pigment rhodopsin is advised to take more
(1) radish and potato (2) apple and grapes **(AIPMT-2000)**
(3) carrot and ripe papaya (4) guava and ripe banana

3. Characteristic feature of human cornea is that **(AIPMT-2001)**
(1) it is secreted by conjunctiva and gladular tissue
(2) it is lacrimal gland which secretes tears
(3) blood circulation is absent in cornea
(4) in old age it become hard and white layer deposits on it which causes the cataract

4. When we migrate from dark to light, we fall to see for some time but after a time visibility become normal. It is an example of **(AIPMT-2001)**
(1) accommodation (2) adaptation (3) mutation (4) photoperiodism

5. Which of the following statements is correct about node of Ranvier? **(AIPMT-2002)**
(1) Axolemma is discontinuous
(2) Myelin sheath is discontinuous
(3) Both neurilemma and myelin sheath are discontnuous
(4) Covered by myelin sheath

6. What used to be described as Nissl's granules in a nerve cell are now identified as **(AIPMT-2003)**
(1) ribosomes (2) mitochondria (3) cell metabolites (4) fat granules

7. Injury to vagus nerve in human is not likely to affect **(AIPMT-2004)**
(1) tongue movements (2) gastrointestinal movements

(3) pancreatic secretion (4) cardiac movements

8. In the resting state of the neural membrane, diffusion due to concentration gradients, if allowed, would drive **(AIPMT-2004)**

(1) K^+into the cell (2) K^+ and Na $^+$out of the cell

(3) Na^+ into the cell (4) Na^+ out of the cell

9. In a man, abducens nerve is injured. Which one of the following functins will be affected? **(AIPMT-2005)**

(1) Movement of the eye ball (2) Swallowing

(3) Movement of the tongue (4) Movement of the neck

10. One of the examples of the action of the autonomous nervous system is **(AIPMT-2005)**

(1) knee-jerk response (2) pupillary reflex

(3) swallowing of food (4) peristalsis of the intestine

11. Parkinson's disease (characterized by tremors and progressive rigidity of limbs) is caused by degeneration of brain neurons that are involved in movement control and make use of neurotransmitter **(AIPMT-2005)**

(1) acetycholine (2) norepinephrine (3) dopamine (4) GABA

12. Four healthy people in their twenties got involved in injuries resulting in damage and death of a few cells of the following. Which of the cells are least likely to be replaced by new cells? **(AIPMT-2005)**

(1) Osteocytes (2) Melpighian layer of the skin

(3) Liver cells (4) Neurons

13. Which one of the following statements is correct? **(AIPMT-2006)**

(1) Neurons regulate endocrine activity, but not vice versa

(2) Endocrine glands regulate neural activity and nervous system regulates endocrine glands

(3) Neiter hormones control neural activity nor the neurons control endocrine activity

(4) Endocrine glands reguate neural activity, but not vice verse

14. Which one of the following not act as a neurotransmitter? **(AIPMT-2006)**

(1) Acetylcholine (2) Epinephrine (3) Norepinephrine (4) Cortisone

15. During the transmission of nerve impulse through a nerve fibre, the potenial on the inner side of the plasma membrane has which type of electric charge? **(AIPMT-2007)**

(1) First negative, then positive and again back to negative

(2) First positive, then negative and continue to be negative

(3) First negative, then positive and continue to be positive

(4) First positive, then negative and again back to positive

16. Bowman's glands are located in the **(AIPMT-2007)**

(1) proximal end of urinitferous tubules (2) anterior pituitary

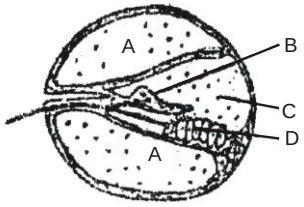
(3) female reproductive system of cockroach (4) olfactory epithelium of our nose

17. Which one of the following pairs of structures distinguishes a nerve cell from other types of cell?

(1) perikaryon and dendrites (2) Vacuoles and fibres **(AIPMT-2007)**

(3) Flagellum and medullary sheath (4) Nucleus and mitochondria

18.# Given below is diagrammatic cross section of a single loop of human cochlea . **(AIPMT-2008)**



Which one of the following options correctly represnts the names of three different parts?

(1) B: Tectorial membrane , C: Perilymph, D: Secretroy cells

(2) C: Endolymph, D:Sensory hair cells, A: Serum

(3) D: Sensory hair cells, A: Endolymph, B: Tectorial membrane

(4) A: Perilymph, B: Tectorial membrane, C: Endolymph

19. Which one of the following is the correct difference between rod cells and cone cells of our retine?

	Rod cells	**Cone Cells** **(AIPMT-2008)**
(1) Visual acuity	High	Low
(2) Visual pigment contained	Iodopsin	Rhodopsin
(3) Overall function	Vision in poor light	Colour vision and detailed vision bright light
(4) Disitri bution	More concentraed in centre of retina	Evenly distributed all over retina

20. During the propagation of a nerve impulse, the action potential results from the movement of

(1) K^+ ions from extracellular fluid to intracellular fluid **(AIPMT-2008)**

(2) Na^+ ions from intracellular fluid to extracellular fluid

(3) K^+ ions from intracellular fluid to extracellular fluid

(4) Na^+ ions from extracellular fluid to intracellular fluid

21. Cornea transplant in human is almost never rejected. This is because **(AIPMT-2008)**

(1) its cells are least penetrable by bacteria

(2) it has no blood supply

(3) it is composed of enucleated cells

(4) it is a non-living layer

22. Which part of human brain is concerned with the regulation of body temperature? **(AIPMT-2009)**

(1) cerebellum (2) cerebrum

(3) hypothalamus (4) medulla oblongata

23. The nerve centres which control the body temperature and the urge for eating are contained in **(AIPMT Pre.-2010)**

(1) Pons (2) Cerebellum

(3) Thalamus (4) Hypothalamus

24. Select the answer with correct matching of the structure, its location and function. **(AIPMT Mains 2010)**

	Structure	**Location**	**Function**

(1)	Blind spot	Near the place Where optic nerve leaves the eye	Rods and cones are present but inactive here
(2)	Eustachian tube	Anterior part of internal ear	Equalizes air pressure on either sides of tympanic membrane
(3)	Cerebellum	Mid brain	Controls respiration and gastric secretion
(4)	Hypothalamus	Fore brain	Controls Body temperature, urge for eating and drinking

25. The purplish red pigment rhodopsin contained in the rods type of photoreceptor cells of the human eye, is a derivative of: **(AIPMT Pre.-2011)**

(1) Vitamin B_1 (2) Vitamin C (3) Vitamin D (4) Vitamin A

26. The human hind brain comprises three parts, one of which is **(AIPMT Pre.-2012)**

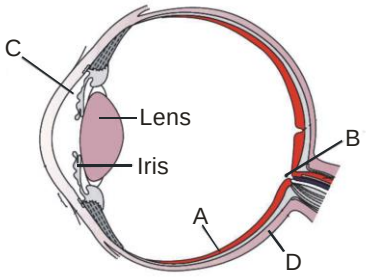
(1) Spinal cord (2) Corpus callosum (3) Cerebellum (4) Hypothalamus

27. Which part of the human ear plays no role in hearing as such but is otherwise very much required? **(AIPMT Pre.-2012)**

(1) Eustachian tube (2) Organ of corti

(3) Vestibular apparatus (4) Ear ossicles

28. The supportive skeletal structures in the human external ears and in the nose tip are examples of: **(AIPMT Mains 2012)**



(1) Ligament (2) areolar tissue (3) bone (4) cartilage

29.# Parts A, B, C and D of the human eye are shown in the diagram. Select the option which gives correct identification along with its functions/characteristics: **(NEET-2013)**

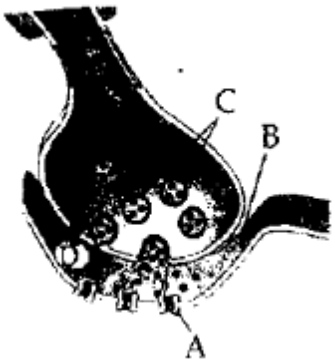
(1) D-Blind spot-has only a few rods and cones

(2) B-Aqueous chamber-reflects the light which does not pass through the lens.

(3) C- Choroid- is anterior part forms ciliary body

(4) A-Retina - contains photo receptors - rods and cones.

30.# A diagram showing axon terminal and synapse is given. Identify correctly at least two of A-D. **(NEET-2013)**



(1) B - Synaptic connection, D - K^+
(2) A - Neurotransmitter, B - Synaptic cleft
(3) C - Neurotransmitter, D - Ca^{++}
(4) A - Receptor, C- Synaptic vesicles

31. Stimulation of a muscle fiber by a motor neuron occurs at: **(AIPMT-2014)**
(1) the neuromuscular junction
(2) the transverse tubules
(3) the myofibril
(4) the sacroplasmic reticulum

32. Injury localized to the hypothalamus would most likely disrupt: **(AIPMT-2014)**
(1) Short - term memory
(2) Co - ordination during locomotion
(3) Executive functions, such as decision making.
(4) Regulation of body temperature

33. Which one of the following statements is not correct? **(AIPMT-2014)**
(1) Retinal is the light absorbing portion of visual photo pigments.
(2) In retina the rods have the photopigments rhodopsin while cones have three different photopigments.
(3) Retinal is a derivative of Vitamin C.
(4) Rhodopsin is the purplish red protein present in rods only.

34. Which of the following regions of the brain is incorrectly paired with its function? **(AIPMT-2015)**
(1) Cerebellum -language comprehension
(2) Corpus callosum - communication between the left and right cerebral cortices
(3) Cerebrum - calculation and contemplation
(4) Medulla oblongata - homeostatic control

35. In mammalian eye, the 'fovea' is the center of the visual field, where: **(Re-AIPMT-2015)**
(1) the optic nerve leaves the eye.
(2) only rods are present.
(3) more rods than cones are found.
(4) high density of cones occur, but has no rods.

36. Destruction of the anterior horn cell of the spinal cord would result in loss of: **(Re-AIPMT-2015)**
(1) voluntary motor impulses
(2) commissural impulses
(3) integrating impulses
(4) sensory impulses

37. Photosensitive compound in human eye is made up of: **(NEET-1-2016)**

(1) Transducin and Retinene (2) Guanosine and Retinol
(3) Opsin and Retinal' (4) Opsin and Retinol

38. Choose the **correct** statement. **(NEET-2-2016)**
(1) Receptors do not produce graded potentials.
(2) Nociceptors respond to changes in pressure.
(3) Meissner's corpuscles are thermoreceptors.
(4) Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus.

39. Receptor sites for neurotransmitters are present on: **(NEET-2017)**
(1) membranes of synaptic vesicles (2) pre-synaptic membrane
(3) tips of axons (4) post-synaptic membrane

40. Good vision depends on adequate intake of carotene rich food. **(NEET-2017)**
Select the best option from the following statements.
(a) Vitamin A derivatives are formed from carotene
(b) The photopigments are embedded in the membrane discs of the inner segment
(c) Retinal is a derivative of Vitamin A.
(d) Retinal is a light absorbing part of all the visual photopigments
Options :
(1) (a) and (b) (2) (a), (c) and (d) (3) (a) and (c) (4) (b), (c) and (d)

41. Myelin sheath is produced by **(NEET-2017)**
(1) Schwann cell and Oligodendrocytes (2) Astrocytes and Schwann cells
(3) Oligodendrocytes and Osteoclasts (4) Osteoclasts and Astrocytes

42._ Which of the following structures or regions is *incorrectly* paired with its function? **(NEET-2018)**

(1)	Medulla oblongata:	:	controls respiration and cardiovascular reflexes.
(2)	Corpus callosum	:	band of fibers connecting left and right cerebral hemispheres.
(3)	Hypothalamus	:	production of releasing hormones and regulation of temperature, hunger and thirst.
(4)	Limbic system	:	consists of fibre tracts that interconnect different regions of brain; controls movement.

43._ The transparent lens in the human eye is held in its place by **(NEET-2018)**
(1) ligaments attached to the ciliary body
(2) smooth muscles attached to the ciliary body
(3) smooth muscles attached to the iris
(4) ligaments attached to the iris

44._ Nissl bodies are mainly composed of **(NEET-2018)**
(1) Proteins and lipids (2) Free ribosomes and RER
(3) Nucleic acids and SER (4) DNA and RNA

45. Which of the following statements is correct? **(NEET-1-2019)**
(1) Cornea consists of dense matrix of collagen and is the most sensitive portion of the eye

(2) Cornea is an external, transparent and protective proteinacious covering of the eye-ball.
(3) Cornea consists of dense connective tissue of elastin and can repair itself.
(4) Cornea is convex, transparent layer which is highly vascularised.

46. Which part of the brain is responsible for thermoregulation? **(NEET-1-2019)**
(1) Medulla oblongata (2) Cerebrum (3) Hypothalamus (4) Corpus callosum

47. Which of the following statements is not correct? **(NEET-2-2019)**
(1) An action potential in an axon does not move backward because the segment behind is in a refractory phase.
(2) Depolarization of hair cells of cochlea results in the opening of the mechanically gated Potassium-ion channels.
(3) Rods are very sensitive and contribute to daylight vision.
(4) In the knee-jerk reflex, stimulus is the stretching of muscle and response is its contraction.

48. Which of the following receptors are specifically responsible for maintenance of balance of body and posture ? **(NEET-2-2019)**
(1) Basilar membrane and otoliths (2) Hair cells and organ of corti
(3) Tectorial membrane and macula (4) Crista ampullaris and macula

PART - II : AIIMS QUESTION (PREVIOUS YEARS)

1. One 'Common example of simple reflex is **(AIIMS-2008)**
(1) tying your shoe laces while talking to another person and not looking at them
(2) watering of mouth at the sight of a favourite food
(3) climbing up a stairs in dark without stumbling
(4) closing of eyes when strong light is flashed across them

2. Injury to vagus nerve in humans is not likely to affect **(AIIMS-2008)**
(1) tongue movements
(2) gastrointestinal movements
(3) pancreatic secretion
(4) cardiac movements

3. A person who shows unpredictable moods, outbursts of emotions, quarrelsome behaviour and conflicts with others is suffering from **(AIIMS-2009)**
(1) Borderline personality disorder (BPD) (3) mood disorder
(3) Addictive disorder (4) schizophrenia

4. Which of the following nerves arises from organ of Corti? **(AIIMS-2009)**
(1) Olfactory nerve (2) Cochlear-nerve
(3) Abducens nerve (4) Glossopharyngeal

5. Bipolar nerve cells are present in **(AIIMS-2012)**

(1) Skin tactile corpuscles (2) Spinal cord

(3) Retina of eye (4) All of the these

6. Fenestra ovalis is the opening of – **(AIIMS-2012)**

(1) Cranium (2) Tympanum (3) Tympanic cavity (4) Brain

7. Multipolar nerve cells are present in **(AIIMS-2012)**

(1) Cochlea (2) Dorsal root ganglia of spinal cord

(3) Retina of eye (4) Brain

8. Neurons receive signals through their _____ and send signals to other neurons through their their_____. **(AIIMS-2013)**

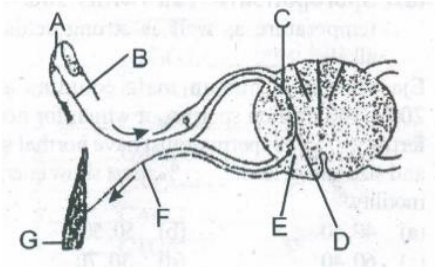
(1) dendrites ..... receptors (2) end feet..... cell bodies and dendrites

(3) cell bodies and dendrites .....axons (4) transmitter vesicles.....axons

9. Which of the following ions are required for nerve conduction? **(AIIMS-2016)**

(1) Ca^{++}, Na^{+} and K^{+} (2) Ca^{++} and Mg^{++} (3) Mg^{++} and K^{+} (4) Na^{+} and K^{+}

10. The following diagram indicates the reflex arc. Identify the parts labelled as A, B, C, D, E, F and G. Choose the correct option. **(AIIMS-2016)**



(1) A = sense organ; B = sensory nerve; C = dorsal horn; D = interneuron; E = ventral horn; F = motor nerve; G = effector

(2) A = sense organ; B = sensory nerve; C = ventral horn; D = interneuron; E = dorsal horn; F = motor nerve; G = effector

(3) A = effector; B = motor nerve; C = dorsal horn; D = interneuron; E = ventral horn; F = sensory nerve; G = effector

(4) A = effector; B = motor nerve; C = ventral horn; D = interneuron; E = dorsal horn; F = sensory nerve; G = sense organ

11. The cavity of diencephalon is known as **(AIIMS-2017)**

(1) first ventricle (2) second ventricle (3) third ventricle (4) fourth ventricle

12. Which one is an incorrect match? **(AIIMS-2017)**

(1) Glucoma-Abnormal high pressure on liquid of eye

(2) Eustachian tube-Connects middle ear cavity with pharynx

(3) Caloreceptor-Heat

(4) Interoreceptor-Touch

Answers

EXERCISE - 1

SECTION - A

1.	(4)	**2.**	(4)	**3.**	(2)	**4.**	(1)	**5.**	(2)	**6.**	(1)	**7.**	(4)
8.	(4)	**9.**	(2)	**10.**	(4)	**11.**	(1)						

SECTION - B

1.	(2)	**2.**	(1)	**3.**	(4)	**4.**	(1)	**5.**	(2)	**6.**	(4)	**7.**	(1)
8.	(1)	**9.**	(4)	**10.**	(1)	**11.**	(1)	**12.**	(2)	**13.**	(1)	**14.**	(2)
15.	(4)												

SECTION - C

1.	(3)	**2.**	(3)	**3.**	(2)	**4.**	(2)	**5.**	(1)	**6.**	(2)	**7.**	(3)
8.	(4)	**9.**	(1)										

SECTION - D

1.	(4)	**2.**	(4)	**3.**	(3)	**4.**	(4)	**5.**	(1)	**6.**	(1)	**7.**	(3)
8.	(3)	**9.**	(1)	**10.**	(1)	**11.**	(4)	**12.**	(4)	**13.**	(3)	**14.**	(3)
15.	(1)	**16.**	(3)	**17.**	(4)	**18.**	(3)	**19.**	(1)	**20.**	(1)	**21.**	(3)
22.	(4)	**23.**	(3)	**24.**	(2)	**25.**	(1)	**26.**	(1)				

SECTION - E

1.	(2)	**2.**	(2)	**3.**	(1)	**4.**	(1)	**5.**	(2)	**6.**	(4)	**7.**	(4)
8.	(1)	**9.**	(2)	**10.**	(4)	**11.**	(4)	**12.**	(3)	**13.**	(4)	**14.**	(4)
15.	(4)	**16.**	(1)	**17.**	(3)	**18.**	(3)	**19.**	(1)	**20.**	(1)	**21.**	(4)
22.	(4)	**23.**	(3)	**24.**	(3)	**25.**	(3)	**26.**	(4)	**27.**	(3)	**28.**	(1)
29.	(2)	**30.**	(3)	**31.**	(2)	**32.**	(2)	**33.**	(4)	**34.**	(2)	**35.**	(1)
36.	(4)												

SECTION – F

1.	(3)	**2.**	(1)	**3.**	(3)	**4.**	(1)	**5.**	(2)	**6.**	(2)	**7.**	(4)
8.	(3)	**9.**	(2)	**10.**	(2)	**11.**	(4)	**12.**	(2)	**13.**	(2)	**14.**	(2)
15.	(1)	**16.**	(2)	**17.**	(1)	**18.**	(3)	**19.**	(2)	**20.**	(4)	**21.**	(3)
22.	(2)	**23.**	(2)	**24.**	(1)	**25.**	(4)	**26.**	(4)	**27.**	(3)	**28.**	(2)

SECTION - G

1.	(4)	**2.**	(3)	**3.**	(1)	**4.**	(3)	**5.**	(1)	**6.**	(1)	**7.**	(4)
8.	(2)	**9.**	(3)	**10.**	(3)	**11.**	(4)	**12.**	(3)				

MISCELLANEOUS QUESTIONS

1.	(1)	**2.**	(3)	**3.**	(3)	**4.**	(1)	**5.**	(3)	**6.**	(1)	**7.**	(3)

EXERCISE - 2

1.	(4)	**2.**	(1)	**3.**	(4)	**4.**	(2)	**5.**	(5)	**6.**	(3)		

EXERCISE - 3

PART- I

1.	(2)	**2.**	(3)	**3.**	(3)	**4.**	(2)	**5.**	(2)	**6.**	(1)	**7.**	(1)
8.	(3)	**9.**	(1)	**10.**	(4)	**11.**	(3)	**12.**	(4)	**13.**	(1)	**14.**	(4)
15.	(1)	**16.**	(4)	**17.**	(1)	**18.**	(4)	**19.**	(3)	**20.**	(4)	**21.**	(2)
22.	(3)	**23.**	(4)	**24.**	(4)	**25.**	(4)	**26.**	(3)	**27.**	(3)	**28.**	(4)
29.	(4)	**30.**	(4)	**31.**	(1)	**32.**	(4)	**33.**	(3)	**34.**	(1)	**35.**	(4)
36.	(1)	**37.**	(3)	**38.**	(4)	**39.**	(4)	**40.**	(2)	**41.**	(1)	**42.**	(4)
43.	(1)	**44.**	(2)	**45.**	(1)	**46.**	(3)	**47.**	(3)	**48.**	(4)		

PART- II

1.	(4)	**2.**	(1)	**3.**	(1)	**4.**	(2)	**5.**	(3)	**6.**	(3)	**7.**	(4)
8.	(3)	**9.**	(1)	**10.**	(1)	**11.**	(3)	**12.**	(4)				

Self Practice Paper (SPP)

1. Four healthy people in their twenties got involved in injuries resulting in damage and death of a few cells of the following. Which of the cells are least likely to be replaced by new cells?

(1) Osteocytes (2) Melpighian layer of the skin

(3) Liver cells (4) Neurons

2. Sympathetic nervous system slows down digestion and increase heart rate in animals. Which of the following effects is not consistent with this?

(1) Inhibition of flow of saliva (2) Inhibition of conversion of glycogen to glucose

(3) Bronchi dilation (4) Constriction of vessels supplying blood to stomach

3. Co-ordination is achieved through nervous system as well as circulatory system. The respective agents are:

(1) neurotransmitters and neurohumors (2) sugars and neurotransmitters

(3) neurotransmitters and hormones (4) neurotransmitters and sugars

4. A touch on the right hand stimulates neurons in

(1) Left somatic sensory area (2) Right somatic sensory area

(3) Both (1) and (2) (4) Temporal area

5. Injury to vagus nerve in humans is not likely to affect

(1) tongue movements (2) gastrointestinal movements

(3) pancreatic secretion (4) cardiac movements

6. Small lesions on spinal tissue, slip disc in spinal column and micro cancer like tumour are detected by

(1) Magnetic resonance imaging method

(2) Sonography method

(3) Positron Emission Tomography method

(4) X-ray Radiography method

7. Suppose you were a neuroscientist and had beed given a sample of a new snake venom. You test its effect on action at a synapse, and find that it increases the magnitude of the normal depolarizing excitatory response. The most likely explanation for this is that the venom is:

(1) blocking release of the neurotransmitter from the vesicles

(2) binding with the neurotransmitter receptors to interfere with neurotransmitter binding

(3) binding with the neurotransmitter receptors to mimic the action of the neurotransmitter.

(4) acting to break-down the neurotransmitter in the synaptic cleft

8. Small hyperpolarizing changes in potential at the post synaptic membrane induced by chemical transmitters are :

(1) inhibitory post-synaptic potentials (2) excitatory post synaptic potentials

(3) minimal end plate potentials (4) cumulative post-synaptic potentials

9.# Mouth becomes watery when we look on the delicious food is due to

(1) Olfactory response (2) Hormonal response (3) Neural response (4) Optic response

10. What is the role of acetylcholine in muscle contraction?

(1) It is used to link a nerve pulse with receptors in the muscle
(2) It makes upper part of the muscle fibres
(3) The myosin heads use acetylcholine to bind to actin filaments
(4) It maintains contraction of a muscle in a manner similar to a brake

11. The main reason for some neurons being myelinated is to:
(1) protect the nerve against physical damage
(2) increase the diameter of the axon to slow the speed of the action potential
(3) increase the speed of the action potential
(4) decrease the possibility of false triggering from nearby muscle activity

12. Which of the following would not be associated with a decrease in the conduction velocity of nerve impulses in a neuron?
(1) Increasing the length of the axon (2) Removing the myelin sheath
(3) Cooling the axon (4) Reducing extracellular Na^+ concentration

13. The glial cells that form the blood brain barrier by lining brain capillaries are the:
(1) oligodendroglial cells (2) astrocytes
(3) Schwann cells (4) Ranvier cells

14. If the vagus nerves (main nerves of the parasympathetic nervous system) were cut, which of the following would be true?
(1) The heart would stop beating
(2) The diaphragm would be paralysed
(3) Adrenalin secretion by the adrenal gland would cease
(4) None of (1), (2) and (3)

15. Which statement about the vertebrate nervous system is false?
(1) Relaxation of a muscle is caused by nerve impulses in inhibitory neurons going to the muscle from the spinal cord
(2) After completely severing the brain from the spinal cord, reflex withdrawal of the foot from a painful stimulus could still occur
(3) In a simple reflex, the sequence followed by information is sensory receptor, sensory neuron, interneuron, motor neuron, muscle cells.
(4) The sympathetic nervous system activates the body's responses to stress, for example, by increasing heart beat and decreasing blood flow to the gut

16. If you were to insert a tiny heating probe into the thermoregulatory centre of the hypothalamus and use it to raise the temperature of the hypothalamus slightly, what is most likely to occur?
(1) Shivering (2) Decreased circulation in the skin
(3) Decreased activity of the sweat glands (4) A drop in body temperature

17. Transmission of nerve impulse can be recorded with the help of
(1) Oscilloscope (2) Microscope (3) Spirometer (4) Microdensitometer

18. Ventricles of brain are lined by the cells called
(1) Ependymal cells (2) Neurons cells (3) Neuroglea (4) Schwann's cells

19. A sound is perceived (realised) when:
(1) it is first created at its source

(2) the sound wave vibrates the ear drum
(3) vibrations within the inner ear activate a nerve impulse
(4) the nerve impulse initiated by a sound wave from the inner ear reaches the brain

20. Which of the cells in retina are almost absent in many nocturnal animals?
(1) Rods (2) Cones (3) Epithelial cells (4) Neurons

21. Which part of the mammalian brain controls muscular co-ordination?
(1) Cerebrum (2) Medulla oblongata (3) Cerebellum (4) Corpus callosum

22. Which one of the following is mainly used by the brain?
(1) Glucose (2) Ascorbic acid (3) Folic acid (4) Glutamic acid

23. In a car accident a person has the sensory neurons to their hand severed with no other damage being recorded. This person will:
(1) regain feeling as the motor neurons will adapt carry sensory impulses
(2) be unable to feel and move their hand as feeling and movement is carried by the same neurons
(3) regain feeling as the motor nerves replicate and replace the damage neurons
(4) be unlikely to regain feeling in the hand but will be able to move it

24. Lens, retina and cornea of vertebrate eye are developed from:
(1) only ectoderm (2) ectoderm and mesoderm
(3) ectoderm, mesoderm and endoderm (4) ectoderm and endoderm

25. When we migrate from dark to light, we fall to see for some time but after a time visibility become normal. It is an example of
(1) accommodation (2) adaptation (3) mutation (4) photoperiodism

26. The iris of the human eye functions to:
(1) focus the image on the retina (2) restrict the movement of the lens
(3) shape the retina (4) regulate the amount of light entering the eye

27. Which sequence best describes a simple reflex are such as the knee-jerk reflex?
(1) Sensory neuron $\rightarrow$ interneuron $\rightarrow$ motor neuron $\rightarrow$ effector cell
(2) Sensory neuron $\rightarrow$ interneuron $\rightarrow$ interneuron $\rightarrow$ motor neuron
(3) Sensory neuron $\rightarrow$ motor neuron $\rightarrow$ interneuron
(4) Sensory neuron $\rightarrow$ motor neuron $\rightarrow$ effector cell

28. In the central nervous system the amount of voltage change required to open enough sodium channels to initiate a nerve impulse is referred to as the :
(1) refractory potential (2) threshold potential
(3) action potential (4) polarization potential

29. Increased sympathetic nervous system stimulation of efferent arterioles result in:
(1) decreased filtrate production (2) increased filtrate production
(3) no change in filtration rate (4) increased kidney function

30. Which of the following statements is correct about the nervous system in humans?

(i) The sympathetic nervous system promotes "light or flight" responses.

(ii) Organs in the body are only controlled or influenced by either the sympathetic or parasympathetic nervous systems.

(iii) The parasympathetic nervous system promotes food digestion and relaxation in the body.

(1) (i) and (ii) only (2) (i) and (iii) only (3) (ii) and (iii) only (4) (i), (ii) and (iii)

31. As a nerve impulse passes along an axon:

(1) the membrane potential changes from positive to negative and then back again

(2) sodium ions flow out through ion channels and potassium ions flow in

(3) sodium channels open as the membrane potential becomes less negative

(4) the sodium-potassium pump moves sodium ions into the cell

32. A main function of the autonomic nervous system, which consists of the sympathetic and parasympathetic division, is to:

(1) act as an inhibitory system for skeletal muscle

(2) control the activity of a variety of secretory cells throughout the body

(3) communicate between the two halves of the brain

(4) control involuntary reflexes such as the knee-jerk response

33. The function of monitoring the temperature of body is performed by:

(1) hypothalamus (2) thalamus (3) medulla oblongata (4) spinal cord

34. In the human eye the retina functions to:

(1) maintain a constant amount of light into the eye

(2) change the shape of the lens and hence the focus of the image

(3) turn light energy into nerve impulses

(4) provide protection against physical damage

35. One of the alternatives below defines the layers of the retina in the correct sequence. Which one? (**Note:** The first layer in each sequence is supposed to be located next to the jellylike vitreous humor that fills the eyeball.

(1) Pigmented cells-bipolar cells-ganglion cells-photoreceptors

(2) Photoreceptors-pigmented cells-ganglion cells-bipolar cells

(3) Ganglion cells-bipolar cells-photoreceptors-pigmented cells

(4) Photoreceptors-bipolar cells-ganglion cells-pigmented cells

36. The region of the brain that integrates visceral activities, body temperature, and heart beat is the:

(1) medulla oblongata (2) hypothalamus (3) cerebrum (4) cerebellum

37. Sympathetic innervation has inhibitory influence on:

(1) salivation, peristalsis, bladder contraction

(2) salivation, peristalsis, glycogenesis

(3) peristalsis, gut secretions, adrenalin secretion

(4) gut secretions, adrenalin secretion, heart beat

38. The general functions of the nervous system include which of the following?

(i) Integration. (ii) Motor output. (iii) Sensory input.

(1) Only (i) (2) Only (ii) (3) Only (iii) (4) (i), (ii) and (iii)

39. A rare disorder where there is a complete absence of eyes is called:

(1) xerophthalmia (2) anophthalmia
(3) Tay Sach's disease (4) Such disorder is not observed till now

40. The cornea is a very important component of the human eye. The main function of the cornea is to:
(1) bend the light before it reaches the lens
(2) provide structural support to the eye
(3) contain a concentrated amount of cone cells in the correct orientation
(4) change the shape of the lens to enable the image to be focused on the retina

41. The sympathetic nervous system:
(1) controls sleep patterns including REM (rapid eye movement) sleep and dreaming
(2) prepares the body for intense energy consuming activities
(3) maintains the body's vital activities during sleep
(4) enables efficient digestion and rest

42. The human hind brain comprises three parts, one of which is
(1) Spinal cord (2) Corpus callosum (3) Cerebellum (4) Hypothalamus

43. Which of the following is false?
(1) In vertebrate sensory neurons, nerve impulses normally travel both away from and toward the cell body
(2) The resting potential of a neuron is maintained by membrane "pumps" actively transporting sodium into and potassium out of the cell
(3) Neurons operate with two main types of electrical signal: slow graded potentials and fast action potentials
(4) Saltatory conduction involves nerve impulses "jumping" between regions of the axon where the myelin sheath is missing

44. Which part of brain is involved in the contraction of pupil in response to bright light?
(1) Inferior colliculus (2) Superior colliculus (3) Hypothalamus (4) Thalamus

45. Nissl's granules are present in the ..... and contain..... respectively
(1) Muscle cells and deoxyribo nucleic acid (2) Mast cells and RNA
(3) Osteocytes and DNA (4) Neuron and RNA

SPP Answers

1.	(4)	**2.**	(2)	**3.**	(3)	**4.**	(1)	**5.**	(1)	**6.**	(1)	**7.**	(3)
8.	(1)	**9.**	(3)	**10.**	(1)	**11.**	(3)	**12.**	(1)	**13.**	(2)	**14.**	(4)
15.	(1)	**16.**	(4)	**17.**	(1)	**18.**	(1)	**19.**	(4)	**20.**	(2)	**21.**	(3)
22.	(1)	**23.**	(4)	**24.**	(1)	**25.**	(2)	**26.**	(4)	**27.**	(4)	**28.**	(2)
29.	(2)	**30.**	(2)	**31.**	(3)	**32.**	(2)	**33.**	(1)	**34.**	(3)	**35.**	(3)
36.	(2)	**37.**	(1)	**38.**	(4)	**39.**	(2)	**40.**	(1)	**41.**	(2)	**42.**	(3)
43.	(2)	**44.**	(2)	**45.**	(4)								