NEURAL CONTROL & COORDINATION

1. Part of brain involved in the interpretation, storage of information and initiation of response on the basis of past experience is called association area it is :
(A) Neither sensory nor motor
(B) Memory bank
(C) Motor area
(D) Sensory area
(1) C and D
(2) A and B
(3) B and D
(4) B and C

2. At least how may afferent and efferent neurons are involved is any reflex pathway ?
(1) One afferent, one efferent
(2) One afferent, one efferent and one interneuron
(3) One afferent, one efferent and two interneuron
(4) Two afferent, Two efferent and one interneuron

3. Transmission of a nerve impulse across…… is very similar to impulse conduction along a single axon.
(1) Ranvier's node
(2) Chemical synapse
(3) Electrical synapse
(4) Myelin sheath

4. In mechanism of vision, action potential is developed in :
(1) Pigmented layer of retina
(2) Photo receptor cells
(3) Ganglionic cells
(4) Optic nerve

5. Gray matter gives the greyish appearence due to highly concentrated :
(1) Axon
(2) Myelin sheath
(3) Cell bodies
(4) Dendron

6. The cerebral hemispheres are connected by a tract of nerve fibres called corpus callosum. These fibres are covered by :
(1) Myelin sheath or medullary sheath
(2) Unmylinated or non medullated
(3) Gray matter
(4) Neurilemma

7. The medulla contains centres which controls :
(1) respiration
(2) Cardiovascular reflexes
(3) Gastric secretion
(4) All of these

8. Polarized and depolarized conditions of neuron are maintained by which specific ions respectively?
(1) K^+ and Na^+
(2) Na^+ and K^+
(3) Ca^{+2} and K^+
(4) Na^+ and Ca^{+2}

9. Along with which structure limbic system is also involved in regulation of sexual behaviour, expression of emotional reaction and motivation.
(1) Thalamus
(2) Association area
(3) Corpus callosum
(4) Hypothalamus

10. The inner parts of cerebral hemisphere and group of associated deep structure form a complex structure called limbic systems these associated deep structures include
(A) Amygdala
(B) Hippocampus
(C) Outer parts of cerebral cortex
(D) Association area
(1) A and D
(2) A and B
(3) A and C
(4) C and D

11. Motor areas, sensory areas and large regions called as association areas are present in :
(A) Cerebral cortex
(B) White matter
(C) Inner part of cerebral hemisphere
(D) Gray matter
(1) B and C (2) A and C
(3) A and B (4) A and D

12. When the sensation for white light is produced?

(1) By various combination of cones & their photopigment

(2) When the cones are stimulated equally

(3) When the cones are stimulated unequally

(4) By various combination of rods and their photopigments

13. Short fibers which branch repeatdly, project out of cell body and also contains Nissl's granules called

(1) Dendrites (2) Cyton

(3) Axon (4) Axon terminale

14. The photosensitive compounds (Photopigments) in the human eyes are composed of opsin (a protein) and retinal this retinal is formed by :

(1) an aldehyde of vitamin -A

(2) a ketone of vitamin -A

(3) an aldehyde of vitamin -D

(4) a ketone of vitamin -D

15. At the base of cochlea, the scala vestibuli ends at....., where as scala tympani terminates at the ..... which opens to the middle ear.

(1) oval window, round window

(2) round window, oval window

(3) circular window, oval window

(4) round window, circular window

16. In mechanism of hearing, impulses are trasnsmitted by afferent fibres via auditory nerves to the auditory cortex of the brain, which cells remain inthe close contact with the afferent nerves fibres.

(1) Basal end of hair cell.

(2) Apical part of each hair cell.

(3) Any part of hair cells.

(4) Stereocilia of hair cells.

17. Which one is incorrect statement regarding ear :

(1) Each semicircular canal lies in a different plane at right angles to each other.

(2) The membranous semicircular canals are suspended in endolymph of bony canals

(3) Saccule & utricle contains a projecting ridge called macula

(4) Crista & macula are the specific receptors of the vestibular apparatus responsible for balance & posture.

18. Eustachian tube connects the middle ear to ..... which helps in equalising the pressure on either side of.....

(1) Pharynx, basilar membrane

(2) Pharynx, tympanic membrane

(3) Buccal cavity, reissner's membrane

(4) Buccal cavity, tympanic membrane

19. What is true regarding mechanism of hearing

(1) The movements of hair cells bend basilar membrane, pressing it against the tectorial membrane

(2) The movements of basilar membrane bend the tectorial membrane pressing it against hair cells

(3) The movements of tectorial membrane bend the hair cells pressing it against the basilar membrane

(4) The movements of basilar membrane bend the hair cells pressing them against the tectorial membrane

20. The specific receptors of the vestibular apparatus responsible for maintenance of balance of body & posture are

(A) Organ of corti (B) Crista

(C) Macula (D) Cochlea

(1) A and D (2) B and C

(3) A and C (4) C and D

21. In an accident, a person's brain was injured due to which body temperature, hunger and water balance are not being regulated. Which one of the following parts of his brain is affected ?

(1) Medulla oblongata (2) Cerebellum

(3) Hypothalamus (4) Corpora quadrigemina

22. Which one of the following statements are correct?

(i) Impulse transmission through electrical synapse is slow than a chemical synapse

(ii) Unmyelinated nerve fibres are commonly found in ANS and somatic neural systems.

(iii) Multipolar neurons are specially found in cerebral cortex.

(iv) Neural organisation is very simple in human beings.

(1) (i) and (ii)

(2) (ii) and (iv)

(3) (i) and (iii)

(4) (ii) and (iii)

23. Neuron is specific for following characters like
(1) Modification, destruction and transmission of stimuli
(2) Detection, receiving and transmission of stimuli
(3) Formation, destruction and transmission of stimuli
(4) Modification, receiving and destruction of stimuli

24. Select the part of nervous system which transmit impulses from cerebrum to gastrocnemius muscle of body –
(1) Sympathetic neural system
(2) Parasympathetic neural system
(3) Somatic neural system
(4) Basal cortex of brain

25. Which statement is true for nerve conduction?
(1) During resting stage axonal membrane is less permeable for K^+ and more permeable for Na^+.
(2) Concentration gradient generated when active transportation of ions occurs by Na^+–K^+ pump.
(3) During transmission of impulse Na^+ out flux continuously.
(4) Rise in stimulus induced permeability to Na^+ is long lived.

26. Cerebrum has more number of neurons on its surface due to its –
(1) Narrow surface with more gyri & sulci
(2) Convoluted surface with less gyri & sulci
(3) There are only pseudounipolar neurons present with gyri & sulci
(4) None of these

27. Transmission of nerve impulse is unidirectional due to –
(1) insulation of nerve fibre by medullary sheath
(2) neurotransmitter releases only at axon ending.
(3) neurotransmitter releases only at dendrite ends
(4) sodium pump starts from cyton and proceeds upto axon ends.

28. Which one of the following groups of neurotransmitter is inhibitory in nature ?
(1) Histamine, ACh, serotonin
(2) Serotonin, Glutamate, Ach
(3) Serotonin, GABA, Dopamine
(4) GABA, Glutamate, Glycine

29. These are few steps of synaptic transmission. Arrange them in correct order of synaptic transmission.
(a) Action of cholinestrase on acetylcholine decomposes it into choline & acetate.
(b) Development of AP causes entry of Ca^{+2} into axon telodendria.
(c) Development of EPSP causes opening of Na^+ channels
(d) Release of ACh into synaptic cleft after bursting of vesicles.
(1) $d \rightarrow c \rightarrow b \rightarrow a$ (2) $b \rightarrow d \rightarrow c \rightarrow a$
(3) $b \rightarrow d \rightarrow a \rightarrow c$ (4) $d \rightarrow a \rightarrow b \rightarrow c$

30. Cerebral cortex is referred to as gray matter due to –
(1) Fibers of tract covered by myelin sheath
(2) Presence of neuron cell bodies collection
(3) Due to presence of association area
(4) Due to (1) and (2) both

ANSWERS KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	2	1	3	3	3	1	4	1	4	2	4	2	1	1	1	1	2	2	4	2
Que.	21	22	23	24	25	26	27	28	29	30										
Ans.	3	4	2	3	2	1	2	3	2	2										