MCQ L21

1. Attenuation reflex: *a) Is activated by soft low frequent sounds* *b) Affects only the ear near the source of the sound.* *c) Is still intact when facial nerve become paralyzed* *d) Has incomplete protective function* *e) Has very short latent period*	***D***
2. Middle ear contain which of the following structures : *a) Modiolus* *b) Labyrinth* *c) Vestibular apparatus* *d) Ossicles* *e) Perilymph*	***D***
3. Which part of auditory system is most sensitive to damage from sudden loud sounds : *a) Hair in cochlea* *b) Auditory nerve* *c) Ear drum*	***A***
4. Middle ear ms : *a) Contract in response to high frequency sounds* *b) Reduce the sensitivity of person to his own sound* *c) Help free inward and outward movement of stapes into oval window*	***B***
5. About middle ear : *a) Connected to atmosphere* *b) Responsible for amplification of sound* *c) All its ms are supplied by trigeminal nerve*	***B***

6. Round window in the middle ear: *a) Closed by the tympanic membrane.* *b) Help to make rarefaction phase in cochlear fluid when the oval window has condensation phase.* *c) Connect the middle ear with the nasopharynx.* *d) Is responsible for Otitic barotrauma during rapid descent in aeroplane.* *e) Help transmission of sound vibrations from tympanic membrane to the fluid in scala vestibuli in the cochlea.*	***B***
7. The primary function of the bones of the middle ear is to: *a) Amplify the sound stimulus.* *b) Filter high-frequency sounds from the sound stimulus.* *c) Enable the direction of a sound stimulus to be detected.* *d) Enhance the ability to distinguish different sound frequencies.* *e) Protect the ear from damage.*	***A***
8. Functions of external auditory canal include: *a) Impedance matching.* *b) Magnification of sound waves 22 times.* *c) Aeration of middle ear.* *d) Equalize the pressure on both sides of the tympanic membrane.* *e) Maintain the proper humidity and temp for ear drum functions.*	***E***
9. About the middle ear: *a) Responsible for amplification of sound waves.* *b) Connected to atmosphere.* *c) Bony ossicles act as vibrators.* *d) All its muscles are supplied by trigeminal cranial nerve.* *e) The oval window is closed by 2ry tympanic membrane*	***A***

10. The middle ear: *a) Is responsible for transmission of sound waves from nasopharynx to cochlea without great loss in its energy.* *b) Is a fluid filed cavity in temporal bone.* *c) Is bounded medially by tympanic membrane.* *d) Contains tensor tympani muscle which is attached to the long process of incus.* *e) Is connected with nasopharynx via Eustachian tube.*	***E***
11. Middle ear muscles: *a) Are supplied by facial nerve only.* *b) Contract in respond to high frequent sounds.* *c) Help free inward and outward movements of stapes into oval window.* *d) Protect the cochlear structure against gunshot sounds.* *e) Reduce the sensitivity of the person to his own speech.*	***E***
12. Round window in the middle ear: *a) Closed by the tympanic membrane* *b) Connect the middle ear with the nasopharynx* *c) Is responsible for Otitic barotrauma during rapid descent in aeroplane* *d) Help to make rarefaction phase in cochlear fluid when the oval window has condensation phase* *e) Help transmission of sound vibrations from tympanic membrane to the fluid in scala vestibuli in the cochlea.*	***D***
13. Function of tympanic membrane is regulated by: *a) Tensor tympani.* *b) Tensor palati.* *c) Stapedius.* *d) Annular ring of tympanic membrane.* *e) Round window.*	***A***

14. Which of the following are incorrectly paired? *a) Tympanic membrane: manubrium of malleus* *b) Helicotrema: apex of cochlea* *c) Foot plate of stapes: oval window* *d) Tympanic membrane: cochlea* *e) Stapedius muscle: tensor tympani muscle*	***D***
15. In the middle ear, all the following is true except: *a) There are 3 bony ossicles, 2 skeletal muscles, 2 nerves and is separated from the internal ear by 2 foramena .* *b) Eustachian tube equalizes pressure at both sides of tympanic membrane.* *c) Handle of mallus is attached to the back of the tympanic membrane.* *d) The footplate of' the stapes lies in relation to the round window.* *e) Tensor tympani muscle decreases vibrations of tympanic membrane.*	***D***
16. Attenuation tympani reflex caused by loud sounds leads to: *a) Contraction of both the stapedius and tensor tympani muscles.* *b) Relaxation of the above 2 muscles.* *c) Contraction of the stapedius and relaxation of the tensor tympani* *d) Relaxation of the stapedius and Contraction of the tensor tympani* *e) None of the above*	***A***
17. Which of the following is the middle ear ossicle that is attached to the tympanic membrane? *a) Columella* *b) Incus* *c) Malleus* *d) Modiolus* *e) Stapes*	***C***

18. Which of the following regarding me attenuation reflex is correct? *a) Can increase intensity of low frequency sound transmission by 30 to 40 decibels* *b) Increases the rigid of the ossicular system, thereby reducing conduction of low frequency sounds* *c) Masks high frequency sounds in a loud environment so lower frequency sounds are more easily heard* *d) Occurs following a latent period of 4 to 8 seconds after the loud sound* *e) Protects the cochlea from the damaging vibrations of relatively quiet but high frequency sounds*	***B***
19. The function of the round window can best be described by which of the following? *a) Provides the correction point for the stapes* *b) Serves to damp out low frequency sounds such as your own voice* *c) Transmits the frequency information into the cochlea from the tympanic membrane* *d) Serves as the pressure relief valve for the cochlea* *e) Transmits amplitude information into the cochlea from the tympanic Membrane*	***D***
20. Impedance matching is between which of the following : *a) external ear and tympanic membrane* *b) tympanic membrane and oval window* *c) two ears* *d) oval window and round window*	***B***

MCQ L22

1. At which location along basilar membrane highest-frequency sound detected? *a) Nearest the oval window.* *b) Farthest from the oval window, near the helicotrema.* *c) Uniformly along the basilar membrane.* *d) At the midpoint of the membrane.* *e) Near the 2nd turn of the cochlea.*	***A***
2. The pitch of sound discrimination by the ear can be explained by: *a) The presence of certain hair cells which discharge with high frequency* *b) The basilar membrane acts as a frequency analyzer.* *c) Low frequency sounds stimulate the base of the cochlea while high frequency stimulates the apex.* *d) Number of impulses reach the auditory cortex.* *e) Rate of discharge of impulses from hair cells*	***B***
3. Depolarization of the hair cells in the cochlea is caused primarily by flow of : *a) K+ into the hair cell.* *b) Na+ into the hair cell* *c) Cl out of the hair cell.* *d) Ca++ into the hair cell.*	***A***
4. The basilar membrane of the cochlea: *a) Is unaffected by movement of fluid in the scala vestibuli.* *b) Covers the oval window and the round window.* *c) Vibrates in a pattern determined by the form of the traveling wave in the fluids in the cochlea.* *d) Vibrates when the body is subjected to linear acceleration.* *e) Consists of 2500 fibers which are stiff at the base and lax at the apex.*	***C***

5. Regarding hair cells of the organ of Corti, which is correct? *a) Outer hair cells are the receptors of hearing.* *b) Inner hair cells are 20000 cells.* *c) Outer hair cells receive 95% of cochlear nerve fibres.* *d) Inner and outer hair cells are depolarized by K+ influx.* *e) Inner hair cells show shortening and elongation which vibration of basilar membrane.*	***D***
6. Regarding middle ear which is correct : *a) responsible of transmission of sound waves from nasopharynx to cochlea without great loss of energy.* *b) Is fluid filled cavity in temporal bone* *c) Bounded medially by tympanic membrane* *d) Connected with nasopharynx by Eustachian membrane* *e) Contain tensor tympani ms which is attached to long process of incus*	***D***
7. Concerning hearing: *a) organ of Corti is found in the semicircular canals.* *b) Eustachian tube connects inner ear with nasopharynx.* *c) auditory pathway is composed of four order neurons.* *d) the depolarization of the hair cells is caused by K+ entry.* *e) function of the primary auditory cortex is to understand the meaning of sound.*	***D***
8. Discrimination of sound frequency depends on: *a) character of organ of Corti.* *b) character of cochlear nerve.* *c) nature of tympanic membrane.* *d) composition of basilar membrane.* *e) nature of endolymph.*	***D***

9. Discrimination of sound frequency depends on: *a) frequency of action potential along cochlear nerve.* *b) response in tympanic membrane.* *c) receptor potential in the organ of Corti.* *d) bony ossicles in middle ear.* *e) nature of basilar fibers in basilar membrane.*	***E***
10. The basilar fibers in the basilar membrane of the cochlea: *a) thick and respond to high frequency sound near the apex.* *b) thin and respond to high frequency sound near the base.* *c) thick and respond to high frequency sound near the base.* *d) thick and respond to low frequency sound near the base.*	**C**
11. Hair cells are stimulated by: *a) bending of their stereocilia toward any direction* *b) movement of endolymph in any direction* *c) bending of stereocilia toward kinocilium* *d) bending of stereocilia away from kinocilium*	**C**
12. Word deafness or auditory aphasia caused by lesion in : *a) MGB* *b) 1ry auditory area* *c) 2ry auditory area*	**C**
13. Auditory information is relayed through which thalamic nucleus? *a) Dorsomedial nucleus* *b) Lateral geniculate nucleus* *c) Medial geniculate nucleus* *d) Ventral posterolateral nucleus* *e) Ventral posteromedial nucleus*	**C**

Where is the auditory cortex primarily located in the brain?

- A) Frontal lobe
- B) Temporal lobe
- C) Parietal lobe
- D) Occipital lobe
  Answer: B) Temporal lobe