



Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)

Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Arrear Examination – May 2025 I Semester

Batch : 2024

Time: 3 Hours

Major : Audiology and Speech Language Pathology

Max. Marks: 100

22BASC02 Anatomy and Physiology of Speech and Hearing

Course outcomes: On the successful completion of the course, students will be able to

1. Understand the basics of anatomical terms and positions, and learn about cells, muscles, and tissues.
2. Acquire knowledge about the development of Ear and the auditory system
3. Know the anatomy and physiology of subsystems of speech and swallowing
4. Obtain anatomy and physiology of external and middle ear
5. Gain knowledge about anatomy and physiology of cochlea, its innervations, electrical potentials and balancing mechanisms.

Part-A

10x1=10

Choose the correct answer

1. The anatomical term that describes a structure closer to the midline of the body
a. Lateral
b. Distal
c. Medial
d. Proximal
CO1K1
2. The larynx develops from the
a. First pharyngeal arch
b. Fourth and sixth pharyngeal arches
c. Otic placode /vesicle
d. Neural tube
CO2K2
3. Phonation, or voice production, occurs due to vibration of the
a. Tongue
b. Lips
c. Vocal folds
d. Velum
CO3K2
4. The malleus, incus, and stapes are the
a. Ossicles
b. Auricles
c. semicircular canals
d. Middle ear muscles
CO4K2
5. The basic structural and functional unit of living organisms is called
a. Tissue
b. Organ
c. Cell
d. System
CO1K2
6. The inner ear, including the cochlea, develops from the
a. First pharyngeal arch
b. Fourth and sixth pharyngeal arches
c. Otic placode/vesicle
d. Neural tube
CO2K1
7. The lips, tongue, and velum contribute to speech production by
a. Generating airflow
b. Modifying the vocal tract
c. Protecting the airway
d. Facilitating swallowing
CO3K3
8. The cochlea and semicircular canal are primarily responsible for.
a. Balance and Hearing respectively
b. Localization and Balance respectively
c. Hearing and Balance respectively
d. Vision and Balance respectively
CO5K4
9. The middle ear's ability to increase sound pressure is known as the
a. Head Shadow effect
b. Transformer function
c. Localization effect
d. Resonance
CO4K3
10. The place theory of hearing suggests that different frequencies are processed
a. By the rate of firing of the auditory nerve
b. At different locations along the basilar membrane
c. By the movement of the ossicles.
d. By the speed of the eustachian tube's response
CO5K4

Part- B
Answer ALL Questions
Each answer should not exceed 400 words or two page

5 x 6 =30

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| 11.a. Discuss the structure and functions of tissues in the human body
(or) | CO1K2 |
| 11.b. Discuss the structure and functions of muscles in the human body | CO1K2 |
| 12.a. List three embryonic anomalies that can affect speech, language, and/or hearing, and briefly describe their impact on speech, language and/or hearing development.
(or) | CO2K3 |
| 12.b. Describe the development of the external ear from the embryonic stage to birth. | CO2K2 |
| 13.a. Discuss the anatomy of the esophagus.
(or) | CO3K4 |
| 13.b. Explain phases of swallowing. | CO3K3 |
| 14.a. Discuss the head shadow effect, inter-aural intensity differences, and inter-aural time differences in hearing.
(or) | CO4K3 |
| 14.b. Explain the anatomy of the tympanic membrane with a diagram. | CO4K3 |
| 15.a. Explain the anatomy of central auditory pathway with diagram.
(or) | CO5K2 |
| 15.b. Explain the anatomy of the bony and membranous labyrinth. | CO5K3 |

Part-C
Answer ALL questions
Each answer should not exceed 800 words or four pages

5 x 12 =60

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| 16.a. Discuss the physiology of hearing through bone conduction.
(or) | CO4K2 |
| 16.b. Describe anatomical positions and planes of reference with examples. | CO1K4 |
| 17.a. Describe the physiology of the cochlea and how it converts sound waves into neural signal.
(or) | CO2K2 |
| 17.b. Describe the formation of face and palate during embryonic development. | CO2K1 |
| 18.a. Discuss the structural components of the pharynx.
(or) | CO3K2 |
| 18.b. Discuss the structural components of the larynx. | CO3K4 |
| 19.a. Explain the middle ear transformer function and its importance in sound transmission.
(or) | CO4K3 |
| 19.b. Describe the anatomy of the middle ear, including the ossicles and middle ear muscles | CO4K2 |
| 20.a. Discuss the micro anatomy of the cochlea and its function.
(or) | CO5K2 |
| 20.b. Explain the hearing theories and discuss its merits and demerits. | CO5K3 |
