



**Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with A++ Grade by NAAC. Recognized by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India**

**Continuous Internal Assessment I – February 2025
IV Semester**

**Class : II UG
Branch : BASLP**

**Time : 2 Hours
Max. Marks : 60**

22BASD04 DSE IV: Implantable Hearing Devices

Course Outcomes:

- CO1:** To assess candidacy for bone anchored hearing devices, middle ear implants, cochlear implants, and ABI
CO2: To select the appropriate device depending on the audiological and non-audiological findings
CO3: To handle post-implantation audiological management
CO4: To assess the benefit derived from implantation
CO5: To counsel the parents/care givers during different stages of implantation

**Part A
Choose the Correct Answer**

6 x 1 =6

1. A major advantage of implantable hearing devices over conventional hearing aids is: CO1K1
 - a) Lower cost
 - b) No need for surgery
 - c) Direct stimulation of the auditory system
 - d) Temporary use
2. The first clinically approved cochlear implant became available in the: CO1K1
 - a) 1950s
 - b) 1960s
 - c) 1970s
 - d) 1980s
3. The most common surgical approach for middle ear implantation is: CO2K1
 - a) Translabyrinthine
 - b) Mastoidectomy with tympanotomy
 - c) Craniotomy
 - d) Retrosigmoid approach
4. An auditory brainstem implant (ABI) is mainly recommended for individuals with: CO2K1
 - a) Sensorineural hearing loss with an intact auditory nerve
 - b) Conductive hearing loss
 - c) Bilateral auditory nerve damage
 - d) Mild hearing loss
5. A bimodal cochlear implant configuration consists of: CO3K1
 - a) Two cochlear implants
 - b) A hearing aid in one ear and a cochlear implant in the other
 - c) A bone conduction implant and a cochlear implant
 - d) Two auditory brainstem implants

6. A hybrid cochlear implant is designed for individuals with: CO3K1
- a) No residual hearing
 - b) Complete auditory nerve damage
 - c) Low-frequency hearing preservation
 - d) Unilateral hearing loss

Part B

3 x 6 = 18

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 7a. Describe the role of a multidisciplinary team in the management of implantable hearing devices. CO1K2
Or
- 7b. Explain the need for implantable hearing devices in individuals with hearing loss. CO1K2
- 8a. Describe the differences between active and passive middle ear implants. CO2K2
Or
- 8b. Describe the risks and complications associated with ABI surgery. CO2K2
- 9a. Explain the basic components and functioning of a cochlear implant. CO3K2
Or
- 9b. Outline the key factors influencing the selection of a cochlear implant device. CO3K2

Part C

3 x 12 = 36

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 10a. Outline the key steps involved in pre-implant counseling and obtaining informed consent. CO1K3
Or
- 10b. Describe the history and development of implantable hearing devices CO1K3
- 11a. Discuss the indications, contraindications, and candidacy criteria for middle ear implants. CO2K3
Or
- 11b. Describe the components and working mechanism of an auditory brainstem implant (ABI) CO2K3
- 12a. Explain the process of cochlear implantation, including pre-surgical assessment, surgical procedure, and post-surgical rehabilitation. CO3K3
Or
- 12b. Discuss about speech signal coding strategies in cochlear implant. CO3K3

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