

[LB 1012]

OCTOBER 2012

Sub. Code: 3016

MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

(MASLP) DEGREE EXAMINATION

SECOND YEAR

PAPER VI – HEARING DEVICES

Q.P. Code : 433016

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks
(Max.)(Max.)(Max.)

- | | | | |
|--|----|----|----|
| 1. How will you measure the electro acoustic characteristics of a hearing aid and elaborate on the recent advances in hearing aid evaluation system. | 17 | 40 | 20 |
| 2. Write in detail about the speech processing strategies in cochlear implants. | 17 | 40 | 20 |

II. Write Notes On:

- | | | | |
|---|---|----|---|
| 1. Write a note on digital modulation techniques and their application in speech analysis. | 4 | 10 | 6 |
| 2. Write about the principles and working of analog hearing aids. | 4 | 10 | 6 |
| 3. Write about filters and their application in the field of speech and hearing. | 4 | 10 | 6 |
| 4. What are tinnitus maskers? Write about their utility. | 4 | 10 | 6 |
| 5. How will you select special features in hearing aids with reference to specific clients? | 4 | 10 | 6 |
| 6. Discuss about various visual and tactile based ALDs. | 4 | 10 | 6 |
| 7. Write in detail about the pre-operative assessment for Brainstem implantation. | 4 | 10 | 6 |
| 8. Write a note on Mapping. | 4 | 10 | 6 |
| 9. Brief about Middle ear implant surgical procedure. | 4 | 10 | 6 |
| 10. Write a note on candidacy criteria for middle ear and Brain Stem Implants. | 4 | 10 | 6 |

[LD 1013]

OCTOBER 2013

Sub. Code: 3016

MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

(MASLP) DEGREE EXAMINATION

SECOND YEAR

PAPER VI – HEARING DEVICES

Q.P. Code : 433016

Time : 3 hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2X20=40)

1. Write in detail about various types of classroom amplification systems listing its advantages and disadvantages.
2. Discuss about intra-operative and post -operative electro physiological measurements in cochlear implants.

II. Write Notes on :

(10X6=60)

1. How does a digital signal processor work? Write about its application in the field of speech and hearing.
2. How noise can be reduced in hearing aids using microphone technology?
3. Write a note on AM communication systems and its application in diagnostic equipments.
4. How will you select special features in hearing aids with reference to specific clients?
5. Differentiate candidacy criteria for BAHA and middle ear implant.
6. Write about the principles and working of programmable hearing aids.
7. How will you measure the electro acoustic characteristics of a hearing aid?
8. How will you measure the outcome with BAHA?
9. Write a note on recent advances in cochlear implants.
10. Write about brainstem implant and list the selection criteria for the same.

[LE 0414]

APRIL 2014

Sub. Code: 3016

**MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
(MASLP) DEGREE EXAMINATION
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : 3 hours

Maximum : 100 marks

Answer All Questions

I. Elaborate on:

(2X20=40)

1. Digital Signal Processing- Principles and its applications in Speech and Hearing.
2. a. What are the criteria for candidacy selection for a cochlear implant in pediatric population.
b. Types of cochlear implant available presently.

II. Write Notes on :

(10X6=60)

1. Application of tele-rehabilitation in the field of Speech and Hearing.
2. How do you implement non-linear amplification in Speech and hearing?
3. Recent advances in Hearing aid evaluation systems.
4. Tinnitogram and its applications in fitting tinnitus masker.
5. Two visual based assistive listening devices.
6. Fine structure processing.
7. Trouble shooting cochlear implants.
8. BAHA.
9. Noise reduction technologies.
10. Outcomes in ABI.

[LF 1014]

OCTOBER 2014

Sub. Code: 3016

**MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
(MASLP) DEGREE EXAMINATION
SECOND YEAR
(2010-2011 Session onwards)
PAPER VI – HEARING DEVICES**

Q.P. Code: 433016

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. How will you measure the electro acoustic characteristics of a hearing aid? and elaborate on the recent advances in hearing aid evaluation system.
2. Write in detail about various types of classroom amplification systems listing its advantages and disadvantages.

II. Write notes on:

(10 x 6 = 60)

1. Write a note on satellite communication and discuss its application in tele-rehabilitation.
2. Write about the principles and working of DSP based hearing aids.
3. How will you select special features in hearing aids with reference to specific clients?
4. Write a note on FM communication systems and its application in FM hearing aids.
5. Write about middle ear implant and list the candidacy criteria for the same.
6. How will you measure the outcome with BAHA?
7. Write about filters and their application in the field of speech and hearing.
8. Differentiate candidacy criteria for Cochlear and Brain Stem Implants.
9. Write in detail about the pre-operative assessment for cochlear implantation.
10. What are tinnitus maskers? Write about their utility.

[LG 0415]

APRIL 2015

Sub. Code: 3016

**MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
(MASLP) DEGREE EXAMINATION
SECOND YEAR
(2010-2011 Session onwards)
PAPER VI – HEARING DEVICES**

Q.P. Code: 433016

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Write in detail about the various types of classroom amplification systems listing its advantages and disadvantages.
2. Discuss about intra-operative and post-operative electro physiological measurements in cochlear implants.

II. Write notes on:

(10 x 6 = 60)

1. Write a note on AM communication systems and its application in diagnostic equipments.
2. Differentiate candidacy criteria for BAHA and middle ear implant.
3. Write about the principles and working of programmable hearing aids.
4. How will you select special features in hearing aids with reference to specific clients?
5. How will you measure the outcome with BAHA?
6. How does a digital signal processor work? Write about its application in the field of speech and hearing.
7. How noise can be reduced in hearing aids using microphone technology?
8. Write about brainstem implant and list the selection criteria for the same.
9. How will you measure the electro acoustic characteristics of a hearing aid?
10. Write a note on recent advances in cochlear implants.

[LI 0416]

APRIL 2016

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. What are the different Real ear measurements? Usefulness of the Real Ear Measures in fitting hearing aids.
2. Discuss the indications both otological and audiological, which makes the patient a candidate for Bone Anchored Hearing Aid.

II. Write notes on:

(10 x 6 = 60)

1. What is FM and AM transmission? How are they different from each other?
2. Describe the terms filtering, sampling, and quantization with reference to Digital Signal Processing.
3. Implementation of telerehabilitation in a rural setup.
4. Differentiate Input and Output compression.
5. Name and describe the standards for hearing aids.
6. Special considerations in choosing children below 24 months for cochlear implants.
7. What will you do when a child stops responding to the input from their cochlear implants?
8. Treatment options for a patient who reports of tinnitus in both ears.
9. Outcome measures in children with Auditory Brainstem Implant.
10. Importance of Intra operative testing of cochlear implants in device programming.

[LJ 1016]

OCTOBER 2016

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY EXAMS
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. A 35 years old male visits your clinic with a complaint of reduced hearing and ringing sensation in the right ear. Audiological results suggest bilateral mild sensorineural hearing loss with tinnitus matching at 2000 kHz. What further information would you obtain and if you were to give amplification devices, what are your features and options that you would select?
2. What is middle ear implant? Write on selection criteria, recommended assessment protocols, steps in management and outcomes of middle ear implants.

II. Write notes on:

(10 x 6 = 60)

1. Compare the advantages of digital signal processing over analogue processing in hearing aids.
2. Role of FM transmission in audiological rehabilitation.
3. Write briefly on importance of channels in hearing aids and channel separation.
4. Explain the technique of non linear amplification.
5. Describe the controls in the analog hearing aids.
6. List and describe the use of at least three visual AIDs used by hearing impaired.
7. Write about three speech coding strategies.
8. Write about ESRT and EABR and their role in Cochlear implant.
9. What is the selection criteria for BAHA?
10. What are the outcomes reported from middle ear implants?

[LK 0517]

MAY 2017

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY EXAMS
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on: **(2 x 20 = 40)**

1. Describe the various technological advances to improve signal to noise ratio in hearing aids.
2. Describe the candidacy and pre-operative assessment involved for cochlear implantation.

II. Write notes on: **(10 x 6 = 60)**

1. Candidacy of BAHA.
2. Types of middle ear implant.
3. Mapping in cochlear implant.
4. Cochlear implant – team members.
5. Tinnitus masker.
6. FM system.
7. Usefulness of EAC.
8. Verification method for hearing aid.
9. DSP technology.
10. Application of satellite communication.

[LL 1017]

OCTOBER 2017

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY EXAMS
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on: (2 x 20 = 40)

1. Discuss the audiological assessment and management options for 3 year old pre-lingual deaf child.
2. What is BAHA? Write on selection criteria, recommended assessment protocols, steps in management and outcomes of middle ear implants.

II. Write notes on: (10 x 6 = 60)

1. How digital signal processing is different from analogue processing?
2. Describe any two digital modulations techniques.
3. Discuss in detail about non-linear amplification and its advantages over linear amplifications.
4. What are tinnitus maskers? Discuss their utility and efficacy.
5. Discuss the pre-operative and post-operative counseling tips for CI.
6. Describe any two speech coding strategies currently in use.
7. Write short note on electro acoustic measurement in hearing aids.
8. Describe the intra-operative monitoring in CI and justify the need.
9. Describe the factor affecting the outcome of CI.
10. Discuss the role of FM transmission in audiological rehabilitation.

[LN 1018]

OCTOBER 2018

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY EXAMS
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. ALDs and its types.
2. Write on selection criteria, assessment protocols, management & outcomes of BAHA.

II. Write notes on:

(10 x 6 = 60)

1. Basics of FIR filters & their applications in speech & hearing.
2. FM transmission and reception and its application in FM hearing aids.
3. Principles and working of programmable based hearing aids.
4. Techniques of noise reduction using microphone technology and their implementation in hearing aids.
5. International standards in the evaluation of hearing aids.
6. What are tinnitus maskers? Discuss their utility.
7. Cochlear Implants.
8. Advantages & disadvantages of bimodal stimulation.
9. Describe any two speech coding strategies currently in use.
10. Candidacy of Middle ear implants.

[LP 1019]

OCTOBER 2019

Sub. Code: 3016

**MASTER OF AUDIOLOGY & SPEECH LANGUAGE PATHOLOGY EXAMS
SECOND YEAR
PAPER VI – HEARING DEVICES**

Q.P. Code : 433016

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Discuss in detail about Brainstem implant.
2. Explain in detail about evaluation of CI and the role of amplification in CI candidacy for Children.

II. Write notes on:

(10 x 6 = 60)

1. Write short note on analogue to digital and digital to analogue converters.
2. Write a note on advances in digital modulation techniques.
3. Detail about recent advances in hearing aid evaluation systems.
4. Write a note on technology of channel separation.
5. Elaborate shortly about auditory based ALDs.
6. Explain in detail about delta modulation.
7. What are the assessment strategies in CI?
8. Explain in detail about assessment and management of middle ear implant.
9. Detail about tinnitus markers and their utility.
10. Explain about satellite communication and its application in tele-rehabilitation.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321]

MARCH 2021

Sub. Code: 3016

(OCTOBER 2020 EXAM SESSION)

MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

SECOND YEAR (From 2010-2011 onwards)

PAPER VI - HEARING DEVICES

Q.P. Code : 433016

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 X 20=40)

1. What is Digital signal processing? Write its applications in the field of Audiology.
2. Write a note on the instrumentation, procedure and analysis of Electro acoustic characteristics of hearing aids.

II. Write notes on:

(10 X 6=60)

1. Tele-rehabilitation in audiology.
2. Explain different type of tactile based ALD system.
3. Discuss any three Speech processing strategies in cochlear implant.
4. Component of cochlear implant.
5. Candidacy of BAHA.
6. Brainstem implant.
7. AM transmission and reception and its application in diagnostic equipment's.
8. Recent advances in evaluation of hearing aids.
9. Mapping.
10. Explain different types of tinnitus masker.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0122]

**JANUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 3016

**MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
SECOND YEAR (From 2010-2011 onwards)
PAPER VI - HEARING DEVICES
Q.P. Code : 433016**

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 X 20=40)

1. Comprehensive evaluation and candidacy selection for Cochlear Implant.
2. Digital Modulation techniques and their applications in speech analysis.

II. Write notes on:

(10 X 6=60)

1. Write about Tinnitus maskers and its usefulness
2. Various visual based assisting listening devices
3. Candidacy criterias for brainstem implant
4. Technological advances to improve signal to noise ratio in hearing aids
5. Satellite communication and its applications in tele -rehabilitation in the field of speech & hearing
6. Differentiate between AM & FM transmission with its applications
7. Channel separation in hearing aids
8. Criteria's for selection of special features in hearing aids for specific clients
9. Analog vs Digital Hearing aids
10. Discuss various standards for hearing aids

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1022]

OCTOBER 2022

Sub. Code: 3016

**MASTER OF AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
SECOND YEAR (From 2010-2011 onwards)
PAPER VI - HEARING DEVICES
Q.P. Code : 433016**

Time : Three hours

Answer ALL Questions

Maximum : 100 Marks

I. Elaborate on:

(2 X 20=40)

1. Principles and working of Analog, Programmable and DSP based hearing aids.
2. Speech processing strategies in Cochlear implants.

II. Write notes on:

(10 X 6=60)

1. Need and advantages of digital systems and digital signal processing.
2. Components of BAHA.
3. Hearing aid evaluation and recent advances.
4. Contraindications of cochlear implants.
5. Tinnitus maskers and their utility.
6. Vibrant soundbridge.
7. Tactile based ALDs.
8. Components of cochlear implants.
9. Bimodal stimulation and its advantages.
10. Technology of channel separation and its advantages in hearing aids.
