[LM 0218] FEBRUARY 2018 **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

FIRST SEMESTER (2017 - 2018)

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code: 802335

Time: Three Hours **Maximum : 75 Marks**

Answer All questions

I. Elaborate on: **(2 x 10 = 20)**

1. Explain the principles of operation with a block diagram, calibration and maintenance of audiometers.
2. Elaborate on Analog to digital Converter, sampling and quantization with neat diagrams.

II. Write notes on: **(8 x 5 = 40)**

1. Explain hearing aid with neat diagram.
2. Explain reverberation, reflection and absorption of sound with diagrams.
3. What are the fundamentals of digital filtering?
4. Explain how an audiometric room is constructed?
5. Explain 7 Segment display with a need diagram.
6. Explain the Characteristics of Sound.
7. Write the principles and working of automatic speech recognition with block diagrams.
8. Compute the following:
   10101_2 or 10101B in Binary form to Decimal form.
   1001 in Binary to Hex.

III. Short answers on: **(5 x 3 = 15)**

1. Define Polarity and Ground with Circuit Diagrams.
2. Explain Absorption coefficient and Sabine Formula.
3. Explain Line regulation and Load Regulation.
4. Write short note on LCD.
5. Explain Speech Synthesis.

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[LN 0818] AUGUST 2018 **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

FIRST SEMESTER (2017 - 2018)

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code: 802335

Time: Three Hours **Maximum : 75 Marks**

Answer All questions

I. Elaborate on: **(2 x 10 = 20)**

1. Explain the following Components with suitable diagram and circuit diagram
   (a) Resistor (b) Transformers (c) Potentiometer (d) Transistor
2. Write note on artificial larynx and Hearing Aid.

II. Write notes on: **(8 x 5 = 40)**

1. Explain Amplitude, Frequency and Phase of Complex tone.
2. Explain Switch Mode Power supply with block diagram.
3. Briefly define Amplitude, Frequency and Phase of Pure tone.
4. Briefly explain Unijunction Transistor with circuit diagram.
5. Compute the following:
   (a) 10101_2 or 10101B in Binary form to Decimal form.
   (b) 1001 in Binary to Hex.
6. Explain the following components with suitable diagram:
   (a) Electrodes (b) Filters and (c) Preamplifiers
7. Explain the speech and voice analysis system using a block diagram.
8. Elaborate the principles and working of audiometer with block diagram.

III. Short answers on: **(5 x 3 = 15)**

1. Explain DC Power supply with block diagram.
2. Define Vibration and characteristics of sound.
3. Explain the Operating System, hardware and software of a computer.
4. Explain reverberation with neat diagram.
5. Define sampling and quantization with neat diagram.

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[LO 0219] FEBRUARY 2019 **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

FIRST SEMESTER (2017 - 2018)

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code: 802335

Time: Three Hours **Maximum : 75 Marks**

Answer All questions

I. Elaborate on: **(2 x 10 = 20)**

1. Explain the components of audiometer in detail with block diagram and procedure to calibrate them.
2. Explain digital signal processing in detail.

II. Write notes on: **(8 x 5 = 40)**

1. Passive components in electronics.
2. Parts of a computer.
3. Simple harmonic motion.
4. Characteristics of simple tones.
5. Impedance.
6. Block diagram of Otoacoustic emissions.
7. Electroglottograph.
8. Types of microphones.

III. Short answers on: **(5 x 3 = 15)**

1. Counters.
2. Linear predictive analysis of speech.
3. Fast Fourier transformation.
4. Reflection and absorption.
5. Artificial larynx.

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[LP 0819] AUGUST 2019 **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

FIRST SEMESTER (2017 - 2018)

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code: 802335

Time: Three Hours **Maximum : 75 Marks**

Answer All questions

I. Elaborate on: **(2 x 10 = 20)**

1. Explain DC power supplies in detail.
2. Explain principle, components, types and working of loud speakers.

II. Write notes on: **(8 x 5 = 40)**

1. Light emitting diodes.
2. Uninterrupted power supply.
3. Couplers and it's types.
4. Audiometric rooms.
5. Block diagram and operation of hearing aids.
6. Flip flops.
7. Reflection and absorption.
8. Memory devices of computer.

III. Short answers on: **(5 x 3 = 15)**

1. Electrodes.
2. Diodes.
3. Stabilizers.
4. Counters.
5. Optical memory devices.

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[LQ 0220] FEBRUARY 2020 **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

FIRST YEAR – SEMESTER - I

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code: 802335

Time: Three Hours **Maximum : 75 Marks**

Answer All questions

I. Elaborate on: **(2 x 10 = 20)**

1. Explain concept of impedance and admittance in detail.
2. Explain calibration of instruments in the field of speech and hearing.

II. Write notes on: **(8 x 5 = 40)**

1. Logic gates.
2. Amplifiers and it's types.
3. Complex sounds.
4. Reflection and absorption.
5. Time domain methods of speech processing.
6. Binary number system.
7. Analog to digital conversion.
8. Block diagram of evoked potentials.

III. Short answers on: **(5 x 3 = 15)**

1. Sampling.
2. Inverters.
3. Autocorrelation.
4. Filters.
5. Grounding.

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

[AHS 0321] MARCH 2021 Sub. Code: 2335

(AUGUST 2020 EXAM SESSION)

BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

SEMESTER - I (Regulation 2017-2018)

PAPER V – ELECTRONICS AND ACOUSTICS

Q.P. Code : 802335

Time: Three hours **Answer ALL Questions** **Maximum: 75 Marks**

I. Elaborate on: **(2 x 10 = 20)**

1. Explain calibration and maintenance of audiometers in detail.
2. Explain linear regulated power supplies with neat block diagrams.

II. Write notes on: **(8 x 5 = 40)**

1. List various parameters of sound and define them.
2. Alternative current power supply.
3. Reflection and absorption.
4. Components of a computer.
5. Digital signal processing.
6. Automatic speech recognition.
7. Hearing aid.
8. Block diagram and function of impedance audiometer.

III. Short answers on: **(5 x 3 = 15)**

1. Filters.
2. Sampling.
3. Hex code.
4. Sabine’s formula.
5. Seven segment display.

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

[AHS 0422] APRIL 2022 Sub. Code: 2335

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)
BACHELOR IN AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY
SEMESTER - I (Regulation 2017-2018)
PAPER V – ELECTRONICS AND ACOUSTICS
Q.P NO. 802335

Time: Three Hours **Answer All questions** **Maximum: 75 Marks**

I. Elaborate on : (2X10=20)

1. Explain the components, principle of operation and types of Microphones in detail with neat diagram.
2. Explain the Characteristics of simple and complex sounds with neat diagram.

II. Write Notes on : (8X5=40)

1. Analog to Digital conversion.
2. Semiconductors and diodes.
3. Regulated power supply.
4. Time Domain Methods of speech Processing
5. Logic gates.
6. Construction of Audiometric rooms.
7. Block Diagram and components of Otoacoustic emissions.
8. Binary Number system.

III. Short Answers on : (5X3=15)

1. Artificial Larynx.
2. Filters.
3. Autocorrelation.
4. Amplifiers.
5. Capacitors.

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

[AHS 1122] **NOVEMBER 2022** **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH - LANGUAGE PATHOLOGY
SEMESTER - I (Regulation 2017-2018)
PAPER V – ELECTRONICS AND ACOUSTICS
Q.P NO. 802335

Time: Three Hours **Answer All questions** **Maximum: 75 Marks**

I. Elaborate on : **(2X10=20)**

1. Explain generation, propagation and characteristics of pure tones in detail with neat diagram.

2. Explain construction of audiometric rooms and maximum permission noise limits of these rooms.

II. Write Notes on : **(8X5=40)**

1. Transformers.
2. Light emitting diodes.
3. Impedance and admittance.
4. Types and functions of microphones.
5. Linear predictive analysis of speech signal.
6. Speech recognition systems.
7. Evoked potential systems.
8. Characteristics of Puretone signal.

III. Short Answers on : **(5X3=15)**

1. Logic gates.
2. Fourier analysis.
3. Components of loudspeaker.
4. Wavelength of low and high frequency sounds.
5. Inductors.

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

[AHS 0423] **APRIL 2023** **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH - LANGUAGE PATHOLOGY
SEMESTER - I (Regulation 2017-2018 onwards)
PAPER V – ELECTRONICS AND ACOUSTICS
Q.P. Code: 802335

Time: Three Hours **Answer All questions** **Maximum: 75 Marks**

I. Elaborate on : **(2X10=20)**

1. Principle of operations, block diagram, calibration, maintenance and troubleshooting of audiometers.
2. Explain digital signal processing and discuss in detail its application to hearing aids.

II. Write Notes on : **(8X5=40)**

1. Reflection and absorption.
2. Care and preventive maintenance of computers.
3. Trouble shooting of audiometers and hearing aids.
4. Sampling and quantization.
5. Amplitude, frequency and phase of complex tones.
6. Transformers and potentiometers.
7. Types and functions of amplifiers.
8. Electroglottograph.

III. Short Answers on : **(5X3=15)**

1. Absorption co-efficient.
2. Grounding in audiometric room.
3. Operating system in computers.
4. Block diagram of a DC power supply.
5. Vibrations.

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

[AHS 0424] **APRIL 2024** **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH - LANGUAGE PATHOLOGY
SEMESTER - I (Regulation 2017-2018 onwards)
PAPER V – ELECTRONICS AND ACOUSTICS
Q.P. Code: 802335

Time: Three Hours **Answer All questions** **Maximum: 75 Marks**

I. Elaborate on : **(2 X 10 = 20)**

1. Principle of operations, block diagram, calibration, maintenance and troubleshooting of immittance metres and Oto-acoustic emissions.

2. Explain in detail the materials used and various factors to be considered in construction of audiometric rooms. Discuss the Evaluation of efficiency of sound proofing in the audiometric rooms.

II. Write Notes on : **(8 X 5 = 40)**

1. Sound generation and propagation.
2. Impedance and admittance.
3. Automatic speech recognition.
4. Semiconductor diodes and transistors.
5. Types and functions of loudspeaker.
6. List the basic elements of a hearing aid and discuss its functions.
7. Speech synthesis.
8. Linear and digital integrated circuits.

III. Short Answers on : **(5 X 3 = 15)**

1. Binary number system.
2. Hardware Vs software.
3. Analog to digital converters.
4. Seven segment displays.
5. Memory devices in computers.

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

[AHS 0425] **APRIL 2025** **Sub. Code: 2335**

BACHELOR IN AUDIOLOGY AND SPEECH - LANGUAGE PATHOLOGY
SEMESTER - I (Regulation 2017-2018 onwards)
PAPER V – ELECTRONICS AND ACOUSTICS
Q.P. Code: 802335

Time: Three Hours **Answer All questions** **Maximum: 75 Marks**

I. Elaborate on : **(2 X 10 = 20)**

1. Principles of operations block diagram, calibration, maintenance and troubleshooting of Evoked potential systems.
2. Write in detail about various components of a Hearing Aid and trouble shooting of a Hearing Aid.

II. Write Notes on : **(8 X 5 = 40)**

1. Types and functions of Microphone.
2. Electrodes, filters and Preamplifiers.
3. Artificial Larynx.
4. Electro-mechano-acoustic transformers.
5. Evaluation of Efficiency of Sound proofing in the Audiometric rooms.
6. Infinite impulse response and finite impulse response filters.
7. Linear predictive analysis of Speech signals.
8. Amplitude, frequency and phase of Puretone.

III. Short Answers on : **(5 X 3 = 15)**

1. Sabine’s formula.
2. Amplifiers.
3. Uni-junction transistors and thyristors.
4. Semiconductor diodes.
5. Specifications of a DC power supply unit.

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