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## MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent unit of MAHE, Manipal 576104)

**II SEMESTER M.Tech (BME) DEGREE END-SEM EXAMINATIONS, APR/MAY 2019.**

**SUBJECT: ALLIED HEALTH SCIENCES (BME 5202)  
(REVISED CREDIT SYSTEM)**

**Wednesday, 24<sup>th</sup> April, 2019, 9 am to 12 noon**

**TIME: 3 HOURS**

**MAX. MARKS: 50**

**Instructions to Candidates:**

- 1. Answer all 5 questions from part A and all 5 questions from part B. Use separate answer books.**
- 2. Draw labeled diagram wherever necessary**

**PART-A: SPEECH & HEARING**

**(Max. Marks 25)**

1. Differentiate hearing aid and cochlear implant. 5
2. Explain Alternative augmentative communication (AAC). 5
3. Explain Auditory Brainstem Response (ABR). 5
4. Explain the role of biomedical engineers in the field of speech and hearing. 5
5. Explain artificial larynx 5

**PART-B: PHYSIOTHERAPY**

**(Max. marks 25)**

1. Explain the instrumentation for electrical muscle stimulation, wave forms and types of currents used for the same. 5
2. Write short note on Interferential therapy. 5
3. Explain all the temporal and spatial gait variables. 5
4. Explain the pain gate mechanism. 5
5. Explain the instrumentation for Nerve conduction study. 5